

**1X800 MW  
YAMUNANAGAR DCRTTP  
CHIMNEY PACKAGE**

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

**CONSTRUCTION OF ONE (1) NO. 275 M TALL SINGLE FLUE RCC CHIMNEY (EXCEPT CHIMNEY RAFT) INCLUDING CHIMNEY RCC WIND SHIELD, FABRICATION & ERECTION OF STEEL FLUE CANS, STRUCTURAL PLATFORMS, INSTALLATION OF ELECTRICAL ITEMS IN CONFORMITY WITH THE APPROVED LAYOUT, ELEVATORS ETC. TO COMPLETE THE CHIMNEY IN ALL RESPECT FOR 1X800 MW DEEN BANDHU CHHOTU RAM THERMAL POWER PLANT, HPGCL, YAMUNA NAGAR, HARYANA.**

**BHARAT HEAVY ELECTRICALS LIMITED**



# TECHNICAL CONDITIONS OF CONTRACT (TCC)

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## Chapter - I: PROJECT INFORMATION

| Sl. No. | Title                                   | Description                                                                                                                                                                                                                       |
|---------|-----------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1       | <b>Project Title</b>                    | 1X800 MW DEEN BANDHU CHHOTU RAM THERMAL POWER PLANT, HPGCL, YAMUNA NAGAR, HARYANA.                                                                                                                                                |
| 2       | <b>Owner/Customer</b>                   | HARYANA POWER GENERATION CORPORATION LIMITED, PANCHKULA, HARYANA.                                                                                                                                                                 |
| 3       | <b>Owner's Consultant</b>               | DESEIN PRIVATE LIMITED, NEW DELHI                                                                                                                                                                                                 |
| 4       | <b>Nearest Airport</b>                  | The nearest major airport is Chandigarh at a distance of about 110 km from project site.                                                                                                                                          |
| 5       | <b>Access by Road/Rail/Major Cities</b> | Nearest National Highway to the Project Site is NH- 344.<br><br>The nearest major town is Yamuna Nagar, which is at a distance of about 08 Km from Project Site.<br><br>The nearest railway station is Kalanaur at 2Km (Approx.). |
| 6       | <b>Project Site Location</b>            | PLACE KALANAUR                                                                                                                                                                                                                    |
|         |                                         | DISTRICT YAMUNA NAGAR                                                                                                                                                                                                             |
|         |                                         | STATE HARYANA                                                                                                                                                                                                                     |
|         |                                         | COUNTRY INDIA                                                                                                                                                                                                                     |
| 7       | <b>Nearest Water Body</b>               | Western Yamuna Canal, adjacent to site                                                                                                                                                                                            |
| 8       | <b>Site Ambient Condition</b>           | Refer enclosed Climatological Table                                                                                                                                                                                               |
| 9       | <b>Basic Wind Speed</b>                 | Basic wind speed at project site is 47m/sec. as per IS:875 Part-3                                                                                                                                                                 |
| 10      | <b>Seismic data</b>                     | Seismic analysis shall be carried out as per the latest edition of IS:1893 (Part 1 & 4). Zone-IV shall be considered.                                                                                                             |

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## Chapter - I: PROJECT INFORMATION

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| <b>1.0</b> | <b>INSTRUCTIONS TO BIDDERS</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>1.1</b> | The Bidder shall visit project site and acquire full knowledge and information about conditions prevailing at site and in & around the plant premises, together with site conditions, transportation routes, various distances, all the statutory, obligatory, mandatory requirements of various authorities and all information that may be necessary for preparing the bid and entering into the Contract. All costs for and associated with site visits shall be borne by the bidder. |
| <b>1.2</b> | Other contractors would be working in this area and their structures are to be protected. The material brought and stacked for construction should not make hindrance to other contractors.                                                                                                                                                                                                                                                                                              |
| <b>1.3</b> | The information given herein is for general guidance and shall not be contractually binding on BHEL/Owner. All relevant site data /information as may be necessary shall have to be obtained /collected by the Bidder.                                                                                                                                                                                                                                                                   |
| <b>1.4</b> | The contractor, in the event of this work awarded to him, shall establish an office at site and keep posted an authorized, responsible officer with valid Power of Attorney for the purpose of the contract. Any order or instructions of the 'Engineer' or his duly authorized representative, communicated to the contractor's representative at site office will be deemed to have been communicated to the contractor at his legal address.                                          |
| <b>1.5</b> | No claim will be entertained by BHEL on ground of lack of knowledge and the contractor's rates shall be deemed to have taken this into account.                                                                                                                                                                                                                                                                                                                                          |
| <b>1.6</b> | Bidders may fix up their site visit in consultation with below mentioned contact person:                                                                                                                                                                                                                                                                                                                                                                                                 |
|            | <b>Name:</b> <b>Mr. Mukesh Kumar</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|            | <b>Designation:</b> Sr. Manager / Yamuna Nagar site                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|            | <b>Email:</b> mukeshk@bhel.in                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|            | <b>Ph no:</b> 9721454917                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|            | <b>Name:</b> <b>Mr. Rajeev Kumar</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|            | <b>Designation:</b> DGM                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|            | <b>Email:</b> <a href="mailto:rajeev.k@bhel.in">rajeev.k@bhel.in</a>                                                                                                                                                                                                                                                                                                                                                                                                                     |
|            | <b>Ph no:</b> 7052001777                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter – II: SCOPE OF WORKS

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| 2.0   | <b>Scope of Works:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 2.1   | CONSTRUCTION OF <b>ONE (1) NO. 275 M TALL SINGLE FLUE RCC CHIMNEY (EXCEPT CHIMNEY RAFT)</b> INCLUDING CHIMNEY RCC WIND SHIELD, FABRICATION & ERECTION OF STEEL FLUE CANS, STRUCTURAL PLATFORMS, INSTALLATION OF ELECTRICAL ITEMS IN CONFORMITY WITH THE APPROVED LAYOUT, ELEVATORS ETC. TO COMPLETE THE CHIMNEY IN ALL RESPECT FOR <b>1X800 MW DEEN BANDHU CHHOTU RAM THERMAL POWER PLANT, HPGCL, YAMUNA NAGAR, HARYANA.</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| 2.1.1 | <b>Scope of Consortium Partner (In case of consortium bidding):</b> -Construction of RCC Chimney Shell with Slipform shuttering.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| 2.2   | <b>The brief scope of work is as follows:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 2.2.1 | <p>Construction of <b>One (1) Nos. 275-metre-tall single flue RCC chimney</b> complete in all respect including:</p> <ol style="list-style-type: none"> <li>RCC Works for Chimney Shell (using slip form shuttering) &amp; other misc. works.</li> <li>Supply of Structure Steel (Bolts, Chequered plate etc.) is under bidder's scope as per BOQ.</li> <li>Site Fabrication &amp; Erection of Structural Platforms (Internal &amp; External), Staircase, Fabrication &amp; Erection of Steel Flue Cans &amp; flue duct inside the chimney, Mini Shell with Titanium cladding as per Specification, (including development of hard crusted / paved fabrication yard for onsite structural steel fabrication work wherever permitted by customer),</li> <li>Supply &amp; Installation of Electrical Items, Fixtures, Fittings, Conduit, Embedment and other associated works.</li> <li>Supply including design, receipt, unloading, erection, testing and commissioning of stack elevator and electrical equipment; allied items, cabling, earthing, spares etc.</li> <li>Condensate Water Collection system in conformity with the approved layout etc.</li> <li>Air Aviation Obstruction lighting system, gas sampling ports, opacity measurement ports, lightning protection and grounding system, doors for access to the shell, external platforms and inspection of the liners, ladders, communication system components, embedment for installation of equipment and fixtures, Lift (inside windshield), Ventilation, insulation etc. all complete.</li> <li>Painting both internal and external of the chimney shell as well as of all doors, stairs, ladders and other structural steel items in accordance with this specification and approved drawings.</li> </ol> <p><b>Note: The scope work for Chimney Civil Works under the specification covers the supply, storage at site, storage of material supplied by BHEL (i.e. taking delivery of materials from plant gate / BHEL stores, transportation to site), Civil, Structural and Architectural works as specified herein but without excluding any other necessary</b></p> |

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## Chapter – II: SCOPE OF WORKS

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|       | <b>components, which are not mentioned herein but are required for the completeness and efficient, easy and reliable operation of the system.</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 2.2.2 | The contractor shall prepare, at his own cost, the detailed working drawings showing all details of the formwork, staging/ slip form (adequacy to be supported by design calculations) and other arrangements for the concreting work and submit six copies of the same duly approved/vetted by reputed third party consultant/ Engineering Institutes with consent of BHEL Engineer. Only on the receipt of the approval/vetting of the consultants the work shall be taken up. However, the consultant's approval of the design/drawings shall not absolve the Bidder of his responsibility for correctness of design, accuracy of dimensions, loadings, details, etc., or safety and stability of the structure including foundations, accessories, appurtenances, etc. Any modifications/change in subsequent revisions of design/drawings shall be clearly marked and identified with a revision of the approval. All modifications suggested by the Owner/BHEL to meet specification requirements and sound engineering practice, shall be incorporated by the Bidder at no extra cost to the Owner. |
| 2.2.3 | The contractor shall prepare, at his own cost, the detailed working drawings showing all Electrical details and Elevator details and shall submit six copies of the same for the approval of the Engineer-in-Charge /consultants and only on the receipt of the approval of the consultant the work shall be allowed to be taken up.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 2.2.4 | Supply including design, receipt, unloading, erection, testing and commissioning of stack elevator and electrical equipment; allied items, cabling, earthing, spares etc. are also under the scope of this of work.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| 2.2.5 | VOID                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 2.2.6 | BHEL at its discretion may include other area works limited to 15% of awarded contract value, which are not mentioned in above scope of works. Contractor shall execute such works as desired and as directed by BHEL Engineer. The item rates & contract conditions shall remain unchanged for such works.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 2.3   | The work under this contract shall be carried out <b>as per BOQ Cum Rate Schedule</b> and in compliance of tender conditions including technical specifications and approved drawings/ documents.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 2.4   | VOID                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 2.5   | <b>General:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| 2.5.1 | Providing all incidental items not shown or specified but reasonably implied or necessary for the successful completion of the work in accordance with contract.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |

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### Chapter – II: SCOPE OF WORKS

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| 2.5.2  | The drawings enclosed with this tender are intended to give the tenderer a general idea of the type and extent of work involved. The drawings are as such only indicative and not to be considered as the exact construction drawings.                                                                                                                                                                                                                                                                                                                                                                                     |
| 2.5.3  | Further this is to be noted that the drawings and the documents furnished along with this specification are the sole property of BHEL. It must not be used directly or indirectly in any way detrimental to the interest of the company.                                                                                                                                                                                                                                                                                                                                                                                   |
| 2.5.4  | Furnishing all labor, materials, supervision, scaffolding, construction plans, equipment, tools & plants, inspection/ measuring/ testing instruments, supplies, transport to and from the site, fuel, electricity, compressed air, water, transit and storage insurance and all other incidental items and temporary works not shown or specified but reasonably implied or necessary for the proper completion, maintenance and handing over the works in accordance with the stipulations laid down in the contract documents and additional stipulations as may be provided by the Engineer during the course of works. |
| 2.5.5  | All the works areas shall be adequately flood lighted to the satisfaction of the Engineer-in-Charge when the work is in progress during the night shifts. Adequate lighting facilities such as flood lamps, hand lamps and area lighting shall be arranged by the contractor at the site of construction, and contractor's material storage area etc. at his cost.                                                                                                                                                                                                                                                         |
| 2.5.6  | Drawings showing enough details for the construction as per the specification shall be furnished to the contractor in a phased manner as far as possible.                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| 2.5.7  | All necessary arrangement for safety like Hard Barricading around deep structures with scaffolding pipes and providing of safety net on the slope of excavated area is in contractor's scope. Contractor shall comply with all safety requirements as per statutes, BHEL and Customer specifications as applicable for execution of works. Safety rules and guidelines of BHEL and BHEL'S customer are provided elsewhere.                                                                                                                                                                                                 |
| 2.5.8  | The Customer may depute their representative for checking and supervision of important stages of work. The contractor shall be required to provide all facilities for inspection of works at no extra cost to BHEL. Any defect in quality of work or deviations from drawings / specifications pointed out during such inspection shall be made good by the contractor in the same way as if pointed out by the BHEL Engineer, without any cost implication to BHEL.                                                                                                                                                       |
| 2.5.9  | Giving all notices, paying all fees, taxes etc., in accordance with the general conditions of contract, that is required for all works including temporary works.                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 2.5.10 | VOID                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 2.5.11 | Carrying out topographic survey of the entire and establish levels and coordinates at suitable intervals from existing grid levels and coordinates furnished by the owner established bench marks, setting out the locations and levels of proposed structures, constructions and marking                                                                                                                                                                                                                                                                                                                                  |

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## Chapter – II: SCOPE OF WORKS

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|        | of reference pillars and other identification works etc., The contractor shall provide the owner/BHEL such a assistance, instruments, machines, labour and materials as are normally required for examining, measuring and testing any work and the quality, weight or quantity of any material used.                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 2.5.12 | Arranging for joint checking (with BHEL / BHEL's Customer / Consultant) of all site construction activities Preparation of joint protocols for each & every activity and maintaining quality records for audit/inspection as per approved FQP by BHEL.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| 2.5.13 | <p>Medical/First aid center/medicine purchased for emergency/ Doctor purpose along with ambulance services with fuel and operator (round the clock) shall be arranged by BHEL for handling medical emergencies. Cost against these facilities shall be distributed/ shared among the contractors working in Project site proportionately based on contract value.</p> <p>However, till the time BHEL is arranging first aid arrangements &amp; ambulance as said above, the contractor to suitably arrange for necessary emergency/first aid facilities for their personnel.</p>                                                                                                                                                                                           |
| 2.5.14 | The complete works shall be carried out <b>as per BOQ cum Rate schedule</b> . If any work covered in the scope of contract cannot be executed using items available in BOQ, supplementary items shall be made and rates for such items shall be worked out as per <b>GCC clause 2.16.2</b> . However, contractor shall be bound to execute all the works under the scope of the contract and decision whether a supplementary item is applicable or not, shall be taken by BHEL Engineer which will be binding on the contractor.                                                                                                                                                                                                                                          |
| 2.5.15 | Any activity which is necessarily required for satisfactory execution of any item of BOQ in line with technical specifications shall be deemed to be included in BOQ item even if it is not described in the item description and no extra payment shall be made against such activity.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 2.5.16 | <p><b>Documentation and Reporting:</b></p> <p>The Contractor shall maintain accurate records of material supplies, including delivery challans, invoices, and stock registers. These records shall be submitted periodically for verification and reconciliation by the BHEL</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 2.5.17 | <p><b>Quantity Assessment of Supply Items: -</b></p> <p>Supply of BOI material shall be based on assessment of the project status/requirement and shall be done only after written clearance of BHEL's Engineer-In-Charge. The supply quantities shall be calculated based on available drawings and work fronts.</p> <p>Contractor shall be the custodian of the BOI supplied items. In case, contractor fails to execute/install/fix/etc. the BOI items for recorded reasons, the contractor shall be liable to handover the materials in good usable condition to BHEL Stores. Further, if the contractor denies to/doesn't handover the materials on the instruction of BHEL-In Charge, payment made against such supplies shall be recovered from the contractor.</p> |

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## Chapter – II: SCOPE OF WORKS

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|               | The decision of Engineer-In-Charge Shall be final and Binding to the contractor.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>2.5.18</b> | <b>Reconciliation of Supply:</b><br>The final quantities of BOI materials supplied shall be reconciled upon the final execution of the total scope of work. The measurement against supply portion shall be reconciled after final execution of total work and the actual executed quantities as per BOQ items shall be considered for final measurement for recording in measurement book.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <b>2.6</b>    | <b>Tentative-Technical Staff Requirement:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>2.6.1</b>  | <ul style="list-style-type: none"> <li>• <b>Project Manager</b> – 01 Head with 15 Years' experience in Industrial Foundation, Building, Chimney/NDCT/Tall Structures &amp; Power Plant Civil &amp; Architectural Works etc.</li> <li>• <b>Asst. Project Managers</b> – 01 Heads with 10 Years' experience in Industrial Foundation, Building &amp; Power Plant Civil &amp; Architectural Works</li> <li>• Experienced Civil Engineers – 02 heads</li> <li>• Experienced Foreman / Supervisors – 02 heads</li> <li>• Planning &amp; Billing Engineers – 01 head</li> <li>• Stores, Gate Pass – 02 head</li> <li>• Accounts &amp; Administration – 01 head</li> <li>• Quality Control Engineer – 02 head</li> <li>• Safety Engineer – As per HSE Plan</li> <li>• Surveyor – 01 head capable to handle total station</li> <li>• Operator, Licensed Electrician, Mechanic - As per requirement</li> <li>• Experienced Carpenters &amp; Helpers – As per requirement</li> <li>• Experienced Bar Benders &amp; Helpers – As per requirement</li> <li>• Security Guards (Round the Clock) – As per requirement.</li> </ul> <p><b>Note: Above manpower requirement is tentative only. Contractor shall augment manpower to meet the project schedule/ milestones. Deployment of manpower shall be progressive to meet the project schedule.</b></p> |
| <b>2.6.2</b>  | Deputation of above man-power shall be jointly decided at site in line with construction Schedule.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>2.6.3</b>  | Engineer/ supervisor for other functions like store & purchase, material management, finance, administration etc. are to be provided as per site requirement and not considered in above list.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |

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## Chapter – II: SCOPE OF WORKS

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| 2.6.4 | 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.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 2.6.5 | 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.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 2.7   | <b>Laptop / Computer and Printer for exclusive use of BHEL:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| 2.7.1 | The bidder will have to provide <b>One (01) No.</b> of Laptops (X-86 Architecture Based, 64-Bit Supported, Microprocessor with minimum 8 cores, On-board Graphics feature compatible with supplied OS, Minimum 8 GB RAM 2666 MHZ SDRAM upgradeable to 16 GB, 512 GB SSD M.2 Hard Drive or higher, 13" - 14" (both included) high definition anti-glare LED back lit Screen, OEM USB Optical Travel Mouse, Integrated High definition audio with integrated speakers and volume control (Hardware/Software). Single audio jack (single pin) for connecting ear phones and mic, Built-In HD Webcam with Built-In Microphone, integrated 100/1000 Mbps port, Integrated Wi-Fi 6, supporting industry standard IEEE 802.11ax + Bluetooth 5.0 or higher, Minimum 2xUSB 3.1 Ports, 1xType C, Stereo headphone/ microphone combo jack, 1 x HDMI Port. 1 x RJ – 45, Minimum 3-cell battery capable of providing 6 hours or more backup in standard business environment, ACPI Compliant, OEM AC Adaptor suitable for 230V supply, Should come pre-installed with Windows 11 Professional Edition or latest version with 64bit latest service pack, OEM carry bag to be supplied with OS Certification from Microsoft and required software like MS Office 2010 Professional, AutoCAD 2011, ADOBE PDF CREATOR (version 8.0) with one laser jet printer compatible for A4 and A3 size printing with power backup at places, as per instruction of BHEL. |
| 2.7.2 | These laptops/ printers shall remain contractor’s property/ownership for all legal/technical purposes. However, contractor will be allowed to take out the same after completion of the site works. The computer/printer shall remain at BHEL offices during the contract period/ extended period (if any).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| 2.7.3 | This facility has to be provided as directed by BHEL till completion of site works or as decided by BHEL. If contractor fails to provide computer/ printer as per requirement, for a continuous period of fifteen days or more, BHEL shall have the right to purchase it on behalf of contractor and recover the expenses incurred from the dues payable to contractor. Recoveries shall be actual expenses incurred plus 5% overheads.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 2.8   | <b>Field Quality Assurance:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| 2.8.1 | The contractor shall be responsible for day-to-day quality checks for civil, structural and architectural works including concrete and other building materials in line with approved                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |

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## Chapter – II: SCOPE OF WORKS

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|       | Field Quality Plan (FQP) and Manufacturing Quality Plan (MQP) during the progress of work. All quality records and log sheets shall be maintained as per the requirement of BHEL/CUSTOMER and as per FQP/MQP approved by BHEL/CUSTOMER.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| 2.8.2 | <p><b>Setting Up of Laboratory Works:</b> The contractor shall set up laboratory in the close vicinity of the work site as per required field QA &amp; QC laboratory set up and as the directions of engineer-in-charge. The laboratory shall be equipped with latest testing equipment in sufficient number to carry out all the tests as required under a contract. The contractor should ensure that the equipment is available well in advance of starting of the work to avoid stoppage of work on this account. All the tests shall be carried out by the contractor in the presence of the Engineer's representative and a joint record of all observations and results thereof shall be maintained, and available with the Engineer. <b>Bidder shall tie up only with BHEL / Customer approved third party Lab for advance testing which are not feasible at site laboratory set-up.</b></p> <p>The laboratory set-up should consist of one AC lab (Approx. size 4.5mtr x 6mtr) for temperature and humidity control as required during testing of cement and other materials and one non-AC lab (Approx. Size 4.5 mtrx4.5 mtr.) in the field to carry out all relevant tests. Laboratory equipment as per requirement and as per Customer specification to be arranged by the contractor within quoted rate for conducting day-to-day tests. The contractor may tie up with approved/registered inspection agencies for setting up test lab at site as described above.</p> |
| 2.8.3 | <p><b>Minimum Testing Facilities to be arranged by contractor at site are as under:</b></p> <p><b>A. Soil Works:</b></p> <p>A.1 Facilities for HDD<br/>A.2 Field Compaction Test (Core Cutter / Sand Replacement Method).<br/>A.3 Atterberg Limit Test of Soil.<br/>A.4 Grain Size Distribution Test.</p> <p><b>B. Road Works:</b></p> <p>B.1 Facilities for mechanical strength of aggregates.<br/>B.1.1 Impact and Abrasion Value.<br/>B.1.2 Crushing Value.<br/>B.1.3 Water Absorption</p> <p><b>C. Concreting Works:</b></p> <p>C.1 Facilities for sieve Analysis for both fine and coarse aggregates.<br/>C.2 Facilities for workability test of concrete by Slump cone / BV.<br/>C.3 Facilities for Cube Strength.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| 2.8.4 | The Contractor shall get mix design approved from NCCBM / IITs / NITs / other reputed laboratories as approved by CUSTOMER/BHEL. Contractor has to ensure adding of high grade PCE based admixture to minimize the cement content in line with ASTM C 494 as advised by BHEL time to time without any additional cost.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter – II: SCOPE OF WORKS

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|         | The design mix shall be made as per IS 456/10262 latest revision and specification using the cement as per technical specification and advance action should be taken by the contractor for Mix design approval using the locally available coarse & fine aggregates (from approved source), before commencement of the concreting works. The contractor shall get the design mix proportions approved by BHEL/BHEL's Customer/Consultant. The design mix proportion shall be used for concreting at this project.                                                                                                                           |
| 2.8.5   | In case of change of brand of cement in a particular design mix, contractor has to re-design the concrete mix with new brand of cement before actual usage at site, cost incurred will be borne by contractor.                                                                                                                                                                                                                                                                                                                                                                                                                               |
| 2.8.6   | The following specifications of PCE-type high performance super plasticizer shall be used for concrete works as per BOQ item.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 2.8.6.1 | <p>High performance super plasticizer PCE-based water reducing admixture of Type-G/F as per ASTM C-494 of approved make FOSROC/SIKA/BASF or Equivalent having minimum water reduction capability of 30%.</p> <p>The performance compliance of the Super-plasticizer should be ensured based on the following tests:</p> <ul style="list-style-type: none"> <li>a) Marsh cone test for optimum dosage of admixture with specific brand of cement.</li> <li>b) Slump retention test of concrete.</li> <li>c) Water reduction capability test by doing trial mix.</li> <li>d) Rheological properties of fresh concrete on trial mix.</li> </ul> |
| 2.8.7   | In case ambient temperature is greater than 32 Degree Celsius, Placement temperature should be controlled with necessary temperature correction of concrete by introducing Chiller Plant along with Batching Plant ( <b>Note: -Contractor may make alternative arrangement for temperature control of fresh concrete.</b> )                                                                                                                                                                                                                                                                                                                  |
| 2.8.8   | Before commencement of work, Contractor has to satisfy/ ensure the design mix proportions through conducting trial mix. Contractor shall not be absolved from the responsibility of quality of concrete works as per relevant specification, standard and to ensure satisfactory performance as per terms and conditions of contract. Any issue raised regarding design mix after successful completion of trial mix shall not be entertained and contractor shall not be entitled for any cost or damages.                                                                                                                                  |
| 2.9     | <b>GENERAL NOTES FOR ELECTRICAL WORKS: -</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| 2.9.1   | A lighting and power panel each shall be located at grade level and at other in between levels as required. All distribution boards, aviation lighting controls, etc. shall be located at grade level only. At each platform, 1 No. 63A, 415V welding receptacle and 1 No. 20A, 240V receptacle shall be provided and shall be fed from power panel. Wiring installation for lighting fixture shall be of PVC insulated copper/aluminium wires through galvanised steel conduits.                                                                                                                                                            |

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter – II: SCOPE OF WORKS

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| 2.9.2  | Aviations obstruction lighting system shall conform to the requirements of the latest rules and regulations of the International Civil Aviation Organisation (ICAO), National Airports Authority (NAA) and Directorate of Air Routes and Aerodromes (DARA). The type of aviation obstruction lighting system shall be of high intensity aviation obstruction lights having an effective intensity of 4000 to 2,00,000 cd depending upon back ground illuminance. The aviation obstruction lighting system shall be of type FTB 205 and FTC 140 of Flash Technology Corporation of USA or equivalent. A minimum of three levels will be provided with aviation obstruction lights and there will be four light units per level. The lowest level should not be lower than 70 meters above the ground and vertical spacing of the intermediate levels could vary between 70 and 105 meters. Aviation obstruction lighting shall be complete with lights, photo cell, controller, special cables, etc. The system shall also provide automatic sensing and display of system status and aviation lamp failure detection |
| 2.9.3  | A temporary aviation obstruction lighting system shall be provided during construction of the chimney.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| 2.9.4  | Cables from distribution board to lighting panels/power panels/receptacles shall be 1100V grade, XLPE insulated armoured aluminium conductor FRLS PVC sheathed with a minimum size of 4 sq.mm. cables shall be laid on galvanised sheet steel cable trays. Cables shall be terminated using double compression type cable glands and solderless crimping type tinned copper cable lugs.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| 2.9.5  | A temporary lightning protection system shall be provided during construction of the chimney till a permanent lightning protection system is installed. In no case reinforcement bars of Shell should be used as earthing Down Conductors.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 2.9.6  | Communication system comprising of telephone socket at every internal platform level and at grade level, necessary wiring installation, a telephone hand set, junction boxes etc. shall also be provided.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| 2.9.7  | 415V, normal and emergency AC power supply for chimney shall be derived from main plant power supply system. Emergency supply shall feed 20% of platform lighting, 50% of staircase lighting, aviation obstruction lighting and elevator load. All other loads shall be connected on normal power supply.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| 2.9.8  | Ambient temperature for design of all equipment shall be considered as 55 deg. C which is likely to be encountered inside the chimney.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| 2.9.9  | Schedule of Equipment has been indicated for reference only. All electrical items shall be supplied on as required basis.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| 2.9.10 | Make of Aviation Light shall be subject to BHEL / end customer approval.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter – II: SCOPE OF WORKS

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| 2.9.7  | <b>EARTHING SYSTEM:</b> Earth grid system for chimney shall consist of horizontal conductors and vertical conductors. Horizontal conductor shall be of 40mm dia mild steel rod buried at a depth of 1 metre all around the chimney. Vertical rods shall be of 40 mm dia, 3-metre-long mild steel driven deep into the ground and also connecting to horizontal conductor at 20 metre intervals. The chimney earth grid system shall be interconnected with main plant earth grid at minimum 2 points, through bolted removable link and earth pits. Steel structures, metallic pipes etc. shall also be connected to earthing system. Connections between earthing conductor and equipment shall be of bolted type only. Earthing conductors along their run-on walls shall be supported by cleating at 1 metre interval. Clamps and hardware shall be of compatible material. Metallic enclosures of all electrical equipment shall be earthed by two separate and distinct connections to earth grid system. The earth connections shall consist of galvanized steel strip/rod/wire, sized adequately to carry the earth fault current of the system. Two nos. main earthing conductor shall be run inside all along chimney height. Electrical equipment at every platform shall be earthed with this conductor. Cable armour shall be bonded to earthing system at both ends of the circuit. The earthing conductors and accessories located at top 12m level shall have lead cover of minimum 2mm thickness. The accessories like nuts, bolts, dash fasteners, round clamps, washers etc. to be used for top 12m level shall be made of stainless steel. The minimum size of earthing conductor shall not be less than 14 SWG G.S wire. Earthing conductor shall also be run along with cable ways / each conduit run. |
| 2.9.8  | A temporary lightning protection system shall be provided during construction of the chimney till a permanent lightning protection system is installed. In no case reinforcement bars of Shell should be used as earthing Down Conductors.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| 2.9.10 | Communication system comprising of telephone socket at every internal platform level and at grade level, necessary wiring installation, a telephone hand set, junction boxes etc. shall also be provided.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| 2.9.11 | 415V, normal and emergency AC power supply for chimney shall be derived from main plant power supply system. Emergency supply shall feed 20% of platform lighting, 50% of staircase lighting, aviation obstruction lighting and elevator load. All other loads shall be connected on normal power supply.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| 2.9.12 | Ambient temperature for design of all equipment shall be considered as 55 deg. C which is likely to be encountered inside the chimney.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 2.9.13 | Schedule of Equipment has been indicated for reference only. All electrical items shall be supplied on as required basis.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| 2.10   | <b>HEIRARCHY:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter – II: SCOPE OF WORKS

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| 2.10.1 | <p>In case of any conflict/ deviations amongst various documents, the order of precedence shall be as follows:</p> <ol style="list-style-type: none"><li>1. Items Description in BOQ Cum Rate Schedule</li><li>2. Technical Conditions of Contract (TCC)</li><li>3. Technical Specifications for Customer (Section-C)</li><li>4. BHEL's Standard Specification (Section-D)</li></ol> |
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# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter – III: FACILITIES IN THE SCOPE OF CONTRACTOR/BHEL (SCOPE MATRIX)

| 3.0    | <i>FACILITIES IN THE SCOPE OF CONTRACTOR/BHEL (SCOPE MATRIX)</i>                                               |       |        |                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|--------|----------------------------------------------------------------------------------------------------------------|-------|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Sl. No | Description<br><br>PART I                                                                                      | Scope |        | Remarks                                                                                                                                                                                                                                                                                                                                                                                                                                |
|        |                                                                                                                | BHEL  | Bidder |                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| 3.1    | Establishment:                                                                                                 |       |        |                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| 3.1.1  | For Construction Purpose:                                                                                      |       |        |                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| a      | Open space for office                                                                                          | Yes   |        | BHEL shall take the land on lease outside plant boundary for development of labour colony and contractor's establishments etc.                                                                                                                                                                                                                                                                                                         |
| b      | Open space for storage                                                                                         | Yes   |        | BHEL shall provide limited open space for contractor's office and storage and construction facilities i.e. Batching Plant, Fabrication Yard etc. as and where made available (within the plant premises) free of charge for this package. However, worker's accommodations sheds shall be allocated within the leased land premises outside the plant boundary on chargeable basis. For details please refer to clause no. 3.10 below. |
| c      | Construction of bidder's office, canteen and storage building including supply of materials and other services |       | Yes    |                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| d      | Bidder's all office equipment, office / store / canteen consumables                                            |       | Yes    |                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| e      | Canteen facilities for the bidder's staff, supervisors and engineers etc.                                      |       | Yes    |                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| f      | Firefighting equipment like buckets, extinguishers etc.                                                        |       | Yes    |                                                                                                                                                                                                                                                                                                                                                                                                                                        |

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter – III: FACILITIES IN THE SCOPE OF CONTRACTOR/BHEL (SCOPE MATRIX)

| 3.0    | <b>FACILITIES IN THE SCOPE OF CONTRACTOR/BHEL (SCOPE MATRIX)</b>         |       |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|--------|--------------------------------------------------------------------------|-------|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Sl. No | Description<br><br>PART I                                                | Scope |        | Remarks                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|        |                                                                          | BHEL  | Bidder |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| g      | Fencing of storage area, office, canteen etc. of the bidder              |       | Yes    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| h      | Development of land provided for office, storage, fabrication yard, etc. |       | Yes    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| 3.1.2  | <b>For living purpose of the bidder:</b>                                 |       |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| a      | Open space for labour colony                                             | Yes   | Yes    | <p>BHEL is developing labour colony for Yamuna Nagar Project, outside the plant boundary.</p> <p>01 Nos. Worker's accommodation shed along with kitchen shed having capacity of approx. 120 worker's accommodation (within the labour colony) shall be allocated to bidder on chargeable basis. For details please refer to clause no. 3.10 below.</p> <p>In case requirement of labour shed shall be more than 01 Nos., the Contractor has to make his own arrangements for land (outside the plant), accommodation, shelter and transportation of labours as per requirement.</p> |

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter – III: FACILITIES IN THE SCOPE OF CONTRACTOR/BHEL (SCOPE MATRIX)

| 3.0    | <i>FACILITIES IN THE SCOPE OF CONTRACTOR/BHEL (SCOPE MATRIX)</i>                      |       |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|--------|---------------------------------------------------------------------------------------|-------|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Sl. No | Description<br><br>PART I                                                             | Scope |        | Remarks                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|        |                                                                                       | BHEL  | Bidder |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| b      | Labour Colony with internal roads, sanitation, complying with statutory requirements  | Yes   |        | <p>For Yamuna Nagar Project Labour colony with internal roads, electrification, water distribution network, sanitation etc. shall be developed by BHEL outside the plant premises on leased land taken by BHEL.</p> <p>01 Nos. worker's accommodation shed along with Kitchen Shed shall be allocated to contractor on chargeable basis within the labour colony developed by BHEL.</p> <p>Further running and maintenance of worker's accommodation sheds and common facilities inside the labour colony will be in contractor's scope. For details please refer to clause no. 3.10 below.</p> |
| 3.2    | Electricity:                                                                          |       |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| 3.2.1  | Electricity for construction purposes (for Site/Project works only) 3 Phase 415/440 V |       |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |

## TECHNICAL CONDITIONS OF CONTRACT (TCC)

### Chapter – III: FACILITIES IN THE SCOPE OF CONTRACTOR/BHEL (SCOPE MATRIX)

| 3.0          | <b>FACILITIES IN THE SCOPE OF CONTRACTOR/BHEL (SCOPE MATRIX)</b>                                                               |       |        |                                                                                                                                                                                                                                                                                                                                                                                                               |
|--------------|--------------------------------------------------------------------------------------------------------------------------------|-------|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Sl. No       | Description<br><br><b>PART I</b>                                                                                               | Scope |        | Remarks                                                                                                                                                                                                                                                                                                                                                                                                       |
|              |                                                                                                                                | BHEL  | Bidder |                                                                                                                                                                                                                                                                                                                                                                                                               |
| a            | Single point source                                                                                                            | Yes   | Yes    | BHEL may provide electricity at single point source for construction works during execution stage immediately after mobilization on chargeable basis from the date of start of work.<br><br>However, in case of any delay in arrangement of construction power by BHEL, Contractor has to arrange construction power at his own cost including DG Sets to meet the power requirement with in the quote price. |
| b            | Further distribution for the work to be done which include supply of materials and execution                                   |       | Yes    | At contractor's own cost.                                                                                                                                                                                                                                                                                                                                                                                     |
| c            | Distribution of Electricity for the office, stores, canteen, of the contractor which include supply of materials and execution |       | Yes    | At contractor's own cost.                                                                                                                                                                                                                                                                                                                                                                                     |
| d            | Supply, installation and connection of energy meter including operation and maintenance                                        |       | Yes    | At contractor's own cost. Calibration certificate to be provided.                                                                                                                                                                                                                                                                                                                                             |
| e            | Duties and deposits including statutory clearances if applicable                                                               |       | Yes    | At contractor's own cost                                                                                                                                                                                                                                                                                                                                                                                      |
| f            | Demobilization of all the facilities after completion of works                                                                 |       | Yes    | At contractor's own cost                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>3.2.2</b> | <b>Electricity for office, stores, canteen etc. of the bidder</b>                                                              |       |        |                                                                                                                                                                                                                                                                                                                                                                                                               |
| a            | Single point source                                                                                                            | Yes   | Yes    | <b>Same as 3.2.1 (a) above.</b>                                                                                                                                                                                                                                                                                                                                                                               |
| b            | Further distribution including all materials, Energy Meter, Protection devices and its service                                 |       | Yes    | At contractor's own cost                                                                                                                                                                                                                                                                                                                                                                                      |

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter – III: FACILITIES IN THE SCOPE OF CONTRACTOR/BHEL (SCOPE MATRIX)

| 3.0    | <b>FACILITIES IN THE SCOPE OF CONTRACTOR/BHEL (SCOPE MATRIX)</b>                                               |       |        |                                                                                                                                                                                                                                                                                                                |
|--------|----------------------------------------------------------------------------------------------------------------|-------|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Sl. No | Description<br><br><b>PART I</b>                                                                               | Scope |        | Remarks                                                                                                                                                                                                                                                                                                        |
|        |                                                                                                                | BHEL  | Bidder |                                                                                                                                                                                                                                                                                                                |
| c      | Duties and deposits including statutory clearances if applicable                                               |       | Yes    | At contractor's own cost                                                                                                                                                                                                                                                                                       |
| 3.2.3  | <b>Electricity for living accommodation of the bidder's staff, engineers, supervisors, labour Hutment etc.</b> |       |        |                                                                                                                                                                                                                                                                                                                |
| a      | Single point source                                                                                            | Yes   | Yes    | <b>Same as 3.2.1 (a) above.</b>                                                                                                                                                                                                                                                                                |
| b      | Further distribution including all materials, Energy Meter, Protection devices and its service                 |       | Yes    | At contractor's own cost                                                                                                                                                                                                                                                                                       |
| c      | Payment/Duties and deposits including statutory clearances if applicable                                       |       | Yes    | At contractor's own cost                                                                                                                                                                                                                                                                                       |
| 3.3    | <b>Water Supply:</b>                                                                                           |       |        |                                                                                                                                                                                                                                                                                                                |
| 3.3.1  | <b>For construction purposes:</b>                                                                              |       |        |                                                                                                                                                                                                                                                                                                                |
| a      | Making the water available at single point                                                                     | Yes   |        | <p>Single Point Source for Construction Water within the plant premises shall be provided at a location as approved by Owner.</p> <p>Construction Water shall be provided on chargeable basis.</p> <p>Construction Water source for outside plant boundary shall be arranged by contractor at his own cost</p> |

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter – III: FACILITIES IN THE SCOPE OF CONTRACTOR/BHEL (SCOPE MATRIX)

| 3.0    | <i>FACILITIES IN THE SCOPE OF CONTRACTOR/BHEL (SCOPE MATRIX)</i>                                                                                              |       |        |                                                                                                                                                                                   |
|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Sl. No | Description<br><br>PART I                                                                                                                                     | Scope |        | Remarks                                                                                                                                                                           |
|        |                                                                                                                                                               | BHEL  | Bidder |                                                                                                                                                                                   |
| b      | Further distribution as per the requirement of work including supply of materials and execution.                                                              |       | Yes    | Contractor shall arrange construction water from single point source including all necessary piping, valves, water meter etc. shall be arranged by the contractor at his own cost |
| 3.3.2  | <b>Water supply for bidder's office, stores, canteen etc.</b>                                                                                                 |       |        | Contractor has to make his own arrangement at his own cost.                                                                                                                       |
| a      | Making the water available at single point                                                                                                                    |       | Yes    | At contractor's own cost                                                                                                                                                          |
| b      | Further distribution as per the requirement of work including supply of materials and execution                                                               |       | Yes    | At contractor's own cost                                                                                                                                                          |
| 3.3.3  | <b>Water supply for Living Purpose</b>                                                                                                                        |       |        | Contractor has to make his own arrangement at his own cost.                                                                                                                       |
| a      | Making the water available at single point                                                                                                                    |       | Yes    | At contractor's own cost                                                                                                                                                          |
| b      | Further distribution as per the requirement of work including supply of materials and execution                                                               |       | Yes    | At contractor's own cost                                                                                                                                                          |
| 3.4    | <b>Lighting</b>                                                                                                                                               |       |        |                                                                                                                                                                                   |
| a      | For construction work (supply of all the necessary materials)<br>1. At office/storage area<br>2. At the preassembly area<br>3. At the construction site /area |       | Yes    | At contractor's own cost                                                                                                                                                          |

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter – III: FACILITIES IN THE SCOPE OF CONTRACTOR/BHEL (SCOPE MATRIX)

| 3.0    | <b>FACILITIES IN THE SCOPE OF CONTRACTOR/BHEL (SCOPE MATRIX)</b>                                                                                                     |       |        |                                                                                  |
|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|--------|----------------------------------------------------------------------------------|
| Sl. No | Description<br><br><b>PART I</b>                                                                                                                                     | Scope |        | Remarks                                                                          |
|        |                                                                                                                                                                      | BHEL  | Bidder |                                                                                  |
| b      | For construction work (execution of the lighting work/ arrangements)<br>1. At office/storage area<br>2. At the preassembly area<br>3. At the construction site /area |       | Yes    | At contractor's own cost                                                         |
| c      | Providing the necessary consumables like bulbs, switches, etc. during the course of project work                                                                     |       | Yes    | At contractor's own cost                                                         |
| d      | Lighting for the living purposes of the bidder at the colony / quarters                                                                                              |       | Yes    | At contractor's own cost                                                         |
| 3.5    | <b>Communication facilities for site operations of the bidder</b>                                                                                                    |       |        |                                                                                  |
| a      | Téléphone, fax, internet, intranet, e-mail etc.                                                                                                                      |       | Yes    | At contractor's own cost                                                         |
| 3.6    | <b>Compressed air wherever required for the work</b>                                                                                                                 |       | Yes    | At contractor's own cost                                                         |
| 3.7    | <b>Demobilization of all the above facilities</b>                                                                                                                    |       | Yes    | At contractor's own cost                                                         |
| 3.8    | <b>Transportation</b>                                                                                                                                                |       |        |                                                                                  |
| a      | For site personnel of the bidder                                                                                                                                     |       | Yes    | At contractor's own cost                                                         |
| b      | For bidder's equipment and consumables (T&P, Consumables etc.)                                                                                                       |       | Yes    | At contractor's own cost                                                         |
| 3.9    | <b>Erection Facilities and Site Construction Management:</b>                                                                                                         |       |        |                                                                                  |
| 3.9.1  | Engineering works for construction:                                                                                                                                  |       |        |                                                                                  |
| a      | Providing the erection/constructions drawings for all the equipment covered under this scope                                                                         | Yes   |        |                                                                                  |
| b      | Drawings for construction methods                                                                                                                                    | Yes   | Yes    | In consultation with BHEL                                                        |
| c      | As-built drawings where ever deviations observed and executed and also based on the decisions taken at site                                                          |       | Yes    | Changes are to be marked in drawing & handed over to BHEL on completion of work. |

## TECHNICAL CONDITIONS OF CONTRACT (TCC)

### Chapter – III: FACILITIES IN THE SCOPE OF CONTRACTOR/BHEL (SCOPE MATRIX)

| <b>3.0</b>                                                              |                                                                                                                                                                                                                                          |              |               |                           |
|-------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|---------------|---------------------------|
| <b><i>FACILITIES IN THE SCOPE OF CONTRACTOR/BHEL (SCOPE MATRIX)</i></b> |                                                                                                                                                                                                                                          |              |               |                           |
| <b>Sl. No</b>                                                           | <b>Description</b>                                                                                                                                                                                                                       | <b>Scope</b> |               | <b>Remarks</b>            |
|                                                                         |                                                                                                                                                                                                                                          | <b>BHEL</b>  | <b>Bidder</b> |                           |
| d                                                                       | Shipping lists etc. for reference and planning the activities                                                                                                                                                                            |              |               | Not Applicable            |
| e                                                                       | Preparation of site construction / erection schedules and other input requirements as per Form-14.                                                                                                                                       | Yes          | Yes           | In consultation with BHEL |
| f                                                                       | Review of performance and revision of site construction / erection schedules in order to achieve the end dates and other commitments                                                                                                     | Yes          | Yes           | In consultation with BHEL |
| g                                                                       | Weekly construction / erection schedules based on Sl. No. e                                                                                                                                                                              |              | Yes           | In consultation with BHEL |
| h                                                                       | Daily work plan based on Sl. No. g                                                                                                                                                                                                       |              | Yes           | In consultation with BHEL |
| i                                                                       | Periodic visit of the senior official of the bidder to site to review the progress so that works is completed as per schedule. It is suggested this review by the senior official of the bidder should be done once in every two months. |              | Yes           |                           |
| j                                                                       | Preparation of preassembly bay                                                                                                                                                                                                           |              | Yes           |                           |
| k                                                                       | Laying of racks for gantry crane if provided by BHEL or brought by the contractor /bidder himself                                                                                                                                        |              | Yes           |                           |

|               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
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| <b>3.10</b>   | <b>Land/Open Space and Labour Colony:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>3.10.1</b> | <p>Land for contractor's establishment:</p> <p>Availability of land is very limited and the contractor has to plan and use the existing land 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 erection agencies.</p> <p>Land for labour colony is not available within the plant boundary. Therefore, BHEL is taking the land on lease basis within a distance of 03 Kms (Approx.) from the Plant Boundary. However, Land for laydown area for storage of equipment, fabrication yard (for site fabrication works including</p> |

## TECHNICAL CONDITIONS OF CONTRACT (TCC)

### Chapter – III: FACILITIES IN THE SCOPE OF CONTRACTOR/BHEL (SCOPE MATRIX)

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|                 | <p>Flue Cans fabrication), batching plant and other construction related activities shall be provided within the plant boundary.</p> <p>BHEL shall allocate such land (on as is where is basis) to the contractors for construction of their office, storage sheds, laydown area, setting up of Batching Plant, Fabrication Yard and other construction related activities within the plant premises.</p> <p><b>For this tender land shall be allocated to contractor for the following purposes:</b></p> <ol style="list-style-type: none"><li>Land for office, storage sheds, laydown area, setting up of Batching Plant, Fabrication Yard etc. within plant boundary free of charge on as is where is basis.</li><li>01 No. worker's shed (being constructed by BHEL within leased land premises) shall be allocated to the contractor. Land required for construction of 01 No. worker's shed is 0.4 Acre (including land used in common facilities of labour colony). Hence, 0.4 Acre land is considered for allocation to contractor with respect to worker's accommodation sheds within leased land premises on chargeable basis.</li></ol> <p>Location of Land and worker's sheds to be allocated to contractor within the leased land premises shall be decided by BHEL engineer and same shall be binding on the contractor.</p> <p><b>Note:</b></p> <ol style="list-style-type: none"><li>In case of additional land requirement, same shall be arranged by contractor at their cost. However, if additional land (within leased land premises) is available with BHEL, same may also be allocated to contractor on chargeable basis as per recovery rates given below. Allocation of additional land shall be at the discretion of BHEL.</li></ol> |
| <b>3.10.1.1</b> | <p><b><u>RECOVERY RATES FOR THE LAND ALLOCATED TO CONTRACTOR AND MODE OF RECOVERY FROM CONTRACTOR'S RA BILLS:</u></b></p> <p><b>The Land shall be allotted to the contractor on chargeable basis as per following recovery rates.</b></p> <ol style="list-style-type: none"><li>Recovery rate for allocation of Leased Land to contractor for development of worker's shed shall be <b>Rs. 31,000 per acre per month + applicable GST</b>. Recovery shall be made from contractor's monthly RA Bills on pro-rata basis.</li><li>Recovery rate with respect to cost incurred by BHEL for Development of leased land shall be <b>@ Rs. 21,96,000 /- per acre + applicable GST</b>. Total recovery amount for development of leased land allocated to contractor @ recovery rate mentioned above (i.e. Land allocated to contractor * recovery rate) shall be recovered from contractor's monthly RA bills @ <b>'25% of each RA bill amount'</b> up to recovery of complete amount. However, total recoverable amount shall be recovered maximum up to 10th RA Bill.</li></ol>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>3.10.1.2</b> | <p>Land shall be allocated to contractor till completion period of this contract and subsequent extensions (if any) and recovery of the land charges shall be done accordingly.</p> <p>In case the Land is not required for the complete contract period / extended period (if any), contractor may hand over the such unutilized land to BHEL <b>cleared from all constructions, encumbrances, debris etc.</b> in consultation with BHEL. <b>In such case, further recovery of the Land handed over by the contractor (to the satisfaction of BHEL) shall not be made.</b></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |

## TECHNICAL CONDITIONS OF CONTRACT (TCC)

### Chapter – III: FACILITIES IN THE SCOPE OF CONTRACTOR/BHEL (SCOPE MATRIX)

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|                 | <b>However, recovery shall be made from the contractor till the time land is cleared from all constructions and handed over satisfactorily to BHEL.</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>3.10.1.3</b> | It is the responsibility of the contractor to construct office, sheds, fabrication yard, establish batching plant, micro levelling and grading of the land, roads and drains (internal, approach), make necessary drainage arrangements, provide all utilities and dismantle and clear the site after completion of work or as and when required, as a part of his scope of work.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>3.10.1.4</b> | It is contractor's responsibility to provide watch and ward, security (including fencing/ boundary wall) for their equipment, material, stores etc. kept inside the land allotted for the scope of work under this tender. BHEL shall not be responsible for any theft / loss of contractor's properties from within the allotted land to contractor and no claim shall be entertained in this regard.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>3.10.1.5</b> | <b>It will be mandatory for the contractor to hand over the land, cleared from all constructions, encumbrances, debris etc. to BHEL and take a satisfactory handing over certificate from BHEL Engineer. In case of default by contractor and expenses (if any) incurred by BHEL for clearing the land provided to the contractor shall be recovered from the contractor with overheads @ 5%.</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>3.10.2</b>   | <p><b>Labour Colony / Worker's accommodation sheds:</b></p> <p>BHEL is developing the labour colony (outside plant boundary, within leased land premises, approx. 03 km from plant boundary) consisting of approx. 20 Nos. worker's accommodation sheds (each shed having capacity to accommodate approx. 120 persons) along with kitchen sheds, common medical center, bore well, service and drinking water arrangements, internal and peripheral roads &amp; drains, internal and external electrification, including water supply network, plumbing, sewage connections, sanitary work, metal beds with mattresses, wiring &amp; fittings, ceiling fans, illumination, painting, finishing work, almirahs / storage racks etc.</p> <p><b>Common Medical Centre inside Labour colony:</b> BHEL shall construct 01 No. Medical Centre well finished &amp; furnished, of approx. 160 sqm in the labour establishment area for workers. Payments for medical staffs such as doctors, nurse, ambulance services, consumables, emergency medical equipment/first aid instruments/devices &amp; running medicines shall be made by the contractor/s and same shall be shared amongst the availing agencies on pro-rata basis (on the basis of shed allocated to the contractor/s).</p> <p>Out of the total worker's accommodation shed developed by BHEL within labour colony as indicated above, <b>01 Nos. worker's shed (capacity of approx. 120 persons)</b> shall be allocated to contractor for this tender works on chargeable basis. Contractor shall intimate mobilization plan for Workers and BHEL shall allocate worker's accommodation shed accordingly.</p> <p>Contractor shall make his own arrangements and shall be liable for the following with respect to worker's accommodations:</p> <ol style="list-style-type: none"> <li>i.) To provide necessary furniture (for dining area), cooking gas, utensils, fire extinguishers etc.</li> <li>ii.) Providing and maintaining facilities for safety, welfare, drinking water and sanitation, hygiene, biennial health check-up etc. for construction workers at their workplaces as well as at labour &amp; staff colonies.</li> </ol> |

## TECHNICAL CONDITIONS OF CONTRACT (TCC)

### Chapter – III: FACILITIES IN THE SCOPE OF CONTRACTOR/BHEL (SCOPE MATRIX)

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|          | <ul style="list-style-type: none"><li>iii.) Electricity consumption charges for the allocated worker's sheds shall be recovered from contractor's RA Bills as per prevailing DISCOM rates (along with fixed charges). Necessary metering arrangements shall have to be ensured by contractors.</li><li>iv.) Electricity consumption charges for the common area in labour colony shall be borne by BHEL.</li><li>v.) Maintenance, regular housekeeping and other arrangements to keep the allocated worker's accommodation sheds in neat and clean condition.</li><li>vi.) Common expenses related to monthly maintenance, repair of common areas, security guards, electricity, water, cleanliness, etc. shall be shared among all agencies availing the facilities in the labour/ workers colony on a pro-rata basis (on the basis of shed allocated to the contractor/s).</li><li>vii.) BHEL shall regularly inspect the conditions of labour colony and medical facilities arranged by contractor/s for the medical center and discrepancies if any informed by BHEL shall be rectified by contractor promptly. In case of non-compliance BHEL may get the rectification done through other means and recover the actual cost incurred along with 5% overheads from contractor's RA Bills.</li><li>viii.) Contractor/s shall work in good faith so as to provide good medical facilities for workers engaged by them. However, BHEL shall not be a party for resolution of any kind of disputes amongst the contractors or between workers and contractors.</li></ul>                                                                                                                                                                         |
| 3.10.2.1 | <p><b><u>RECOVERY RATES FOR WORKER'S SHEDS ALLOCATED TO CONTRACTOR AND MODE OF RECOVERY FROM CONTRACTOR'S RA BILLS:</u></b></p> <p><b>The worker's accommodation shed/s shall be allocated to the contractor on chargeable basis as per following recovery rates:</b></p> <p>Recovery rate towards allocation of worker's shed/s to contractor within the labour colony shall be <b>Rs. 97,74,000/- for each shed + applicable GST</b>. Total recovery amount for allocated worker's sheds @ recovery rate mentioned above (i.e. worker's sheds allocated to contractor * recovery rate) shall be recovered from contractor's monthly RA bills @ <b>'25% of each RA bill amount'</b> up to recovery of complete amount. However, total recoverable amount shall be recovered maximum up to 10<sup>th</sup> RA Bill.</p> <p><b>Note:</b></p> <ul style="list-style-type: none"><li>1. On completion of recovery of complete amount, ownership of worker's shed/s shall be transferred to contractor once the complete amount is recovered.</li><li>2. Running and Maintenance charges shall be borne by the contractors to whom the shed is allocated.</li><li>3. The contractor shall ensure dismantling / disposal of labour shed (along with sub-structure i.e. floor, foundations etc.) within reasonable time of completion of work or as directed by BHEL Engineer in Charge and no extra payment shall be made in this regard.</li><li>4. Dismantling / disposal of common facilities in labour colony (i.e. roads, drains, RO Systems, Bore well, external illuminations etc.) and common medical center shall be in the scope of respective contractor availing the facilities and same shall be decided by BHEL Site Engineer.</li></ul> |

## TECHNICAL CONDITIONS OF CONTRACT (TCC)

### Chapter – III: FACILITIES IN THE SCOPE OF CONTRACTOR/BHEL (SCOPE MATRIX)

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| <b>3.10.2.2</b> | In the event of delay in providing the worker's accommodation sheds by BHEL / BHEL is unable to provide the worker's accommodation sheds / additional requirement, the contractor will be responsible for arranging suitable labour accommodation in compliance with statutory norms, stipulated guidelines and drawings. Any additional facilities required for the scope of work must be arranged by the contractor at their own cost.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>3.10.2.3</b> | Contractor shall ensure maintenance of workmen/labour colony in line with BHEL' standard Guidelines ( <b>As per Annexure A- Standard Guidelines for Worker's Accommodation / Establishments at BHEL-Project Sites</b> ).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>3.11</b>     | Contractor shall maintain one centralized store cum bar bending yard at his own cost. Hard surfacing of this yard and all-around drains shall be carried out by the contractor at his own cost within the quoted rate. The construction of cement storage sheds for unloading of cement bags, stacking properly in the storage sheds shall be carried out by the contractor at his own cost within the quoted rate.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>3.12</b>     | <p><b>Installation of necessary amenities- and temporary infrastructure for construction activities at Project site locations.</b></p> <p>Following are the minimum amenities to be provided by the contractor within the quoted price including removal/disposal of the same in environment friendly manner after its intended use/completion of scope of work:</p> <ul style="list-style-type: none"> <li>i. Labour rest sheds near work spot.</li> <li>ii. Canteen facility creation.</li> <li>iii. Drinking water facility.</li> <li>iv. Labour Bio toilets near work spot in sufficient nos. with regular cleaning &amp; maintenance arrangement. Exclusive arrangement of Bio toilets to be made at site for ladies.</li> <li>v. Labour colony should have all hygienic condition, dining hall, toilets, proper sewerage system, good drinking water arrangements.</li> <li>vi. Recreational facilities, etc.</li> </ul> |
| <b>3.13</b>     | <b>Construction Power:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>3.13.1</b>   | <p>Construction power whenever made available, shall be provided to the contractor on chargeable basis at one single point (inside and outside plant premises). However, based on request of Contractor and requirement of project, BHEL Site in charge, at his discretion, may provide construction power at multiple point, if feasible. If, BHEL provides electricity at more than one point, it will be responsibility of the contractor to provide all the support necessary for enabling BHEL for extending such provision to contractor.</p> <p>Till such arrangements are done / made available, the contractor should make his own arrangement for alternative source of power supply through power connection / deployment of adequate number of DG sets/usage of diesel operated machines, at their cost. No separate payment shall be applicable on account of the same.</p>                                       |

## TECHNICAL CONDITIONS OF CONTRACT (TCC)

### Chapter – III: FACILITIES IN THE SCOPE OF CONTRACTOR/BHEL (SCOPE MATRIX)

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| <b>3.13.2</b>  | Contractor shall make necessary arrangements for onward distribution of construction power taking due care of surrounding construction activities like movement of cranes & vehicles, civil work, fabrication/construction/assembly/ erection etc. and safety of personnel. It may become necessary to relocate some of the installations to facilitate work by other agencies or by him.                                                                                                                                                                                                                          |
| <b>3.13.3</b>  | Contractor shall deploy and install required cables, fuses, distribution boards, switchboards, bus bars, earthing arrangements, protection devices and any other installation as specified by statutory authority/act.                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>3.13.4</b>  | <p>Distribution of supply shall be done by the contractor using underground cables. The contractor shall be responsible to provide complete LT distribution with Fuseless system including the supply of all materials like cables, necessary isolators/LCB, Switch boards, industrial receptacles/sockets, pipes, etc. observing the safety rules laid down by electrical authority of the State / BHEL / their customer with appropriate statutory requirements.</p> <p>All cables being used for construction power shall be armoured only. Buried cable shall be suitably identified by the route markers.</p> |
| <b>3.13.5</b>  | It shall be the responsibility of Contractor to provide, maintain the complete installation on the load side of the supply with due regard to the safety requirements at site. All cabling and installations shall comply with the appropriate statutory requirements in all respects. The installation and maintenance of this shall be done by licensed and experienced electrician.                                                                                                                                                                                                                             |
| <b>3.13.6</b>  | The contractor shall also take the approval/ permission of statutory authorities for his DG set installation. The Contractor has to make his own arrangement for the same as required to carry out the job under the scope of work within the quoted rate. Nothing extra shall be paid on this account of DG set up and running for 'construction, office maintenance etc.'                                                                                                                                                                                                                                        |
| <b>3.13.7</b>  | Contractor himself shall be responsible for any loss or damage to their equipment as a result of variations in voltage or frequency or interruptions in power supply.                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>3.13.8</b>  | The contractor will have to Procure & install General mobile illumination system during construction right from start of his work. This system will include temporary pole lighting, portable lighting towers with DG back up, within the quoted price. The illumination should be such that minimum illumination requirement as specified by Indian standards for general illumination is maintained.                                                                                                                                                                                                             |
| <b>3.13.9</b>  | Further, as there are bound to be interruptions in regular power supply, power cut/load shedding as in any construction sites, contractor should make his own arrangement for alternative source of power supply through deployment of adequate number of DG sets/usage of diesel operated machines, at their cost during the power breakdown /failure to get urgent and important work to go on without interruptions. No separate payment shall be made for any contingency arrangement made by contractor, due to delay / failure in providing electricity.                                                     |
| <b>3.13.10</b> | The Construction Power consumed by the contractor shall be charged based on prevalent rate of DISCOM (UHBVN / HVPN). Recovery of Construction Power shall be made from the monthly RA bills of the contractor.                                                                                                                                                                                                                                                                                                                                                                                                     |

## TECHNICAL CONDITIONS OF CONTRACT (TCC)

### Chapter – III: FACILITIES IN THE SCOPE OF CONTRACTOR/BHEL (SCOPE MATRIX)

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| 3.13.11 | The contractor has to provide necessary meter for measuring the power consumption. In case of any dispute, BHEL engineer's decision shall be final and binding on contractor. The meter used by the contractors shall be duly calibrated.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 3.13.12 | Necessary "Capacitor Banks" to improve the Power factor to a minimum of 0.9 shall be provided by the contractor at his cost. On account of the contractor's failure in maintaining the power factor as required by customer, penalty if any, levied by customer/ State Electricity Distribution Board will be recovered from contractor's bills.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| 3.13.13 | Contractor has to make their own arrangements for electricity requirement for staff accommodations / other establishments outside the plant premises / BHEL's leased land premises at his own cost within quoted price.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| 3.14    | <b>Construction water:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| 3.14.1  | <b>Within the Plant Premises:</b><br><br>Construction Water (Raw water) required for construction works within the plant premises shall be provided by BHEL / Owner at single point source on chargeable basis. Tentative location of construction water (single point source) is near the plant boundary of existing HPGCL plant (approx. distance 500 m from the work area). Gate valve and metering arrangement is required to be installed by the contractor for their own use.<br><br><b>Further distribution of water from single point source including required pumps &amp; accessories, pipes, water meter for drawing water from underground storage tank / single point source to construction area shall be arranged by the contractor at their own cost to ensure supply of water without interruptions. No extra payment shall be made under this account.</b><br><br><b>Note: Construction Water shall be provided at the same rate as charged by customer from BHEL.</b> |
| 3.14.2  | The Contractor should make arrangements for storage of sufficient quantity of water required for work. The agency should also construct sumps (if required) of suitable size for storage of construction water as per their requirement for use for execution and construction purposes.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| 3.14.3  | Contractor to satisfy himself that the water drawn/ arranged by him is fit for construction/ consumption and adequately treat such water at his cost when it is not found fit for the said purposes.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| 3.14.4  | In case of non-availability of water, the contractor shall make his own arrangements of water suitable for construction purpose to have uninterrupted work. No separate payment shall be made for any contingency arrangement made by contractor.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| 3.14.5  | <b>CONTRACTOR'S OBLIGATION ON COMPLETION</b><br><br>On completion of work or as and when required by BHEL, all the temporary buildings, structures, pipe lines, cables etc. shall be dismantled and levelled and debris shall be removed, as per instructions of BHEL, by the contractor at his cost. In the event of his failure to do so, the Engineer                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |

## TECHNICAL CONDITIONS OF CONTRACT (TCC)

### Chapter – III: FACILITIES IN THE SCOPE OF CONTRACTOR/BHEL (SCOPE MATRIX)

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|               | will get it done and expenses incurred shall be recovered from the contractor along with overheads @ 5%. The decision of BHEL Engineer in this regard shall be final.                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>3.15</b>   | <b>RECORDS TO BE MAINTAINED AT SITE</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>3.15.1</b> | Record of Quantity of free/Chargeable items issued by BHEL must be maintained during contract execution. Also, reconciliation statement to be prepared at regular intervals.                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>3.15.2</b> | <p>The below mentioned Records/ Log-books/ Registers applicable to be maintained.</p> <ul style="list-style-type: none"><li>i. Hindrance Register</li><li>ii. Site Order Book.</li><li>iii. Test Check of measurements.</li><li>iv. Steel and Cement Supply and Consumption Daily Register</li><li>v. Records of Test reports of Field tests.</li><li>vi. Records of manufacture's test certificates.</li><li>vii. Records of disposal of soil/ rock generated during and after the work completion.</li><li>viii. Records of disposal of scraps generated during and after the work completion.</li><li>ix. List of T&amp;Ps and MMEs.</li></ul> |

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter – IV: T&PS AND MMES TO BE DEPLOYED BY CONTRACTOR

### 4.0 Tools and Plants:

Nos. of T&Ps to be deployed at site shall be decided w.r.t. monthly plan and review format (F-14) based on site requirement. Below given Nos. are tentative for planning purposes by the bidder.

| 4.1    | For Civil Works                                                                                                                                | Tentative Requirement                            |
|--------|------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------|
| 4.1.1  | Hydraulic Excavator /Poclain                                                                                                                   | As per requirement                               |
| 4.1.2  | Dumper                                                                                                                                         | As per requirement                               |
| 4.1.3  | Pneumatic wagon drills with compressor for controlled blasting.                                                                                | As per requirement                               |
| 4.1.4  | Portable magazine                                                                                                                              | As per requirement                               |
| 4.1.5  | Dozer                                                                                                                                          | As per requirement                               |
| 4.1.6  | Trailer (20MT Capacity)                                                                                                                        | 02 Nos. (Incl Flue Can Shifting)                 |
| 4.1.7  | Automatic concrete batching plant with printing facility (30 Cum/Hr.) with silos of min. storage capacity of 300 MT)                           | 01 Nos.                                          |
| 4.1.8  | Chiller Plant of adequate capacity for Temperature controlled concrete.                                                                        | As per requirement                               |
| 4.1.9  | Cement Storage Sheds of Min. 300 MT / 6000 Bags Capacity (If required)                                                                         | 01 Nos.                                          |
| 4.1.10 | Multi stage high lift water pump (for curing) (lifting height 150 meters). One shall be working type and other shall be stand by.              | 02 Nos.                                          |
| 4.1.11 | Strand Jacks of required capacity (includes 4 nos. standby Jacks) with 01 nos. power Pack including strand Rope of adequate thickness & length | 01 Set                                           |
| 4.1.12 | Slip Form Shuttering System & Necessary Spare Parts                                                                                            | 01 Set                                           |
| 4.1.13 | Concrete Transit Mixer                                                                                                                         | 04 Nos. (However, for large pours, bidder has to |

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter – IV: T&PS AND MMES TO BE DEPLOYED BY CONTRACTOR

|        |                                                                                       |                                                                     |
|--------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------|
|        |                                                                                       | arrange required nos. of Transit Mixers.)                           |
| 4.1.14 | Concrete Boom placer min. 35m long of required Capacity                               | 01 No.<br><b>(Requirement till erection of winch for concrete.)</b> |
| 4.1.15 | Concrete Pump (Capacity- Minimum 60 Cum/Hr.)                                          | As per requirement                                                  |
| 4.1.16 | Concrete Mixture Machine                                                              | As per requirement                                                  |
| 4.1.17 | Vibrators (electrical/diesel)                                                         | As per requirement                                                  |
| 4.1.18 | Reinforcement bending machine                                                         | As per requirement                                                  |
| 4.1.19 | Reinforcement cutting machine                                                         | As per requirement                                                  |
| 4.1.20 | JCB                                                                                   | 01 No                                                               |
| 4.1.21 | Farana crane (Required Capacity)<br>*Note- Hydra is not allowed at project site       | 01 No                                                               |
| 4.1.22 | Self-priming Dewatering pump of various capacity (Diesel/Electric) From 2 HP to 15 HP | As per requirement                                                  |
| 4.1.23 | Curing / dewatering pump – 1.5 / 2 HP                                                 | As per requirement                                                  |
| 4.1.24 | De-watering pump (diesel operated) – 20 HP & 30 HP                                    | As per requirement                                                  |
| 4.1.25 | Well Point De-Watering System                                                         | As per requirement                                                  |
| 4.1.26 | Hydraulic Excavator /Poclain with rock breaker arrangement                            | As per requirement                                                  |
| 4.1.27 | Pneumatic rock breaker with jack hammer                                               | As per requirement                                                  |
| 4.1.28 | 0.47 mm thick color coated GI sheet should be used along with Slipform shutter plate. | 01 sets (to be replaced if damaged during slipping)                 |
| 4.1.29 | MS Scaffolding Pipes.                                                                 | As per requirement                                                  |
| 4.1.30 | Motorized External Platform (Sky Climber)                                             | As per requirement                                                  |
| 4.1.31 | Tractor mounted grader/ loader                                                        | As per requirement                                                  |

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## Chapter – IV: T&PS AND MMES TO BE DEPLOYED BY CONTRACTOR

|            |                                                                                 |                            |
|------------|---------------------------------------------------------------------------------|----------------------------|
| 4.1.32     | Plate compactor                                                                 | As per requirement         |
| 4.1.33     | Earth Compactor / Mini Roller- 3MT Capacity                                     | 01 Nos.                    |
| 4.1.34     | Total Station                                                                   | 01 Nos.                    |
| 4.1.35     | Auto level & staff                                                              | 02 Nos.                    |
| 4.1.36     | Road Roller/Vibro Roller/ Mini Roller                                           | As per requirement         |
| 4.1.37     | Water Tanker with sprinkler attachment                                          | As per requirement         |
| 4.1.38     | Man lift crane of Minimum 20m reach                                             | As per requirement         |
| 4.1.39     | DG Set of 125 KVA Capacity                                                      | 01 Nos.                    |
| 4.1.43     | Electrical Winches with Building Hoist                                          | As per Requirement         |
| 4.1.44     | Construction Cable and Water Pipe Line                                          | As per Requirement         |
| 4.1.45     | Other Construction / Finishing Tools and Machines                               | As per Requirement         |
| 4.1.46     | Welding Machine                                                                 | As per Requirement         |
| 4.1.47     | Cutting Sets                                                                    | As per Requirement         |
| <b>4.2</b> | <b>Structural Fabrication and Erection Works</b>                                |                            |
| 4.2.1      | TYRE MOUNTED CRANE 75 MT (For fabrication and erection of Flue cans)            | 01 Nos./As per requirement |
| 4.2.2      | Farana crane (Required Capacity)<br>*Note- Hydra is not allowed at project site | 01 Nos.                    |
| 4.2.3      | Power winch – 3 T - for structural erection/ concreting / passenger lift.       | 02 Nos.                    |
| 4.2.4      | Power winch – 5 T - for structural erection.                                    | 01 Nos.                    |
| 4.2.5      | Power winch – 10 T for structural erection                                      | 01 Nos.                    |
| 4.2.6      | Welding Machine (Sub-Merged Arc & MIG Machine)                                  | As per Requirement         |
| 4.2.7      | Cutting Sets                                                                    | As per Requirement         |

## TECHNICAL CONDITIONS OF CONTRACT (TCC)

### Chapter – IV: T&PS AND MMES TO BE DEPLOYED BY CONTRACTOR

|        |                                                                                                          |                    |
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| 4.2.8  | Groove Cutting Machine                                                                                   | As per Requirement |
| 4.2.9  | Motorized MS Plate bending machine (Suitable for bending standard width of MS plate)                     | 01 Nos.            |
| 4.2.10 | Motorized MS Angle bending machine                                                                       | 01 Nos.            |
| 4.2.11 | Hole Drilling machine                                                                                    | As per Requirement |
| 4.2.12 | All equipment for area lighting like LED bulbs and Portable light Towers etc.                            | As per Requirement |
| 4.2.13 | Laser Beam for verticality check and also rotation (Capacity- up to 300 m heights)                       | 01 Nos.            |
| 4.2.14 | Hydraulic Jack Set with pump, Jack Rod, Recovery Jack, Laser Light, Hydraulic Pump and Turn Buckle Jacks | As per requirement |
| 4.2.15 | Material Lifting Winch and Passenger Lift                                                                | As per requirement |

|     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
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| 4.3 | <b>Measuring and Monitoring Equipment (MMEs):</b> To be finalized as per site requirement.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| 4.4 | <p><b>T&amp;Ps shown in the above-mentioned list is tentative requirement.</b> However, mobilization schedule as mutually agreed at site for major T&amp;Ps, have to be adhered to.</p> <p><b>Numbers/time of requirement will be reviewed from time to time at site and contractor will provide required T&amp;Ps / Equipment to ensure completion of entire work within schedule / target date of completion without any additional financial implication to BHEL.</b> Contractor will give advance intimation &amp; certification regarding capacity etc. prior to dispatch of heavy equipment. Also on completion of the respective activity, demobilization of T&amp;Ps in total or in part can be done with the due approval of Engineer-In-Charge. Retaining of the T&amp;Ps during the contract period will be mutually agreed in line with construction requirement.</p> |
| 4.5 | The contractor shall arrange crane operator, diesel, petrol and other consumables including electrical / water / air connections required for the tools and plants, equipment etc. Preventive and routine maintenance of T & P are also to be arranged by the contractor at his cost without any delay. Required number of experienced mechanics and helpers for routine maintenance of the above T&Ps shall be provided by the contractor within his quoted rate.                                                                                                                                                                                                                                                                                                                                                                                                                |

## TECHNICAL CONDITIONS OF CONTRACT (TCC)

### Chapter – IV: T&PS AND MMES TO BE DEPLOYED BY CONTRACTOR

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| <b>4.6</b> | Other terms and conditions regarding T&Ps to be deployed by Contractor, shall be as per clause No. 4.2 of SCC. |
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**TECHNICAL CONDITIONS OF CONTRACT (TCC)**  
**Chapter – V: T&PS AND MMES TO BE PROVIDED BY BHEL**

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| <b>5.0</b> | <b>LIST OF T&amp;P TO BE PROVIDED BY BHEL FREE OF HIRE CHARGES ON SHARING BASIS:</b>                                                     |
| <b>5.1</b> | BHEL shall not provide any T&Ps for this scope of work.<br>All T&Ps required for handling of items / materials to be arranged by bidder. |

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter – VI: TIME SCHEDULE

|              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                       |
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| <b>6</b>     | <b>Time Schedule and Mobilization:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                       |
| <b>6.1</b>   | <b>Initial Mobilization and Time Schedule:</b><br><p>After issue of LOA (though Fax/courier/email) the contractor shall report to the Construction Manager/Site In-Charge of BHEL at site within seven (07) days from date of LOA and submit detailed mobilization plan to start work within 15 days from date of LOA; unless instructed by BHEL to differ start of work in writing.</p> <p>The contractor has to subsequently augment his resources in such a manner that the entire works are completed within the contract period of <b>Twenty-Two (22) Months</b> from the date of start of work in a manner required by BHEL to match with the project schedule.</p> <p>Date of Start of work shall be considered as 15 days after date of LOA or as instructed by BHEL in writing.</p> |                                                       |
| <b>6.2</b>   | <b>Schedule of Completion:</b><br><p>The entire work under the scope of this contract shall be carried out in such a manner that the following listed major milestones are achieved as per completion schedule given against each activity &amp; released for erection by other agency.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                       |
| <b>Sl No</b> | <b>Activity</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | <b>Schedule completion from date of start of work</b> |
| <b>6.2.1</b> | Slip-form Assembly and Erection Completion                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 2 <sup>nd</sup> Month                                 |
| <b>6.2.2</b> | Completion of RCC shell & Installation of Temporary Aviation Light. <b>(M1)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | <b>10<sup>th</sup> Month</b>                          |
| <b>6.2.3</b> | Completion of platform beams fabrication and erection                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 12 <sup>th</sup> Month                                |
| <b>6.2.4</b> | Slipform Dismantling                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 13 <sup>th</sup> Month                                |
| <b>6.2.5</b> | Flue Can Fabrication and Erection                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 17 <sup>th</sup> Month                                |
| <b>6.2.6</b> | Readiness for Boiler Light Up (BLU) <b>(M2)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | <b>19<sup>th</sup> Month</b>                          |
| <b>6.2.7</b> | External Painting                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 21 <sup>st</sup> Month                                |
| <b>6.2.8</b> | Completion of all Balance Misc. Works like electrical item installation, including erection of elevator etc.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | <b>22<sup>nd</sup> Month</b>                          |
| <b>6.3</b>   | <b>The above schedule is only tentative.</b> The above schedule shall be advanced, if there are requirements to advance the project schedule and the civil works in the scope of the contractor is to be advanced to meet the project requirement. No extra payment whatsoever shall be paid on this account.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                       |
| <b>6.4</b>   | In order to meet the above schedule in general, and any other intermediate targets set, to meet customer/ project schedule requirements, Contractor shall arrange & augment all necessary resources from time to time on the instructions of BHEL Engineer.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                       |

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter – VI: TIME SCHEDULE

|            |                                                                                                                                                                                                                                                                                                                                               |                                           |  |            |          |                                           |    |                                                                    |                        |    |                                     |                        |
|------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------|--|------------|----------|-------------------------------------------|----|--------------------------------------------------------------------|------------------------|----|-------------------------------------|------------------------|
| 6.5        | Intermediate milestones:                                                                                                                                                                                                                                                                                                                      |                                           |  |            |          |                                           |    |                                                                    |                        |    |                                     |                        |
| 6.5.1      | Two Major Intermediate Milestones are identified as M1 and M2 above.                                                                                                                                                                                                                                                                          |                                           |  |            |          |                                           |    |                                                                    |                        |    |                                     |                        |
|            | <table><tr><td>Milestones</td><td>Activity</td><td>Schedule of completion from start of work</td></tr><tr><td>M1</td><td>Completion of RCC shell &amp; Installation of Temporary Aviation Light</td><td>10<sup>th</sup> Month</td></tr><tr><td>M2</td><td>Readiness for Boiler Light Up (BLU)</td><td>19<sup>th</sup> Month</td></tr></table> |                                           |  | Milestones | Activity | Schedule of completion from start of work | M1 | Completion of RCC shell & Installation of Temporary Aviation Light | 10 <sup>th</sup> Month | M2 | Readiness for Boiler Light Up (BLU) | 19 <sup>th</sup> Month |
| Milestones | Activity                                                                                                                                                                                                                                                                                                                                      | Schedule of completion from start of work |  |            |          |                                           |    |                                                                    |                        |    |                                     |                        |
| M1         | Completion of RCC shell & Installation of Temporary Aviation Light                                                                                                                                                                                                                                                                            | 10 <sup>th</sup> Month                    |  |            |          |                                           |    |                                                                    |                        |    |                                     |                        |
| M2         | Readiness for Boiler Light Up (BLU)                                                                                                                                                                                                                                                                                                           | 19 <sup>th</sup> Month                    |  |            |          |                                           |    |                                                                    |                        |    |                                     |                        |
| 6.6        | <b><u>Provision of Penalty in case of slippage of Intermediate Milestones:</u></b><br><u>In case of slippage of Two Major Intermediate Milestones, mentioned as M1 &amp; M2 above, delay Analysis shall be carried out on achievement of each of these two Intermediate Milestones in reference to F-14.</u>                                  |                                           |  |            |          |                                           |    |                                                                    |                        |    |                                     |                        |
| 6.6.1      | In case of slippage of these identified Intermediate Milestones, Delay Analysis shall be carried out on achievement of each of these two Intermediate Milestones.                                                                                                                                                                             |                                           |  |            |          |                                           |    |                                                                    |                        |    |                                     |                        |
| 6.6.2      | <u>In case delay in achieving M1 Milestone is solely attributable to the contractor, 0.5% per week of executable contract value*, limited to maximum 2% of executable contract value, will be withheld.</u>                                                                                                                                   |                                           |  |            |          |                                           |    |                                                                    |                        |    |                                     |                        |
| 6.6.3      | In case delay in achieving M2 Milestone is solely attributable to the contractor, 0.5% per week of executable contract value*, limited to maximum 3% of executable contract value, will be withheld.                                                                                                                                          |                                           |  |            |          |                                           |    |                                                                    |                        |    |                                     |                        |
| 6.6.4      | Amount already withheld, if any against slippage of M1 milestone, shall be released only if there is no delay attributable to contractor in achievement of M2 Milestone.                                                                                                                                                                      |                                           |  |            |          |                                           |    |                                                                    |                        |    |                                     |                        |
| 6.6.5      | Amount required to be withheld on account of slippage of identified intermediate milestone(s) shall be withheld out of respective milestone payment (corresponding RA Bill) and balance amount (if any) shall be withheld @10% of RA Bill amount from subsequent RA bills.                                                                    |                                           |  |            |          |                                           |    |                                                                    |                        |    |                                     |                        |
| 6.6.6      | Final deduction towards LD (if applicable), on account of delay attributable to contractor shall be based on final delay analysis on completion/ closure of contract. Withheld amount, if any due to slippage of identified intermediate milestone(s) shall be adjusted against LD or released as the case may be.                            |                                           |  |            |          |                                           |    |                                                                    |                        |    |                                     |                        |

## TECHNICAL CONDITIONS OF CONTRACT (TCC)

### Chapter – VI: TIME SCHEDULE

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| <b>6.6.7</b>  | In case of termination of contract due to any reason attributable to contractor before completion of work, the amount already withheld against slippage of intermediate milestones shall not be released and be converted into recovery.                                                                                                                                                                                                                                 |
| <b>6.7</b>    | Common activities shall be completed in Phase wise manner/ Instruction of Engineer within the Contractual time.                                                                                                                                                                                                                                                                                                                                                          |
| <b>6.8</b>    | Above milestone dates has to be completed in parallel.                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>6.9</b>    | Bidders are requested to submit Resource deployment plan Area wise with detail program in line with above schedule in the form of Bar Chart/ MS project planer along with their offer.                                                                                                                                                                                                                                                                                   |
|               | *Executable Contract Value - Value of work for which inputs/ fronts were made available to contractor and were scheduled for execution till the date of achievement of that milestone.                                                                                                                                                                                                                                                                                   |
| <b>6.10</b>   | <b>COMPLETION OF WORK AND COMMENCEMENT OF GUARANTEE PERIOD</b>                                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>6.10.1</b> | The works shall be completed to the entire satisfaction of the Engineer and in accordance with the completion schedule as specified in the Contract, and all unused stores and materials, tools, plant, equipment, temporary buildings, site office, labor hutments and other things shall be removed and the site and work cleared of rubbish and all waste materials and delivered up clean and tidy to the satisfaction of the Engineer at the Contractor's expenses. |
| <b>6.10.2</b> | BHEL shall have power to take over from the Contractor from time to time such sections of the work as have been completed to the satisfaction of the Engineer. Such work however shall not be treated as have been completed until the remaining / pending works are executed to the satisfaction of Engineer.                                                                                                                                                           |
| <b>6.10.3</b> | The Engineer shall certify to the contractor the date on which the work is completed and the date thereof for commencement of Guarantee Period. Guarantee Period shall be as given in GCC.                                                                                                                                                                                                                                                                               |

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter – VII: TERMS OF PAYMENT

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| <b>7.0</b>   | <b>Terms of Payment:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>7.1</b>   | <b>Progressive Payment/ Final Payment:</b> The payments for works under the scope of this contract shall be as per clause no 2.6; 2.22; 2.23 of General Conditions of Contract and Volume-IB, Chapter-X of SCC.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <b>7.1.1</b> | <p><b><u>Documents required for RA Bill:</u></b></p> <ul style="list-style-type: none"><li>• GST Complied Invoice of the work done as per approved BBU.</li><li>• WAM -6 for RA Bill.</li><li>• Jointly signed Measurement sheet.</li><li>• Power of Attorney before submission of Bill.</li><li>• Validity of Bank Guarantees as applicable under the contract.</li><li>• HR/IR compliance documents:<ul style="list-style-type: none"><li>i. Wages payment sheet as per applicable minimum wages.</li><li>ii. Proof of PF contribution submission.</li><li>iii. Proof of ESI/ WC contribution submission</li><li>iv. Proof of Bonus payment as per Bonus Act if applicable.</li><li>v. Proof of EL payment if applicable.</li><li>vi. Any other statutory document if applicable.</li></ul></li></ul>                                                                                                                         |
| <b>7.1.2</b> | <p><b><u>Documents required for Final Bill:</u></b></p> <p>The final bill is drawn as soon as the entire work is completed. From the final amount due, all amounts already claimed up to the previous running account bill will be deducted. It should be ensured that in the final bill the following additional particulars have been provided:</p> <ul style="list-style-type: none"><li>• Final Bill in WAM-7 Format.</li><li>• ‘No claim’ certificate from the contractor.</li><li>• Clearance certificates where ever applicable viz. Clearance Certificates from Customer, various Statutory Authorities like Labour department, PF Authorities, Commercial Tax Department etc.</li><li>• Final Material re-conciliation statement duly approved by BHEL.</li><li>• Indemnity Bond as per prescribed format.</li><li>• Deviation statement showing the difference between the actuals and as per the contract.</li></ul> |

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

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|     | <ul style="list-style-type: none"> <li>Final Delay Analysis.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 7.2 | <p><b>SECURED RECOVERABLE ADVANCES:</b></p> <p><b>Interest Free Secured Mobilization Advance as per GCC Clause No. 2.13.1</b> will be payable under exceptional circumstances on certification of BHEL Construction Manager at Site. Interest Free Mobilization Advance shall be disbursed in specifically mentioned stages of major resource mobilization as specified hereunder:</p> <ol style="list-style-type: none"> <li>For Mobilization of Batching Plant with Cement Silos (01 no.), Transit Mixture (01 no), JCB (01 no), - 2.0%</li> <li>For Mobilization of Material Lifting Winch and Passenger Lift - 1.5%</li> <li>For Mobilization of Hydraulic Jack Set with pump, Jack Rod, Recovery Jack, Laser Light, Hydraulic Pump and Turn Buckle Jacks. - 1.5%</li> </ol> <p>Note:</p> <ol style="list-style-type: none"> <li>BHEL Site-CM shall be the deciding authority for assessing the admissibility of advance payment to contractor.</li> <li>In case contractor do not fulfil the agreed conditions of payment of 1st mobilization advance, BHEL Construction Manager will have the authority to not allow the 2nd mobilization advance to contractor.</li> </ol> |
| 7.3 | <p><b><u>PRICE VARIATION COMPENSATION:</u></b></p> <p>Applicable as per GCC Clause no 2.17. However following conditions shall be part of said clause;</p> <p>A) PVC for BOQ Item ST No 22, A24, 27 (wherein Structural Steel Supply shall be in Contractor scope): - GCC Clause No 2.17.2 (B) shall be applicable.</p> <p>B) PVC for all other BOQ items except as stipulated in 7.3 A): - GCC Clause No 2.17.2 (C) shall be applicable.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| 7.4 | <p>The contractor shall maintain the labour sheds for its workmen as per BHEL guidelines. 0.25 % of every RA Bill shall be linked on certification from BHEL for compliance with the guidelines of labour colony.</p> <p>Regular visit of workmen establishment shall be done by team from BHEL to ensure implementation of above guidelines. Any irregularities observed shall have to be rectified by agencies on immediate basis.</p> <p>In case, the report submitted by BHEL team is not satisfactory, necessary actions including recoveries (0.25% of RA Bill value) shall be done as per contract. In addition to the recoveries as per contract (0.25% of RA Bill value), expenses incurred (if any)</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

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|     | for maintenance & rectification by BHEL shall be recovered from agency along with 5% overheads.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 7.5 | <b>LAND AND WORKER's ACCOMMODATION SHEDS ALLOCATED TO CONTRACTOR: -</b><br>Recovery as per TCC Clause No. 3.10.1.1 & 3.10.2.1 shall be applicable.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 7.6 | <b>ROYALTY FOR CONSTRUCTION MATERIALS:</b> <ol style="list-style-type: none"> <li>i. The Bid Price shall be inclusive of any Royalties or Seigniorage Fee or Cess or other charges payable on the quarried or mined metal, minerals, or minor minerals, as the case may be, at the rate(s) prevailing as on due date of Bid Submission.</li> <li>ii. The contract price shall be inclusive of all applicable Royalty for Construction materials and the Bidder to quote their price accordingly. The Royalty amount will not be reimbursed by BHEL.</li> <li>iii. In the event of there being a statutory increase in the rates of royalty charges/ fresh levy of royalty on materials, the increase/ fresh levy shall be reimbursed to the Contractor upon submission of original challan of having made the payments at revised rates and necessary proof of payments.</li> <li>iv. In the event of there being a decrease in such rates, the decrease shall be recovered from the Contractor.</li> <li>v. The increase or decrease in Royalty shall be w.r.t. the rate as referred in Clause no. 7.6 (i) above.</li> <li>vi. The total reimbursement of increase or decrease in royalty charges or new levies (positive or negative) as specified above, to be paid or recovered, shall however be calculated on the quantity of materials actually considered while making the royalty payments to the concerned authorities, or the theoretical consumption of these materials (calculated on the basis of the volume of concrete or fill accepted for payment), whichever is less, and on the basis of documentary evidence of Govt. Notification.</li> <li>vii. However, the Contractor will settle claims, if any, on account of over charge by the State Authorities.</li> <li>viii. If there is a demand by statutory bodies at a later date from BHEL/ contractor for payment of royalty for construction materials, the same will be paid by contractor or recovered from Contractor and paid by BHEL. BHEL's decision regarding modality of payment for the demand is with BHEL &amp; binding on the Contractor. Any penalty levied by the statutory bodies in this regard or any other reason on account of royalty/ seigniorage fee for Construction materials will be to contractor's account.</li> <li>ix. The component of Royalties or Seigniorage Fee or Cess or other charges, if applicable in a running account bill, shall only be released by the Purchaser to the Contractor on submission of the following documents in original <ol style="list-style-type: none"> <li>A) In case the Contractor is the primary license holder of the quarry / mines:</li> </ol> </li> </ol> |

## TECHNICAL CONDITIONS OF CONTRACT (TCC)

### Chapter – VII: TERMS OF PAYMENT

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|  | <p>i) Vehicle wise challan / transit permit and proof of payment of royalty, and</p> <p>ii) Any other document required as per the relevant Acts/Rules of the concerned state.</p> <p>B) In case the Contractor is the purchaser of soil/earth, sand, stone/aggregates, metals, minerals or minor minerals:</p> <p>i) Purchase voucher and vehicle wise challan / transit permit and proof of payment of royalty, and</p> <p>ii) Any other document required as per the relevant Acts/Rules of the concerned state.</p> <p>x. In case the Contractor fails to provide the required proof of royalty payment with the RA bill then an amount based on the prevailing rates of the royalty shall be deducted from the respective RA bill, which shall be refunded to the Contractor on submission of proof of royalty payment. However, if the Contractor fails to provide the proof of royalty payment within a period of 60 days from the date of RA bill, BHEL shall issue a notice to the Contractor giving 30 days' time for submission of the proof of royalty payment. In case of non-submission of the proof of payment of royalty by the Contractor, the amount so deducted shall be deposited by BHEL to the concerned authority.</p> <p>In the absence of production of challan, the actual prevailing rate for royalty/seigniorage fee as per the <b>Haryana Government Gazette Notification</b> shall be withheld from RA bill/ final bill and on production of challan, payment of relevant portion will be released.</p> |
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# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter – VIII: TAXES AND DUTIES

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| <b>8.0</b>   | <b>TAXES &amp; DUTIES</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>8.1</b>   | <p>The contractor shall pay all (save the specific exclusions as enumerated in this clause) taxes, fees, license, charges, deposits, duties, tools, royalty, commissions, other charges, etc. which may be levied on the input goods &amp; services consumed and output goods &amp; services delivered in course of his operations in executing the contract. In case BHEL is forced to pay any of such taxes/duties, BHEL shall have the right to recover the same from his bills or otherwise as deemed fit.</p> <p>However, provisions regarding <b>GST</b> on output supply (goods/service) and TDS/TCS as per Income Tax Act shall be as per following clauses.</p> |
| <b>8.2</b>   | <b>GST (Goods and Services Tax)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>8.2.1</b> | <p>GST as applicable on output supply (goods/services) are excluded from contractor's scope; therefore, contractor's price/rates shall be <b>exclusive</b> of GST. Reimbursement of GST is subject to compliance of following terms and conditions. BHEL shall have the right to deny payment of GST and to recover any loss to BHEL on account of tax, interest, penalty etc. for non-compliance of any of the following condition.</p>                                                                                                                                                                                                                                 |
| <b>8.2.2</b> | <p>The admissibility of GST, taxes and duties referred in this chapter or elsewhere in the contract shall be limited to direct transactions between BHEL &amp; its Contractor. BHEL shall not consider GST on any transaction other than the direct transaction between BHEL &amp; its Contractor.</p>                                                                                                                                                                                                                                                                                                                                                                   |
| <b>8.2.3</b> | <p>Contractor shall obtain prior written consent of BHEL before billing the amount towards such taxes. Where the GST laws permit more than one option or methodology for discharging the liability of tax/levy/duty, BHEL shall have the right to adopt the appropriate one considering the amount of tax liability on BHEL/Client as well as procedural simplicity with regard to assessment of the liability. The option chosen by BHEL shall be binding on the Contractor for discharging the obligation of BHEL in respect of the tax liability to the Contractor.</p>                                                                                               |
| <b>8.2.4</b> | <p>Contractor has to submit GST registration certificate of the concerned state. Contractor also needs to ensure that the submitted GST registration certificate should be in active status during the entire contract period.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>8.2.5</b> | <p>Contractor/Vendor has to issue Invoice/Debit Note/Credit Note indicating HSN/SAC code, Description, Value, Rate, applicable tax and other particulars in compliance with the provisions of relevant GST Act and Rules made thereunder.</p>                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>8.2.6</b> | <p>Vendor has to submit GST compliant invoice within the due date of invoice as per GST Law. In case of delay, BHEL reserves the right of denial of GST payment if there occurs any hardship to BHEL in claiming the input thereof. In case of goods, vendor has to provide scan copy of</p>                                                                                                                                                                                                                                                                                                                                                                             |

## TECHNICAL CONDITIONS OF CONTRACT (TCC)

### Chapter – VIII: TAXES AND DUTIES

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|               | invoice & GR/LR/RR to BHEL before movement of goods starts to enable BHEL to meet its GST related compliances. Special care should be taken in case of month end transactions.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>8.2.7</b>  | Vendor has to ensure that invoice in respect of such services which have been provided/completed on or before end of the month should not bear the date later than last working day of the month in which services are performed.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>8.2.8</b>  | <p>Subject to other provisions of the contract, GST amount claimed in the invoice shall be released on fulfilment of all the following conditions by the Contractor: -</p> <ol style="list-style-type: none"><li>Supply of goods and/or services have been received by BHEL.</li><li>Original Tax Invoice has been submitted to BHEL.</li><li>Contractor/ Vendor has submitted all the documents required for processing of bill as per contract/ purchase order/ work order.</li><li>In cases where e-invoicing provision is applicable, vendor/contractor is required to submit invoice in compliance with e-invoicing provisions of GST Act and Rules made thereunder.</li><li>Contractor has filed all the relevant GST return (e.g. GSTR-1, GSTR-3B, etc.) pertaining to the invoice submitted and submit the proof of such return along with immediate subsequent invoice. In case of final invoice/ bill, contractor has to submit proof of such return within fifteen days from the due date of relevant return.</li><li>Respective invoice has appeared in BHEL's GSTR - 2A for the month corresponding to the month of invoice and in GSTR-2B of the month in which such invoices has been reported by the contractor along with status of ITC availability as "YES" in GSTR-2B. Alternatively, BG of appropriate value may be furnished which shall be valid at least one month beyond the due date of confirmation of relevant payment of GST on GSTN portal or sufficient security is available to adjust the financial impact in case of any default by the contractor.</li><li>Contractor has to submit an undertaking confirming the payment of all due GST in respect of invoices pertaining to BHEL.</li></ol> |
| <b>8.2.9</b>  | Any financial loss arises to BHEL on account of failure or delay in submission of any document as per contract/purchase order/work order at the time of submission of Tax invoice to BHEL, shall be deducted from contractor's bill or otherwise as deemed fit.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>8.2.10</b> | TDS as applicable under GST law shall be deducted from contractor's bill.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |

## TECHNICAL CONDITIONS OF CONTRACT (TCC)

### Chapter – VIII: TAXES AND DUTIES

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| 8.2.11 | Contractor shall comply with the provisions of e-way bill wherever applicable. Further wherever provisions of GST Act permits, all the e-way bills , road permits etc. required for transportation of goods needs to be arranged by the contractor.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| 8.2.12 | Contractor shall be solely responsible for discharging his GST liability according to the provisions of GST Law and BHEL will not entertain any claim of GST/interest/penalty or any other liability on account of failure of contractor in complying the provisions of GST Law or discharging the GST liability in a manner laid down thereunder.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| 8.2.13 | In case declaration of any invoice is delayed by the vendor in his GST return or any invoice is subsequently amended/alterd/deleted on GSTN portal which results in any adverse financial implication on BHEL, the financial impact thereof including interest/penalty shall be recovered from the Contactor's due payment.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| 8.2.14 | Any denial of input credit to BHEL or arising of any tax liability on BHEL due to non-compliance of GST Law by the Contractor in any manner, will be recovered along with liability on account of interest and penalty (if any) from the payments due to the Contactor.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| 8.2.15 | In the event of any ambiguity in GST law with respect to availability of input credit of GST charged on the invoice raised by the contractor or with respect to any other matter having impact on BHEL, BHEL's decision shall be final and binding on the contractor.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| 8.2.16 | <p><b><u>Variation in Taxes &amp; Duties:</u></b></p> <p>Any upward variation in GST shall be considered for reimbursement provided supply of goods and services are made within schedule date stipulated in the contract or approved extended schedule for the reason solely attributable to BHEL. However downward variation shall be subject to adjustment as per actual GST applicability.</p> <p>In case the Government imposes any new levy/tax on the output service/goods after price bid opening, the same shall be reimbursed by BHEL at actual. The reimbursement under this clause is restricted to the direct transaction between BHEL and its contactor only and within the contractual delivery period only.</p> <p>In case any new tax/levy/duty etc. becomes applicable after the date of Bidder's offer but before opening of the price Bid, the Bidder/Contractor must convey its impact on his price duly substantiated by documentary evidence in support of the same before opening of price bid. Claim for any such impact after opening the price bid will not be considered by BHEL for reimbursement of tax or reassessment of offer.</p> |
| 8.3    | <p><b><u>Income Tax:</u></b></p> <p>TDS/TCS as applicable under Income Tax Act, 1961 or rules made thereunder shall be deducted/collected from contractor's bill.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter – VIII: TAXES AND DUTIES

### **8.4 BOCW Act & Cess Act**

**8.4.1 BOCW Cess is not to be borne by contractor.** Refer Annexure-I for BOCW Act & Cess Act.

| Annexure-I:                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
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| Bidder may please note that the sub-contractor/bidder of BHEL engaging building or construction worker in connection with building or other construction work, are required to follow the procedures enumerated below: |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 1.                                                                                                                                                                                                                     | It shall be the sole responsibility of the contractor as employer to ensure compliance of all the statutory obligations under the Building and other Construction Workers' (Regulation of Employment and Conditions of Service) Act, 1996 and the Building and other Construction Workers' Welfare Cess Act, 1996 and the rules made thereunder.                                                                                                                                                                                                                                                                     |
| 2.                                                                                                                                                                                                                     | It shall be sole responsibility of the contractor engaging Building Workers in connection with the building or other construction works in the capacity of employer to apply and obtain registration certificate specifying the scope of work under the relevant provisions of the Building and Other Construction Workers' (Regulation of Employment and Conditions of Service) Act, 1996 from the appropriate Authorities.                                                                                                                                                                                         |
| 3.                                                                                                                                                                                                                     | It shall be responsibility of the contractor to furnish a copy of such Registration Certificate within a period of one month from the date of commencement of Work.                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| 4.                                                                                                                                                                                                                     | It is responsibility of the contractor to register under the Building and other Construction Workers' Welfare Cess Act, 1996 and deposit the required Cess for the purposes of the Building and other Construction Workers' (Regulation of Employment and Conditions of Service) Act, 1996 at such rate as the Central Government may, by notification in the Official Gazette, from time to time specify. However, before registering and deposit of Cess under the Building and other Construction Workers' Welfare Cess Act, 1996, the contractor will seek written prior approval from the Construction Manager. |
| 5.                                                                                                                                                                                                                     | It shall be sole responsibility of the contractor as employer to get registered every Building Worker, who is between the age of 18 to 60 years of age and who has been engaged in any building or other construction work for not less than ninety days during the preceding twelve months as Beneficiary under the Building and other Construction Workers' (Regulation of Employment and Conditions of Service) Act, 1996.                                                                                                                                                                                        |

## TECHNICAL CONDITIONS OF CONTRACT (TCC)

### Chapter – VIII: TAXES AND DUTIES

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| 6.  | It shall be sole responsibility of the contractor as employer to maintain all the registers, records, notices and submit returns under the Building and other Construction Workers' (Regulation of Employment and Conditions of Service) Act, 1996 and the Building and other Construction Workers' Welfare Cess Act, 1996 and the rules made thereunder.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| 7.  | It shall be sole responsibility of the contractor as employer to provide notice of poisoning or occupation notifiable diseases, to report of accident and dangerous occurrences to the concerned authorities under the Building and other Construction Workers' (Regulation of Employment and Conditions of Service) Act, 1996 and the rules made thereunder and to make payment of all statutory payments & compensation under the Employees' Compensation Act, 1923.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| 8.  | <p>It shall be the responsibility of the sub-contractor as employer to make payment/deposit of applicable cess amount on the extent of work involving building or construction workers engaged by the sub-contractor within a period of one month from the receipt of payment. It shall also be responsibility of the Contractor to furnish BHEL on monthly basis, Receipts/ Challans towards Deposit of the Cess under the Building and other Construction Workers' Welfare Cess Act, 1996 and the rules made thereunder along with following statistics:</p> <ul style="list-style-type: none"><li>i) Number of Building Workers employed during preceding one month.</li><li>ii) Number of Building workers registered as Beneficiary during preceding one month.</li><li>iii) Disbursement of Wages made to the Building Workers for preceding wage month.</li><li>iv) Remittance of Contribution of Beneficiaries made during the preceding month.</li></ul> |
| 9.  | <b>BHEL shall reimburse the contractor the Cess amount deposited for the purposes of the Building and other Construction Workers' (Regulation of Employment and Conditions of Service) Act, 1996 under the Building and other Construction Workers' Welfare Cess Act, 1996 and the rules made thereunder.</b> However, BHEL shall not reimburse the Fee paid towards the registration of establishment, fees paid towards registration of Beneficiaries and Contribution of Beneficiaries remitted.                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| 10. | It shall be responsibility of the Building Worker engaged by the Contractor and registered as a beneficiary under the Building and other Construction Workers' (Regulation of Employment and Conditions of Service) Act, 1996 to contribute to the Fund at such rate per mensem as may be specified by the State government by notification in the Official Gazette. Where such beneficiary authorizes the contractor being his employer to deduct his contribution from his monthly wages and to remit the same, the contractor shall remit such contribution to the Building and other construction Workers' Welfare Board in such manner as may be directed by the Board , within the fifteen days from such deduction.                                                                                                                                                                                                                                        |

## TECHNICAL CONDITIONS OF CONTRACT (TCC)

### Chapter – VIII: TAXES AND DUTIES

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| 11. | <b>Bidders may please note that though the quoted price is exclusive of BOCW (which will be reimbursed by BHEL as per sub-clause 9 above) , however, If at any point of time during the contract period, non-compliance of the provisions of the Building and other Construction Workers’ (Regulation of Employment and Conditions of Service) Act, 1996 and the Building and other Construction Workers’ Welfare Cess Act, 1996 and the rules made thereunder is observed, BHEL reserves the right to deduct the applicable cess (1%) on the contract value and penalty ( if any, imposed by Cess Authorities) from the payables on account of non-compliance.</b> |
| 12. | The contractor shall declare to undertake any liability or claim arising out of employment of building workers and shall indemnify BHEL from all consequences / liabilities / penalties in case of non-compliance of the provisions of the Building and other Construction Workers’ (Regulation of Employment and Conditions of Service) Act, 1996 and the Building and other Construction Workers’ Welfare Cess Act, 1996 and the rules made thereunder.                                                                                                                                                                                                           |

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter-IX: MATERIALS

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| <b>9.0</b> | <b>MATERIAL</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 9.1        | Material to be issued by BHEL (Free of Cost) as specified in BOQ cum Rate Schedule:<br><ol style="list-style-type: none"><li>1. Reinforcement Steel (Unless Otherwise Noted Elsewhere)</li><li>2. Structural Steel Material (Plates for flue canes, Platform Beams, Rolled Section etc.) (Unless Otherwise Noted Elsewhere)</li></ol>                                                                                                                                                                                              |
| 9.2        | All other materials required for proper completion of job shall be provided by the contractor and is deemed to be inclusive in the quoted price. Bidder's scope also includes following:                                                                                                                                                                                                                                                                                                                                           |
| 9.2.1      | Furnishing samples of all materials required by the BHEL Engineer for testing/inspection and approval for use in the works. The samples may be retained by the Engineer for final incorporation in the works.                                                                                                                                                                                                                                                                                                                      |
| 9.2.2      | Furnishing test reports for the products used or intended to be used, if called for the specifications or if so desired by the engineer.                                                                                                                                                                                                                                                                                                                                                                                           |
| 9.2.3      | Arranging manufacturer's supervision for items of work done as per manufacturer's specifications when so specified.                                                                                                                                                                                                                                                                                                                                                                                                                |
| 9.2.4      | Contractor shall set up suitable storage facilities for Cement, sand, bolts, aggregate, reinforcement steel, structural steel, handrail, grating, foundation bolts, shuttering item, inserts, water proofing material, admixture other BOI's etc. and all are stored properly as per IS recommendation/technical specifications/ manufacturer recommendation. Wastage due to inadequacy of storage will be on account of contractor.                                                                                               |
| <b>9.3</b> | <b>HANDLING OF MATERIAL ISSUED BY BHEL:</b><br><b>Refer Chapter-VI "Material Handling, Storage &amp; Preservation" of SCC</b>                                                                                                                                                                                                                                                                                                                                                                                                      |
| 9.3.1      | Cement, Reinforcement Steel & Structural Steel (wherever specified as free issue by BHEL) required for the tender scope shall be procured by BHEL and issued to contractor free of cost (As FOC Item). However, unloading, handling / storage of BHEL materials for this tender scope at site, Contractor's Stores, issuance of materials from BHEL Stores and further transportation from Stores to work area (including loading and unloading) will be in the scope of contractor. No Extra payment shall be made for this work. |
| 9.3.2      | 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 for storing and stacking of cement issued by BHEL free of cost.                                                                                                                                                                                                                                                                                                |

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter-IX: MATERIALS

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| 9.3.3  | The theoretical weight of each bag of cement for issued purposes will be considered as 50kg, the contractor shall be accountable for the cement issued to the contractor on this notional weight only. No claim whatsoever will be entertained because of difference between theoretical and actual weight of the bags of cement.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| 9.3.4  | The empty cement bags duly accounted for against issue shall be the contractor's property and the same shall be disposed as per statutory regulation prevailing in the project.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| 9.3.5  | The contractor shall satisfy himself of the quality and quantity of supplied cement at the time of taking delivery from BHEL stores. No claims whatsoever will be entertained by BHEL because of quality or quantity after the materials are taken by the contractor from BHEL stores.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 9.3.6  | Contractor will be responsible for sampling and testing of cement as per Indian Standard / Specification / approved quality plan in the testing laboratory established by the contractor.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 9.3.7  | No cement will be issued on free basis for bought out item like Hume pipe, Interlocking Paver block, Fly ash brick etc. However, cement for mortar for fixing of these items if required will be issued on free basis.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 9.3.8  | One month shall be the limit for the maximum quantity of BHEL issued cement that would be with the contractor at any point of time when work is in progress (excluding what has already been incorporated in the works).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| 9.3.9  | Contractor will be responsible for unloading the cement as soon as the arrival of cement in the weather proof cement storage sheds/ Silo's having dense impervious bituminous or concrete floors which shall be kept swept clean at all times. The storage arrangements shall be fully completed and approved by the owner before any cement is delivered to site. The construction of cement storage sheds as per the requirement of BHEL, unloading of cement bags, stacking properly in the storage sheds, removal of the sheds after the completion of the work are in the scope of bidder. Though the cement is unloaded directly at the contractor storage shed, it will be deemed to be considered that the cement was issued from BHEL stores. Necessary documents are to be submitted by the contractor to the BHEL stores for having received cement. |
| 9.3.10 | The contractor shall in no case be entitled for any compensation on account of any delay in supply or non-supply thereof for all or any such materials. However, in case of non-availability of any specific material / section(s) which delays the completion of work, such cases shall be recorded separately in monthly planning format (F14) and shall be considered for time extension of contract.                                                                                                                                                                                                                                                                                                                                                                                                                                                        |

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter-IX: MATERIALS

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| 9.3.11 | Contractor will have to make his own arrangement at his own cost for procurement of any other materials except as mentioned above, as required for the works and of such quality as acceptable to BHEL.                                                                                                                                                                                                                                                                 |              |                  |
| 9.3.12 | Contractor shall also carryout 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 computerized system utilizing suitable software. Contractor shall engage experienced software personnel to associate on dedicated basis for efficient discharge of the same in time. |              |                  |
| 9.3.13 | The contractor shall solely be responsible for the safety & security of material after it is handed over and issued to contractor by the BHEL.                                                                                                                                                                                                                                                                                                                          |              |                  |
| 9.3.14 | BHEL reserves the right to recover from the contractor any loss of material issued by BHEL arising out of damage/ theft or any other causes during verification/stacking or at any time under the custody of the contractor.                                                                                                                                                                                                                                            |              |                  |
| 9.3.15 | BHEL issued materials, shall not be under any circumstances whatsoever, and shall be taken out of the project site unless otherwise permitted by BHEL for outside job.                                                                                                                                                                                                                                                                                                  |              |                  |
| 9.3.16 | The contractor shall maintain proper store account for all the BHEL issued materials and shall give Three (03) copies of monthly-computerized reconciliation statement of such account showing total receipt, consumption and balance at site to the BHEL. BHEL Engineer's certification for the reconciliation of steel shall be final.                                                                                                                                |              |                  |
| 9.4    | <b>Issue and Return of Cement, Reinforcement Steel, MS Round Bar (Earthing Rod) and Structural Steel.</b><br><b>Refer Chapter-VI "Material Handling, Storage &amp; Preservation" of SCC</b>                                                                                                                                                                                                                                                                             |              |                  |
| 9.5    | <b>Consumption and Wastage of Cement, Reinforcement Steel, Structural Steel and MS Round Bar (Earthing Rod):</b><br><b>Refer Chapter-VI "Material Handling, Storage &amp; Preservation" of SCC</b>                                                                                                                                                                                                                                                                      |              |                  |
| 9.6    | <b>Recovery of Materials (Penal Rates):</b><br>If wastage exceeds the specified limit, the recovery of excess wastage shall be made from monthly RA Bills as per following penal rates (excluding GST):                                                                                                                                                                                                                                                                 |              |                  |
| 9.6.1  | Sl. No.                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Materials    | Penal Rate (Rs.) |
|        | 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Cement (PPC) | 5500/- per MT    |
|        | 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Cement (OPC) | 6500/- per MT    |

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# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter-IX: MATERIALS

|       |                                                                                                                                             |                                                 |                   |  |
|-------|---------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------|-------------------|--|
|       | 3                                                                                                                                           | Reinforcement Steel / Earthing Rod              | 60,000/- per MT   |  |
|       | 4                                                                                                                                           | Structural Steel (Plates, Rolled Sections etc.) | 70,000/- per MT   |  |
|       | 5                                                                                                                                           | Structural Steel Gratings                       | 1,00,000/- per MT |  |
| 9.6.2 | <b>Penal Rate will be 1.05 times the actual cost to BHEL or Rate mentioned in Table 9.6.1 above, whichever is higher, shall be imposed.</b> |                                                 |                   |  |

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter-X: BOQ CUM RATE SCHEDULE AND % WEIGHTAGE OF INDIVIDUAL ITEMS

**This Chapter consists of Part A & Part B of Volume II “Price bid”:**

| <b><u>CONTENTS</u></b>                                                            |                                                                                               |
|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|
| <b>Description</b>                                                                | <b>Remarks</b>                                                                                |
| <b>PART A:</b> Instructions to the Bidders                                        | Instructions                                                                                  |
| <b>PART B:</b> % weightage for amount of individual items of Schedule of quantity | BILL OF QUANTITIES AND % WEIGHTAGE OF INDIVIDUAL ITEMS                                        |
| <b>PART C:</b> Total Price for entire scope of Work                               | This part is implanted in the E- Procurement portal entitled as “Part-C of Vol-II Price Bid”. |

|                       |                                                                                                                                                                                                                                                                                              |
|-----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b><u>Part A:</u></b> | <b><u>Instructions to the Bidders</u></b>                                                                                                                                                                                                                                                    |
| 1.                    | <b><u>Bidders shall quote Total Price for the entire scope of work in Rupees in VOL II PRICE BID at BHEL E-procurement Portal.</u></b> Any other entry elsewhere in the offer of the bidder shall be treated as Null and Void. The total value shall be automatically calculated on E-portal |
| 2.                    | Bidder shall quote the total price in “Price Bid”.                                                                                                                                                                                                                                           |
| 3.                    | BHEL has fixed the % weightages as in “Part-B” for the amount of individual items of BOQ Cum Rate Schedule w.r.t. the total price of Price Bid Vol-II.                                                                                                                                       |
| 4.                    | Based on the pre-fixed % weightages, amount of individual items shall be derived by BHEL. This amount shall not be rounded off.                                                                                                                                                              |
| 5.                    | Based on the quantities of individual item and the amount arrived in Sl. No. 4 above, item rate of individual items shall be derived by BHEL. This item rate shall be rounded off up to two decimal places and shall be used to calculate the total amount of an item.                       |
| 6.                    | Bidders to note that this is an ‘ <b><u>Item rate contract</u></b> ’. Payment shall be made for the actual quantities of work executed at the Unit rate arrived at as per serial no. 5 above.                                                                                                |
| <b><u>PART B:</u></b> | % weightage for amount of individual items of BOQ CUM RATE SCHEDULE w.r.t. the total price (as quoted by the bidder in “Part C of Vol-II-Price Bid”)- attached separately.                                                                                                                   |

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter-XI: TECHNICAL SPECIFICATIONS AND DRAWINGS

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### **11.0 Following Technical Specifications shall be integral parts of this tender (attached separately):**

- SECTION-C: SPECIFIC TECHNICAL REQUIREMENTS (RCC CHIMNEY).
- TECHNICAL SPECIFICATION FOR CHIMNEY (ELECTRICAL PORTION).
- TECHNICAL SPECIFICATION – MECHANICAL PORTION FOR RACK & PINION TYPE ELEVATOR FOR CHIMNEY.
- SECTION-D: GENERAL TECHNICAL REQUIREMENTS.
- CHIMNEY GENERAL ARRANGEMENT DRAWING.
- PLOT PLAN (TENDER STAGE DRAWING FOR BIDDER'S INFORMATION ONLY. FINAL PLOT PLAN SHALL BE PROVIDED TO THE SUCCESSFUL BIDDER AFTER AWARD OF WORK).
- STANDARD GUIDELINE FOR WORKER'S ACCOMMODATION.
- TYPICAL LAYOUT OF WORKER ACCOMMODATION SHEDS.

### **NOTES:**

- Contractor has to make him well conversant with the Technical Specifications of Customer (Section-C) and BHEL (Section-D). In case of ambiguity between BHEL's and Customer's specification, Customer's specification shall prevail.
- Above documents have been uploaded Separately.