

Vol-IA

# TECHNICAL CONDITIONS OF CONTRACT (TCC)



# TECHNICAL CONDITIONS OF CONTRACT (TCC)

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## Chapter - I: Projects Information

### 1. Project Information:

Sl. No.	Description	Details
1	Project Title	2x660 MW Talcher Thermal Power Station,
2	Customer/Project Owner	National Thermal Power Corporation Limited (NTPC Limited)
3	Location	The proposed site is at a distance of about 4 km from Talcher town and about 25 km from district headquarters Angul in Odisha state, India.
4	Nearest Airport	Bhubaneshwar (3 approx.. 150Km by road)
5	Access By Road/Major Cities	The area is accessible by NH-23 (renamed NH-149) at about 1 km.
6	Temperature	Mean of daily minimum temperature = 15.1°C Mean of daily maximum temperature = 39.8°C
7	Seismic Zone	The project site lies in zone III as defined in IS: 1893.
8	Wind Speed	Design wind speed is 50 m/sec as per IS: 875 Part III

INSTRUCTIONS TO BIDDERS							
1.1	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.						
1.2	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. All costs for and associated with site visits shall be borne by the bidder.						
1.3	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.						
1.4	Bidders may fix up their site visit in consultation with below mentioned contact person: <table border="1"> <tr> <td>Name:</td><td>Sh. Rajib Nath</td></tr> <tr> <td>Designation:</td><td>Sr. DGM</td></tr> <tr> <td>Email:</td><td><a href="mailto:rajibnath@bhel.in">rajibnath@bhel.in</a></td></tr> </table>	Name:	Sh. Rajib Nath	Designation:	Sr. DGM	Email:	<a href="mailto:rajibnath@bhel.in">rajibnath@bhel.in</a>
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## Chapter - I: Projects Information

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	Contact no:	6370737678	
	Name:	Sh. Rohit Agrawal	
	Designation:	Manager	
	Email:	<a href="mailto:rohitagr@bhel.in">rohitagr@bhel.in</a>	
	Contact no:	9974066147	

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## Chapter - II: Scope of Work

<b>2.0</b>	<b>Scope of Works:</b>
<b>2.1</b>	<p>Scope of this tender covers fabrication and supply of finished factory fabricated structure up-to Project Site, based on input design &amp; detailed drawing provided by BHEL for <b>CHP-AHP &amp; FGD</b> and other structures as specified in scope for 2X660 MW Talcher Thermal Power Station.</p> <p>For the purpose of award of this tender, the tender has Two pricing modalities, based on separate BOQs, as mentioned hereunder:</p> <p><b>Mode 1:</b> Supply of fabricated structure of CHP, AHP FGD and other misc. Buildings (other than Main power House, Bunker and Control room), where most of the raw material supply is in BHEL scope. BOQ as mentioned in Sl.no.8.1 (a).</p> <p><b>Mode 2:</b> Supply of fabricated structure of CHP, AHP FGD and other misc. Buildings (other than Main power House, Bunker and Control room), where all raw materials supply is in contractor scope. BOQ as mentioned in Sl.no.8.1 (b).</p> <p>The bidder can opt for quoting for 'Mode 1' or 'Mode 2' or both 'Mode 1 &amp; Mode 2'. Bidder shall mandatorily declare the same in <b>Annexure-D1 of TCC</b>. Bidder shall quote their price separately for Mode 1 &amp; Mode 2 and same shall be evaluated separately.</p> <p>Modality of award is described in Chapter VIII of TCC. Depending upon the selection of Modality, the tender shall be awarded. Only, related Terms and Condition shall be applicable for execution of award work.</p> <p>NOTE: Preparation of detailed drawing for fabrication is not in the scope of agency, in general.</p>
<b>2.2</b>	<p>Supply of finished factory fabricated structure at site as per BOM/Drawings. After receipt of Purchase Order, Vendor shall discuss with Project Manager/Construction Manager of BHEL regarding starting of structural fabrication job. On receipt of approved detailed drawings, successful Vendor will start fabrication job in approved "FABRICATION WORKSHOP / FACTORY" in line with approved drawings, specifications and quality plan. Vendor shall mobilize further resources at workshop as per requirement to commence the job of fabrication, testing, shot blasting, painting etc. to match schedule of the project.</p>
<b>2.3</b>	<p>All incidental works, not specified but reasonably implied and necessary for completion of scope of work shall be in the scope of agency.</p>
<b>2.4</b>	<p><b>For Mode 1:</b> BHEL will issue Raw material directly to vendor's work either from the BHEL Steel supplier or from any BHEL Source.</p> <p>Based on prior approval / instructions of BHEL and in line with BOQ, Vendor shall make their own arrangement for procurement of raw material in case the same is not available for issue from BHEL depending on the dispatch criticality. BHEL / NTPC shall clear the use of such materials. Vendor shall procure such material from approved source only. LR receipt of BHEL Steel supplier shall counter verified and signed by Vendor and BHEL resident engineer.</p> <p>BHEL shall supply the material to a vendor's factory (single location only) indicated by agency after issuance of Purchase order.</p>

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	<p>Vendor will have to receive &amp; unload the raw material from suppliers' vehicles using vendor's own T&amp;P and manpower at Vendor's facilities/works/factory.</p> <p>As per instruction of BHEL, Vendor shall load the excess fresh material, rejected material (for the reasons other than faulty workmanship of Vendor) and requisite off cut material on the trailer/trucks, arranged by BHEL for transportation.</p>
<b>2.5</b>	<p>Stacking, stock keeping, watch &amp; ward of the Material at Vendor's factory shall be in the scope of Vendor. Material shall be stored properly in order to avoid any foreign defect. Proper watch and ward shall be in place by vendor for the Raw material.</p>
<b>2.6</b>	<p>Vendor shall have in House weigh bridge facility or third party tie up within the factory vicinity of 5 KM. Such weighbridge capacity shall not be less than 40 MT. Weighment tolerance shall be 70 Kg for minimum truck load of 20 MT and above.</p> <p>For the material to be utilised for the subject work, Vendor must provide exclusive manpower for generation of Material Receipt Voucher (MRV). MRV format will be provided by BHEL during execution of the work. MRV will be duly verified by BHEL Resident engineer. Format printing shall be in vendor scope.</p>
<b>2.7</b>	<p>BHEL resident engineer shall duly verify the raw material received at Vendor's works.</p>
<b>2.8</b>	<p>The total quantity of steel required for the job will be calculated from the approved fabrication drawings including lugs. In case any such sectional weights are not available in the above documents, the manufacturer recommendation/BHEL Engineer instruction/Indian Standard Code recommendation shall be binding. BHEL reserves the right to reject any material not found satisfactory.</p>
<b>2.9</b>	<p>Vendor shall produce all relevant documents such as Material test certificate etc. In case vendor fails to correlate the supplied material with documents from approved source, vendor shall replace the material at no cost to BHEL. BHEL reserves the right to reject any material not found satisfactory.</p>
<b>2.10</b>	<p>Proper Office space with Desktop Computers/Laptop with Internet facility shall be provided to BHEL employees (02 Nos.) by successful Vendor for official use. Further, suitable transportation facility shall be arranged for BHEL Resident engineer for "To and Fro" movement from residing Location to Fabrication Location. Depending upon the availability of suitable accommodation, the resident engineer shall stay at a reasonable distance from fabrication location.</p>
<b>2.11</b>	<p>Fabrication, welding, destructive/non-destructive test and any other tests as per approved Quality plan and/or NTPC/BHEL requirement, shall be the liability of vendor.</p>
<b>2.12</b>	<p>Straightening, making cutting plan, cutting, bending, rolling, grinding, drilling, bolting, temporary pre assembly- full length column height (Trial assembly), edge preparation, preheating (min preheat and interpass temperature of 20 degree C for welding over 20 mm and up to 40 mm &amp; 66 degree C for welding over 40 mm and up to 63 mm &amp; 110 degree C for thickness over 63 mm &amp; use of low hydrogen/ radiogenic electrodes), post heating, testing of welders, inspection of welds, visual inspection, non-destructive and special testing, rectification and correction of defective welding works, production test plate, inspection and testing as per erection scheme shall be in scope of vendor.</p>
<b>2.13</b>	<p>All Materials to be procured from the NTPC approved sources only as detailed in Annexure E. Clause 4.0 of Annexure E-59.</p>
<b>2.14</b>	<p>Surface preparation and painting as per BHEL/NTPC specifications.</p>

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2.15	Preassembly of columns (2-3 pieces of 12M Length each column), Trial assembly of finished material at Vendor's works / factory as per BHEL instructions / approved drawings using Vendors T&P at his own cost. No separate cost will be paid for Trial Pre assembly activity. Vendors may quote considering all such hidden activity as extra in their rate price. BHEL/ NTPC may visit Vendor's factory for inspecting the Trial Pre assembly activity.
2.16	<p>Delivering finished fabricated products from factory to Project site as per BOQ of rate schedule, specification, drawings and instructions of the Engineer. Fabrication as per approved BOM / detailed Drawings and Application of Paint as per specification and Transportation till site (FOR destination basis).</p> <p>For material to be supplied by agency, unloading of material at site shall be in the scope of BHEL. BHEL shall unload the material in 48-72 hrs from the time of entry of trailer in the plant premises. In case the supplied material is not being unloaded within 72 hrs., for the reason not attributable to fabricator/transporter, agency shall be entitled for demurrage charges.</p> <p>a. Demurrage charges for Truck shall be Rs. 1000/days.</p> <p>b. Demurrage charges for all types of Trailers shall be Rs. 2000/days.</p>
2.17	BHEL/NTPC may visit fabrication shop for checking eligibility/competency of shop. Approval from BHEL/NTPC is required before start the fabrication job. In any discrepancy Vendor shall be complied as per BHEL/NTPC requirement at any stage of job.
2.18	<b><u>Shop Works:</u></b>
2.18.1	The steelwork shall be temporarily shop-erected complete or as directed by the Engineer so that accuracy of fit may be checked before dispatch. The parts shall be shop-erected with a sufficient number of parallel drifts to bring and keep the parts in place. In case of parts drilled or punched using steel jigs to make all similar parts interchangeable, the steelwork shall be shop erected in such a way as will facilitate the check of interchange ability.
2.18.2	Vendor must be possessing established fabrication work shop / factory equipped with all kinds of T&P's and other necessary requirement for supply of finished material as per specification at their own cost Tentative requirement of Factory is stipulated in Annexure - A. All other equipment and T&Ps (if required) for supply of finished material, shall be arranged by Vendor
2.18.3	After awards of work, BHEL at its discretion may increase/decrease the quantum of work depending upon the factors such as: Load on the vendor, Production capacity of the vendor and rate of production/performance by the vendor etc. Contractor shall be bound to execute such works as desired and as directed by BHEL engineer. The item rates & contract conditions shall remain unchanged for such works.
2.18.4	The work under this contract shall be carried out as per BOQ Cum Rate Schedule and in compliance of tender conditions including technical specifications and approved drawings/ documents.
2.19	<b>Specifications for Fabrication and Supply Contract</b>
2.19.1	<b>Mode 1:</b> Raw steel will be supplied by BHEL against <b>Bank Guarantee Equivalent to 100% of steel material value for rolling plan limit of supplied quantity</b> (on pro rata Basis) as the work will be carried out at vendor's premises. Raw steel will be



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	delivered to vendor's workshop/premises directly by BHEL. The Bank guarantee issued against free issue material shall be a rolling BG. Rolling Plan for each package has been defined in Annexure-C (Bank Guarantee Clause) of TCC.
<b>2.19.2</b>	In case the required quantities of steel are not dispatch-able by BHEL, Agency shall procure the material/raw steel from NTPC/BHEL approved source only.
<b>2.19.3</b>	Separate storage area shall be allotted by Vendor for BHEL Material. Separate engineer shall be allocated by vendor for BHEL Contract. BHEL will post resident engineer/BHEL employee for supervision of day to day works.
<b>2.19.4</b>	Items covered under this contract shall be subjected to Inspection / Testing and Quality Surveillance. The inspection agency shall at reasonable times, have access to vendor's works & Quality control records. All reasonable facilities required for carrying out the inspection and testing efficiently, shall be provided by the vendor, free of cost. The method of inspection shall be agreed upon in the Approved "Quality Plan" which shall form part of the contract. Wherever possible, standard quality plan, by way of minimum requirements, are included in the bid specification as a guideline.
<b>2.19.5</b>	The Vendor shall abide fully by all the clauses of Shop inspection and tests covered in Technical Specification. BHEL reserves the right to consider any stage of inspection / test as a "Hold Point", beyond which work shall not proceed without acceptance of that stage.
<b>2.19.6</b>	The minimum Inspection / Testing requirements shall conform to relevant codes /standards as well as Statutory Regulations applicable, whether or not specifically mentioned in the specification, in addition to those normally carried out by the vendor.
<b>2.19.7</b>	Wherever Customer / Consultant "Hold Points" are indicated in the approved Quality Plan an additional 10 days' notice, in addition to above, shall be given for Inspection / Testing.
<b>2.19.8</b>	Before sending written notice to the BHEL/NTPC's Inspection Agency, the Vendor's own inspection staff should have fully inspected / tested the item. If the visit of the Inspection Agency proves to be futile on account of the item not being ready for inspection / Testing or the same being rejected to reasons which could otherwise, have been detected during Vendor's own Inspection / Test, the cost incurred by Inspection Agency on such visits shall be borne by the vendor.
<b>2.19.9</b>	Approval or passing of Inspection / Test and thereby issue of the acceptance Certificates or waive of Inspection by the Inspection Agency shall not relieve the vendor of his responsibilities and obligations under the contract and also shall not bind BHEL to accept the item should it, on further tests after receipt at destination, erection / commissioning be found not complying with the Contract.
<b>2.19.10</b>	All necessary documents such as test reports, test certificates, test curves, stress relieving charts, radio graphic films and other non-destructive tests, copies of the welding procedure, welder qualification certificates and other documents in support of adherence to Quality plan shall be furnished to the Inspection agency. The Quality Assurance document consisting of certified copies of all of the above complied sequentially by the vendor shall be sent to BHEL prior to dispatch.
<b>2.19.11</b>	The vendor shall provide test pieces as required by Inspection agency to enable him to determine the Quality of Material to be used under the contract. If any test piece fails



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	to comply with the requirements the inspection agency may reject the whole material represented by the test piece.
<b>2.19.12</b>	In the event of inspection revealing poor quality of goods, BHEL shall be at liberty to specify additional Inspection / Test, required ascertaining Vendor's compliance with the equipment specification.
<b>2.19.13</b>	All welding shall be carried out in accordance with applicable codes or approved equal. Welding procedure and Welder's qualification shall be got approved. Welding consumables used shall be approved by the inspection agency.
<b>2.19.14</b>	Approved methods of radiographic, ultrasonic or other non-destructive testing as applicable shall be used for the welding of critical components / assembly. All defects shall be rectified by the supplier at no extra Cost.
<b>2.19.15</b>	If Considered necessary by BHEL Engineer or Engineer's representative, multiple pre assemblies shall be fully tested at Vendor's work prior to packing and dispatch to site.
<b>2.19.16</b>	None of the item shall be dispatched without the receipt of "Quality Report/Quality Surveillance Note" from the Inspection Agency as well as the written approval in the form of Material Dispatch Clearance Certificate (MDCC) unless specifically agreed.
<b>2.19.17</b>	All supplied fabricated structures shall be marked with clearly identifiable erection mark numbers (through hard punching with protective paint) as shown in the fabrication/ detailed drawings. This will be duly verified at site during material receipt based on which MRC shall be prepared.
<b>2.19.18</b>	To address any mismatch during erection stage, the successful Vendor shall deploy a technical person on continuous basis at site for proper co-ordination with various agencies so that problem is attended / rectified without any time gap. Vendor shall deploy adequate resources at site for coordination and rectification work (for the reason attributable to vendor) without any extra cost.
<b>2.19.19</b>	Material Despatch Clearance Certificate (MDCC) for Supply of Fabricated Structures to be issued by customer/BHEL before supply of finished material.
<b>2.19.20</b>	The affixing of Inspection Stamp on the item by the Inspection Agency is for the purpose of identification only and shall not be considered as a token of acceptance.
<b>2.19.21</b>	Unless the Inspection / Test is waived, the inspection agency shall attend the Inspection / Test within 15 days of the date of receipt of notice from the vendor, failing which the vendor may proceed with the Inspection / Test and shall forward duly certified copies of the Inspection / Test Reports. After successful completion of the Inspection / Test or receipt of Vendor's Test reports mentioned above, the Inspection agency shall issue within 15 days, the acceptance certificate.
<b>2.19.22</b>	If the tests were not witnessed by the Inspection Agency or his representative, the MDCC certificate would be issued within fifteen (15) days of the receipt of the test certificates by the Inspection Agency.
<b>2.20</b>	<b>Quality Plan</b>
<b>2.20.1</b>	The Quality Plan is a document, which presents in a tabular form the Quality control checks exercised by the vendor during the various stages of manufacture and dispatch in order to meet the requirements of this specification. This plan details, step by step, the operations, components and characteristics being controlled, method of exercising such controls, the importance (criticality) of the control (critical major or minor) with respect to the functioning of the item the extent to which the controls are exercised (100% samples, one per heat, etc.). Acceptance norms for the characteristics, method of maintaining records thereof as a proof of having exercised the control successfully,

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	the agency responsible for performing and witnessing the checks and for verifying the records thereof.
<b>2.20.2</b>	The Vendors shall furnish the Quality Plan for approval from BHEL/NTPC. In case the Standard Quality plans provided by BHEL, the Vendor shall furnish his Quality Plan strictly in line with the same.
<b>2.20.3</b>	Copies of Vendor's/Vendor's Collaborators catalogues/ drawings/ standards/ specifications/ procedures etc. as mentioned in reference document of the Quality Plan shall be furnished for approval.
<b>2.20.4</b>	In the Quality Plan, the Vendor shall give in detail, the quality control checks exercised by him during the various stages of fabrication / manufacture such as: <ul style="list-style-type: none"> <li>a) All bought out items and incoming material checks carried out at sources and on receipt.</li> <li>b) Process of manufacture/Fabrication i.e. welding, heat treatment etc.</li> <li>c) Manufacture/fabrication of various components, sub-assemblies and assembly.</li> <li>d) Final Inspection and Testing including Performance Test at shop.</li> <li>e) Surface preparation and painting.</li> <li>f) Packing, Marking (through hard punching with protective paint) and Dispatch.</li> </ul>
<b>2.20.5</b>	Inspection of packages shall be carried out by agency as per below Inspection category of packages: <ul style="list-style-type: none"> <li>a) Cat I: - Inspection shall be done jointly by NTPC, BHEL &amp; Successful Vendor.</li> <li>b) Cat-II: - Inspection shall be done by BHEL &amp; Successful Vendor.</li> <li>c) Cat-III: - Certificate of Compliance shall be furnished by Successful Vendor.</li> </ul> Please note, for Cat I & II items BHEL reserve the right to carry inspection by themselves or through nominated third party. For Inspection agency for various items, vendor may refer to Quality Plan.
<b>2.21</b>	<b>Material Dispatch Clearance Certificate (MDCC)</b>
<b>2.21.1</b>	When the tests have been satisfactorily completed at the vendor's works, the Inspection Agency shall issue a certificate to that effect within fifteen (15) days after completion of tests, but if the tests were not witnessed by the Inspection Agency or his representative, the certificate would be issued within fifteen (15) days of the receipt of the test certificates by the Inspection Agency.
<b>2.21.2</b>	BHEL/NTPC will issue MDCC to the Vendor based on the QS Note/Report from the Inspection Agency.
<b>2.21.3</b>	Vendor will not dispatch any material before issue of MDCC by BHEL.
<b>2.21.4</b>	The satisfactory completion of these tests or the issue of MDCC, shall not bind BHEL to accept the supply/equipment, should it, on further tests after erection, be found not to comply with the contract provisions. <ul style="list-style-type: none"> <li>a) For Cat-I item, MDCC shall be issued by BHEL/NTPC and it's the responsibility of vendor to arrange MDCC from BHEL/NTPC, and original MDCC shall be attached with Invoice by Vendor for claiming payment from BHEL.</li> <li>b) For Cat-II &amp; Cat-III items, MDCC shall be issued by NTPC/BHEL, which shall be valid for vendor payment.</li> </ul>
<b>2.22</b>	<b>GENERAL INSTRUCTION FOR DISPATCH</b>

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2.22.1	No equipment / material shall be dispatched without prior consent of BHEL. Vendor shall dispatch the equipment / material only after receipt of "Quality Report/ Quality Surveillance Note" and Material dispatch Clearance Certificate (MDCC) issued by BHEL.
2.22.2	Vendor shall notify in writing to site at least within 15 days in advance of shipment, the probable date, when the equipment / material shall be ready for dispatch.
2.22.3	<p>Immediately after the shipment is made, necessary shipping / transport documents shall be sent by the vendor in accordance with the instructions of BHEL. The shipping documents / transport documents shall comprise of the following:</p> <ol style="list-style-type: none"> <li>Railway Receipt / Lorry Receipt as applicable</li> <li>Freight invoice</li> <li>FOR Invoice</li> <li>Packing List (No of copies as required)</li> <li>Certificate of origin</li> <li>Letter to Insurer</li> <li>Quality Report/Quality surveillance note</li> </ol>
2.22.4	<p>The distribution procedure for the above documents shall be as per the "dispatch instructions".</p> <p><b>1) Consignee Address:</b> Construction Manager / BHEL Site Office, BHEL 2X660 MW, NTPC Talcher Project, Dist. Angul Orrisa.</p> <p>Note:</p> <ol style="list-style-type: none"> <li>Consignee address in LR should be strictly as per above.</li> <li>Seller / vendor to note that to effect "Sale in Transit", BHEL shall issue "Delivery Note" to the Transporter for transferring the ownership from BHEL to customer (NTPC).</li> <li>Delivery note shall be carried by transporter along with other dispatch documents.</li> </ol> <p><b>2) Road Permit Requirement:</b> As per requirement.</p> <p><b>3) Mode of Dispatch:</b> By Road</p> <p><b>Note:</b> It is Seller / vendor responsibility to ensure availability of vehicle well in advance for dispatch of material to meet contractual delivery requirement and as per instruction of BHEL engineer.</p> <p><b>4) Transit Insurance:</b> Transit insurance from supplier's works/warehouse to BHEL site stores shall be arranged by BHEL. Prior dispatch, intimation shall be issued to Insurance agency/underwriter of BHEL about the value of consignment, dispatch details, along with one set of documents consisting of LR/RR copy, packing list / Challan indicating the items dispatched (with their weights). A copy of above should be sent to BHEL site office (address same as consignee address). Upon dispatch of material, supplier has to immediately intimate underwriter of BHEL failing which transit loss if any, would be borne by supplier. Vendor shall obtain details of Insurance agency &amp; policy documents from BHEL prior to dispatch of first consignment of Fabricated material to site.</p> <p><b>5) Packing:</b></p> <ol style="list-style-type: none"> <li>The packing shall be in conformity with specification and shall be such as to ensure prevention of damages, corrosion, deterioration,</li> </ol>

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	<p>shortages, pilferage and loss in transit or storage.</p> <p>b. Packing list shall be submitted as per standard format along with advance set of documents for claiming payment which shall also indicate: -</p> <ol style="list-style-type: none"> <li>Packing size.</li> <li>Gross weight and net weight of each package.</li> <li>Contents of the package with quantity of each item separately.</li> </ol> <p><b>6) Transportation &amp; Freight Charges:</b></p> <ol style="list-style-type: none"> <li>All road dispatches shall be through the carriers, assigned in consultation with BHEL.</li> <li>Owing to any reason, in case the seller / vendor has to resort to a mode of transport other than what was contemplated, to keep up the delivery / completion schedule incurring extra expenditure, such extra expenditure shall be borne by the seller / vendor.</li> <li>Any charge against ODC consignment shall be borne by seller / vendor.</li> <li>Freight charges shall be borne by the seller / vendor.</li> </ol> <p>Any charges related to the transportation of fabricated material till site is to be borne by the seller / vendor.</p>
2.22.5	<p><b>Dispatch Documents required (to be furnished by vendor):</b></p> <p><b>A: For customer billing,</b> the vendor shall provide the following documents to BHEL-PSWR in 4 sets:</p> <ol style="list-style-type: none"> <li>Copy of vendor Invoice</li> <li>Copy of Packing List Indicating Quantity / Gross weight/Net Weight and NTPC approved BBU item no. wherever applicable against each item dispatched.</li> <li>MDCC (Original BHEL/NTPC MDCC, if applicable).</li> <li>CHP issued by BHEL/NTPC – Original (if applicable).</li> <li>Insurance intimation copy.</li> <li>Test certificate / Inspection Reports- Original.</li> </ol> <p><b>B: For vendor payments,</b> the following documents are required in 4 sets:</p> <ol style="list-style-type: none"> <li>GST Complaint Invoice (1 Original + 2 copies)</li> <li>Copy of insurance intimation letter / e-mail. (Intimation to Insurance agency to be sent on the same day of dispatch.)</li> <li>LR copy (consignee address shall be BHEL site)</li> <li>Packing List indicating item description/quantity/Net Weight (Design Weight) against each item dispatched – wherever applicable.</li> <li>Copy of Material Dispatch Clearance Certificate issued by BHEL/BHEL's Customer.</li> <li>Guarantee Certificate - Original</li> <li>Copy of Inspection report (IRs) – with relevant painting/protocols/SB remarks – Duly signed by BHEL QC inspector and fabricator with seal.</li> <li>Material test Certificate (MTC) (for raw material supplied by Vendor)</li> </ol>

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	<p>9. Hold Point Clearance issued by BHEL/BHEL's Customer (if any). In addition to the above, vendor may furnish mfg. clearance/drg/docs approval date for the purpose of determining contractual delivery for expeditious processing of Invoices.</p> <p><b>C: Checklist for submission of Bills:</b> Vendor should ensure that the following documents are submitted for bill processing to avoid any delay in processing of payment:</p> <ul style="list-style-type: none"><li>a) Invoice – duly signed by Vendor with seal.</li><li>b) Invoice Annexures - duly signed by Vendor with seal.</li><li>c) GST Invoice – Original for buyer and Duplicate for transporter copies</li><li>d) Original Inspection Reports (IRs) – with relevant painting/SB remarks and ODC details (if applicable) - duly signed by BHEL QC inspector and Vendor with sign &amp; seal.</li></ul>																					
2.22.6	<p><b>STEEL Specifications:</b> Agency has to procure the Structural Steel as per below technical specification basis: The total quantity of steel required for the work will be calculated from the approved, fabrication drawings, lugs etc. The measurement for payment as well as for accounting shall be based on the sectional weights as indicated in the following IS/BS/EN specifications.</p> <table><tr><th>S.N.</th><th>Name of Standard</th><th>Name of Section</th></tr><tr><td>1.</td><td>IS: 808-1964</td><td>Beams, Channels and Angles</td></tr><tr><td>2.</td><td>IS: 1730-1961</td><td>Plates, Sheets and Strips/Flats</td></tr><tr><td>3.</td><td>BS4-1: 1993</td><td>UB/UC sections</td></tr><tr><td>4.</td><td>IS: 12778/equivalence with EN-19-57</td><td>For NPB sections</td></tr><tr><td>5.</td><td>IS: 12778/equivalence with EN-53-62</td><td>For HE/WPB sections</td></tr><tr><td>6.</td><td>IS: 1786 or grade -1 of IS432 (Part-I)</td><td>Rounds including deformed high yield strength bars</td></tr></table>	S.N.	Name of Standard	Name of Section	1.	IS: 808-1964	Beams, Channels and Angles	2.	IS: 1730-1961	Plates, Sheets and Strips/Flats	3.	BS4-1: 1993	UB/UC sections	4.	IS: 12778/equivalence with EN-19-57	For NPB sections	5.	IS: 12778/equivalence with EN-53-62	For HE/WPB sections	6.	IS: 1786 or grade -1 of IS432 (Part-I)	Rounds including deformed high yield strength bars
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2.23	<p><b>MATERIAL RECEIPT CERTIFICATE:</b> The Seller/vendor shall arrange Material Receipt Certificate (MRC) at project site, duly signed by the BHEL/NTPC Site Engineer, after receipt of the material at site and its physical verification.</p>																					
2.24	<p><b>SHORTAGES/DAMAGES:</b> Any shortages or damages during transit or transportation to site shall be made good by the Seller/ Vendor at his risk and costs, to meet the project schedule. In case of faults/discrepancies in any material, component, sub-assembly, assembly, etc., the same shall be supplied/replenished free of cost to enable the equipment to be put in service. Shortages during transit shall also be replenished by Vendor.</p>																					

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<b>2.25</b>	<b>Raw Material issue and its Accountability:</b> The Vendor shall ensure Material Accounting within 365 days from date of issue of materials. This is a statutory requirement and must be strictly complied with. In case Material Accounting within 365 days from the date of first issue of raw material due to vendor's default, the amount payable by BHEL to Government (i.e. GST @ 18% of input material value + applicable interest for 365 days) will be recovered from the Vendor as penalty. The recovery/ penalty will be calculated separately for each material gate pass wherever the period crosses 365 days under a purchase order/ contract.
<b>2.26</b>	<b>Reconciliation of steel issued by BHEL (free of cost):</b>
<b>2.26.1</b>	All steel like structural steel as specified in relevant BOQ shall be issued free of cost by BHEL unless specified otherwise in BOQ for use in the work covered in this contract from BHEL stores/storage yard/BHEL direct issue upto Vendor shop. The Vendor shall collect these materials from BHEL at vendors work at his own cost and store the same at the work site or in his stores as per standard norms.
<b>2.26.2</b>	BHEL reserves the right to recover from the Vendor any loss arising out of damage/ theft or any other causes or during verification/stacking or at any time under the custody of the vendor.
<b>2.26.3</b>	Mode 1: Vendor shall maintain separate record for material supplied by BHEL and material procured by Vendor, for billing and reconciliation purpose.
<b>2.26.4</b>	The Vendor 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 drawing(s)/section(s) which delays the completion of work, such cases shall be recorded separately and shall be considered for time extension of contract.
<b>2.26.5</b>	Vendor 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.
<b>2.26.6</b>	The Vendor shall maintain proper store account for all the BHEL issued materials and shall give Three (03) copies of computerized reconciliation statement along with RA bill of such account showing total receipt, consumption and balance (section/Size details) at Vendor works to the BHEL. BHEL Engineer's certification for the reconciliation of steel shall be final. The detailed reconciliation (Size Wise or as required) shall be done at least once in every three months (03) or before submission of final bill which comes earlier.
<b>2.26.7</b>	Vendor shall also carryout in complete association with BHEL, the material management functions and execution like day-to-day update of materials, issued to vendor, accounting for surplus/scrap and material returned etc. These functions shall also be carried out through computerized system utilizing suitable software. Vendor shall engage experienced software personnel to associate on dedicated basis for efficient discharge of the same in time.
<b>2.26.8</b>	The Vendor shall solely be responsible for the safety & security of material after it is supplied to Vendor by the BHEL.
<b>2.26.9</b>	The Vendor shall satisfy himself of the quality and quantity of the materials at the time of taking delivery from BHEL deployed trucks. No claims whatsoever will be



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	entertained by BHEL because of quality or quantity after the materials are taken by the Vendor from BHEL deployed trucks.
<b>2.26.10</b>	Vendor during his indenting should specify the required dimension in order to minimize the scrap generation and utilizing the standard available sizes.
<b>2.26.11</b>	Following shall be limit for the quantity of BHEL issue materials that would be with the Vendor at any point of time when work is in progress (excluding what has already been incorporated in the works). <b>APPROX. QUANTITY IN VENDOR'S STORE:</b> Three Months of steel requirement.
<b>2.26.12</b>	The weights of P.O. items as per Specification/Drawing shall be the basis for accounting of the raw materials issued.
<b>2.26.13</b>	The material rejected as PDO (Part Disposition Order) due to faulty workmanship of Vendor shall entail recovery of the cost of prime material as per relevant penal clause. In addition, conversion and service charges shall also be recovered in case of part-processed item.
<b>2.26.14</b>	The material rejected as PDO (Part Disposition Order) due to reasons other than faulty workmanship of Vendor shall be returned to BHEL Stores, failing which recovery shall be made as per relevant penal clause.
<b>2.26.15</b>	The Vendor should properly utilize materials issued by BHEL/PSWR as per the drawings/QWIs (Quality Work Instructions) in order to meet design and quality requirements of the product.
<b>2.26.16</b>	After material issue, the Vendor should submit optimum cutting plan within 15 days from the date of material issue.
<b>2.26.17</b>	However, in working out such economic cutting plans, it is to be ensured that the details as prescribed in each QWIs are adhered to. All final cutting plans shall be retained at vendor's premises for a minimum period of 3 years from date of preparation. They should be made available whenever required by BHEL officials or representatives of BHEL.
<b>2.26.18</b>	Whenever fabrication is done without proper cutting plans, the excess issue over and above the net weight shall attract recovery as prime material as per relevant penal clause.
<b>2.26.19</b>	In case joint is specified in the cutting plan, necessary quality requirements such as WPS should be adhered to by the Vendor
<b>2.26.20</b>	Failure to return the prime / offcut material shall entail recovery of the value of material as fixed by BHEL. In addition, statutory taxes, duties and levies as applicable shall also be recovered.
<b>2.26.21</b>	Normally, all the indirect materials, falling within the scope of the Vendor for doing the job, is to be taken care of by the Vendor themselves.
<b>2.26.22</b>	<b>Provisional Material accounting method: -</b> (i) Agency shall submit the Provisional reconciliation statement along with RA Bill and applicable MDCC, MRC Detailed BOM for receipt of material at vendor works, detail of finished goods supplies and resident engineer certified material under work in progress and serviceable off cut material. In case of deviation from the reconciliation statement, amount any discrepancy such as weight mismatches etc. shall be settled in before final bill. (ii) Recovery towards unreturned balance material as per FMAS (Final Material Accounting Statement) shall be done as per BHEL norms along with applicable



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	<p>statutory levies from the vendor. Hence, any correction after the generation of the FMAS shall not be entertained. After the issue of FMAS, the purchase order shall be treated as closed in all respects; therefore, requests toward refund of recovery shall not be entertained.</p> <p>(iii) The Vendor shall be responsible for prompt material accounting. Repeated occurrence of inordinate delay in returning and settling the material accounts shall entitle BHEL the right to terminate the contract forthwith or to impose a temporary suspension on further loading at the discretion of BHEL.</p>												
2.27	<p><b>RETURN OF MATERIALS</b></p> <p>Return Structural Steel including Scrap: All surplus steel will be taken back on weightment basis. Surplus, unused and untampered steel shall be sorted section-wise and returned separately which will be returned by vendor. As regard to the scrap generated will be the property of Vendor &amp; the amount for same will be recovered from the Vendor at the rate as per BHEL scrap recovery rate policy as mentioned below.</p>												
2.28	<p><b>SCRAP RECOVERY RATES:</b></p> <p>For all the categories of scrap recovery, quarterly floating rate shall be followed based on the latest disposal rate of BHEL/Joint Plant Committee along with GST and other statutory levies, if any. Wherever the latest scrap rates are not available the existing rates available as on date of recovery shall prevail. Recovery shall be based on Scrap Rate as on the date of last GR posting for the P.O. Subsequent revision of scrap rates shall be updated every financial quarter. The revised scrap rates will be updated during first week of every financial quarter (i.e.) in the month of Apr, Jul, Oct &amp; Jan.</p>												
2.29	<p><b>Recovery of Materials (Penal Rates):</b></p> <p>If wastage exceeds the specified limit in Special Condition of Contract SCC, the recovery of excess wastage shall be made from RA Bills as per following penal rates along with GST and other statutory levies, if any, where material Supply is in BHEL SCOPE.</p> <table><tr><th>S N</th><th>Item</th><th>Penal rate (Rs)</th></tr><tr><td>P-1</td><td>Chequered Plates( if supplied by BHEL) and MS plates</td><td>65,000 per MT</td></tr><tr><td>P-2</td><td>MS Flats, beams, channel, angels etc. (Rolled Sections)</td><td>60,000 per MT</td></tr><tr><td>P-3</td><td>Stainless Steel Plates</td><td>2,30,000 per MT</td></tr></table> <p><b>NOTE:</b> Please note penal rate will be the ‘actual market price to BHEL’ or ‘rates mentioned above’, whichever is higher along with 5% overheads.</p>	S N	Item	Penal rate (Rs)	P-1	Chequered Plates( if supplied by BHEL) and MS plates	65,000 per MT	P-2	MS Flats, beams, channel, angels etc. (Rolled Sections)	60,000 per MT	P-3	Stainless Steel Plates	2,30,000 per MT
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2.30	<p><b>Custody of materials issued by BHEL to Vendor:</b></p>												
2.30.1	<p>The raw material issued to the Vendor in connection with the fabrication contract shall remain the property of BHEL PSWR, Nagpur. The Vendor shall use the above materials only for the execution of BHEL’s POs for which the materials have been issued, and for no other purpose whatsoever. The Vendor shall be responsible for the full value thereof to be assessed by BHEL PSWR, Nagpur, whose decision shall be binding on the Vendor.</p>												
2.30.2	<p>The Vendor shall be liable for the loss or damage to such property from whatever the cause may be while such property is in the possession or under the control of the Vendor, their employees, workmen or agents or any other person connected with the</p>												

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter - II: Scope of Work

	Vendor. All the materials of BHEL shall under no circumstance be sold/hypothecated to any bank or to any lending institution or to any party whomsoever. Such materials should not be shown as the Vendor's assets in any of the statements of the Vendor to any party.
<b>2.30.3</b>	The Vendor shall produce the materials supplied by BHEL in the form of raw material, semi-finished structure to BHEL officials visiting the Vendor's unit for verification purposes.
<b>2.30.4</b>	Inventory statement has to be submitted every month by the Vendor for the materials issued. If the Vendor fails to produce or properly account the materials so issued, BHEL shall have the right to take further action as deemed fit including recovery of the value of the materials along with the respective administrative charges and statutory levies from the running bills of the Vendor and/or temporary suspension of load and/or termination of contract and/or de-listing.
<b>2.30.5</b>	Any act of Vendor resulting in dishonest misappropriation or conversion of the materials so issued for his own use shall constitute the offence of Civil / Criminal Breach of Trust under Indian Penal Code and/or such other offences under any other provisions of law and the Contractee (BHEL) shall have every right to proceed against the Vendor under Civil/Criminal Law in order to ensure proper punishment to such perpetrator(s) for the said offence(s). In such cases, BHEL shall take all necessary steps to recover the material available with those firms.
<b>2.30.6</b>	Wherever availability of material becomes critical for certain work orders, BHEL shall transfer the balance material available with the Vendor including the scrap sizes from one Vendor to the other. For this, necessary credit shall be given during material accounting. The material transfer emanating from BHEL is to be honoured immediately or otherwise, recovery shall be made at the prime material cost. Any difficulty for affecting such transfer shall be brought to the knowledge of BHEL officials immediately
<b>2.31</b>	<b>GUARANTEE FOR THE FINISHED GOODS* (Defect Liability of the fabricated material)</b> The Vendor shall warrant that the fabrications comply fully with the drawings and other technical conditions specified by BHEL. If the fabrications are found defective owing to faulty workmanship/incomplete work within a period of <b>eighteen months</b> from the date of dispatch of last consignment, the Vendor shall do the necessary repair/rework or replace the defective items free of cost. Alternatively, the rework/replacement charges shall be recovered, if the same has been carried out by BHEL as per tender condition.
<b>2.32</b>	<b>Specification for Detailed drawing Preparation</b>
<b>2.32.1</b>	Successful bidder to engage detailer as per following scope in line with BOQ: - 1. As per specific instruction from BHEL, Agency has to prepare the detailed drawings on the basis of the GA Design drawing provided by the BHEL. 2. Successful bidder shall hire the detailer agencies and submit the credentials of the drawing detailer agencies to BHEL for review & approval. Only approved agency to be engaged for drawing detailing work. 3. Detailed scope associated with drawing detailing is as follows: a. Preparation and checking of 3D model of bolted structure in latest licensed version of TEKLA. b. TEKLA model required to be submitted for review and approval at every update or as and when required by BHEL.

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter - II: Scope of Work

	<ul style="list-style-type: none"> <li>c. Design &amp; Preparation and checking of bolted connection details of structure.</li> <li>d. Preparation and checking of detailed fabrication drawings of bolted structure in latest version of TEKLA. Drawing should contain Detailed BOM separately for each DU. Bolt summary should also be provided in each drawing.</li> <li>e. Preparation of consolidated BOM, consolidated fasteners summary in EXCEL format, as per the formats requested by BHEL.</li> <li>f. Scope of work includes the Built-up columns, Roof girders, Floor beams &amp; bracings, Wall Beams, Cladding, staircases, platforms, Elevator, pump houses, Silo &amp; Silo structures, transfer points, Equipment handling structures, tanks, BOP structures etc Cable trays &amp; Pipe Racks, pipe conveyors, belt conveyors, Duct &amp; duct supporting structures, Tanks, control rooms, sheds, workshops, structural buildings etc.</li> <li>g. ALL feedbacks or corrections suggested by the approving authority shall be implemented by the vendor until the drawings are approved.</li> <li>h. It is the detailing vendor responsibility to ensure completeness and correctness of drawing in all respects before the fabrication and erection of structure without any commercial implications.</li> <li>i. If any GA drawing revised, agency has to do the required changes in detailed drawings without any additional cost to BHEL.</li> <li>j. Agency has to share the all connection details drawings to BHEL.</li> <li>k. Agency has to submit the shipping list with DU/Mark Nos.</li> <li>l. Fabricating Agency will share the unpriced PO copy of the detailer agency to BHEL.</li> </ul>
<b>2.33</b>	<b>Contents of detailed drawing to be prepared by the vendor</b>
<b>2.33.1</b>	<p>Successful bidder shall execute as per following scope, in line with the instruction of BHEL.</p> <ul style="list-style-type: none"> <li>a. Fabrication details with all required views. Grid Marks to be shown.</li> <li>b. Detail views of all items.</li> <li>c. Erection and Shop welding symbols as indicated in input drawing.</li> <li>d. Bolt opening Dimensions should be given with respect to working point.</li> <li>e. Table for fasteners with size Grade and Quantity.</li> <li>f. BOM as per formats shall be given by BHEL during execution stage.</li> <li>g. It should contain net weight of raw materials used.</li> <li>h. Erection mark should be assigned as per standard Grid nomenclature for easy identification. Each erection mark should be assigned with a DU number.</li> <li>i. DU number should be such that it indicates the site erection sequence.</li> <li>j. BOM should contain details separately for each erection mark.</li> <li>k. Drawing numbers shall be as per the format specified by BHEL, which will be communicated along with PO.</li> <li>l. Wherever critical to quality requirement is there, the same should be indicated with a box encircling letter "C".</li> <li>m. Plate cutting, rolling plan and Transportation stiffener shall be provided (wherever required).</li> <li>n. If the detailed engineering has been done in more than a single drawing sheet, each drawing should have the reference to other drawing sheets.</li> <li>o. Fabrication and erection Notes are to be clearly indicated in the drawing.</li> <li>p. All drawings should indicate the reference of erection drawing number and GA/RFC drawing number.</li> </ul>
<b>2.34</b>	<b>Connection Design</b>
<b>2.34.1</b>	<p>Successful bidder shall execute as per following scope, in line with the instruction of BHEL.</p> <ul style="list-style-type: none"> <li>a. Detailed report showing design details of all connections shall be provided along</li> </ul>

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter - II: Scope of Work

	<p>with detailed drawings for approval.</p> <p>b. Connection design report should be complete in all aspects and include design of splice plate thickness, gusset plate thickness, No. of bolts, Bolt size, Weld length and weld size etc.</p> <p>c. Connection design will be done as per IS 800 : 2007 or equivalent standard.</p>
<b>2.35</b>	<b>Final Structure Report</b>
<b>2.35.1</b>	<p>Successful bidder shall execute as per following scope, in line with the instruction of BHEL.</p> <p>a. Report should be provided in Excel Format for each structure separately as per latest formats shared by BHEL.</p> <p>b. It should contain DU/Erection mark list, showing Net weight, quantity required, drawing number, Transport limits (LxBxH), Quality category, Surface area.</p> <p>c. Complete BOM of all fabrication drawings in one sheet.</p> <p>d. Total raw material summary.</p> <p>e. Complete Fasteners of all fabrication drawings.</p> <p>f. Total Fasteners summary.</p>
<b>2.36</b>	<b>Deliverables from Vendor</b>
<b>2.36.1</b>	<p>Successful bidder shall execute as per following scope, in line with the instruction of BHEL.</p> <p>a. Submission of 3D model.</p> <p>b. Submission of proof of checking of 3D model.</p> <p>c. Submission of Detailed fabrication drawings.</p> <p>d. Submission of Detailed connection design report for all connections.</p> <p>e. Submission of Final Structure Report.</p> <p>f. Submission of revised/corrected final drawings after BHEL feedback.</p> <p>g. All above data should be transferred through digital mode.</p> <p>h. The detailer engaged by the fabricator shall/may be required to visit BHEL PEM/ISG office at Noida/Bengaluru for discussion review of submitted drawings for expeditious approval. The visit shall be as per requirement (at least monthly once). All expenses for such visit shall be included in Price/Rate Quoted.</p>

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## Chapter - III: Time Schedule

### 3.1 TIME SCHEDULE

- 3.1.1 After receipt of Purchase Order, Contractor shall discuss with Construction Manager/ Project Manager regarding initial start of the work and shall submit a detailed plan for execution of work within the Contractual schedule.
- 3.1.2 Contractor shall deploy adequate resources as per requirement to commence the work of fabrication, testing, shot blasting, painting and dispatch to Project site etc. to match schedule of the project.
- 3.1.3 The contractor shall complete all the works in the scope of this contract within the contract period. Pending points identified by the customer/BHEL, are to be liquidated during the contract period itself.
- 3.1.4 Based on the project requirement and availability of inputs, contractor may have to advance the start of fabrication activity of other area after getting clearance from Project Manager/Construction Manager.
- 3.1.5 Zero date and tentative schedule: -**
- For Mode 1:** 'Date of receipt of first structural steel (free issue material) consignment of material at vendor works' and 'receipt of first detailed drawing' whichever is later, shall be reckoned as the zero date of the contract. Vendor must start preparatory action on receipt of Purchase Order.
- For Mode 2:** Date of receipt of first detailed drawing by contractor shall be reckoned as the zero date of the contract. Vendor must start preparatory action on receipt of Purchase Order.
- 3.1.6 The vendor has to subsequently augment his resources in such a manner that the entire work is completed within contractual schedule. Fabrication of entire structures as per scope including surface preparation and application of finish paint shall be completed within the contractual schedule as mentioned hereunder, from the date of start of work/Zero date.

S.No.	Packages	Contractual Schedule (Month)
1.	<b>Package A:</b> Coal Handling plant Structures	18 Months
2.	<b>Package B:</b> Ash Handling plant structures	18 Months
3.	<b>Package C:</b> FGD Structural Buildings, silos, CHP TP-2 & AHP Pipe rack	18 Months

#### 3.1.7 Priority Schedule of important structural buildings:

Sl No	Name of Structural Building/System Package A	Tentative supply completion schedule	Tentative Weight (MT)
1	Transfer Point-1	09 Month	1300
2	Track Hopper	18 Month	850
3	Conv. 1 A/B	09 Month	327
4	Conv. 2 A/B	09 Month	600
5	Conv. 3 A/B	06 Month	160
6	Conv. 4 A/B	05 Month	1602
7	Conv. 5 A/B	13 Month	1209
8	Conv. 6	12 Month	359
9	Cable Rack	18 Month	1395
10	MISC. Structure 1	10 month	100
11	MISC. Structure 2	12 month	100

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Sl No	Name of Structural Building/System Package A	Tentative supply completion schedule	Tentative Weight (MT)
12	Dust Suppression Pump House	16 month	125
13	Compressor House	12 month	15
14	Bull Dozer Shed	18 month	95
15	Drive House	12 month	55
16	CHP workshop building	18 month	25
<b>Total</b>			<b>8317</b>

Sl No	Name of Structural Building/System Package B	Tentative supply completion schedule	Tentative Weight (MT)
1	Pipe Rack	06 month to 18 month	2475
2	Cable Rack	14 month	310
3	Compressor House-1	06 month	180
4	Compressor House-2	06 month	80
5	Ash Bagging Shed	15 month	275
6	Silo utility Building	12 month	30
7	Ash Water Pump House	08 month	50
8	Ash Slurry Pump House	10 month	50
9	FA Silo	10 month	3322
10	Intermediate silo	10 month	580
11	MISC. Structure 1	16 month	50
12	MISC. Structure 2	16 month	50
<b>Total</b>			<b>7452</b>

Sl No	Name of Structural Building/System Package C	Tentative supply completion schedule	Tentative Weight (MT)
1	CHP - Transfer Point-2	04 Month	725
2	AHP - Pipe Rack	06 month to 18 month	1200
3	LS Crusher House	08 month	1850
4	LTP-1	10 month	170
5	DE Structure & Drive Floor	10 month	100
6	Lime silo	11 month	2000
7	LBC 1 A/B	14 month	225
8	LBC 2 A/B	14 month	60
9	GH Conv. 1 A/B	16 month	15
10	Gypsum Shed	16 month	168
11	Misc. Structure	18 month	50
<b>Total</b>			<b>6563</b>



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## Chapter - III: Time Schedule

- 3.1.8 Inputs for fabrication work such as Drawings/materials, shall be provided progressively.
- 3.1.9 Vendor has to engage adequate resources to meet BHEL's commitments to their customer as indicated from time to time. In the event the Vendor fails to respond to these requirements, BHEL shall take appropriate actions to meet customer's commitments in line with the provisions of General Conditions of Contract.
- 3.1.10 BHEL at its discretion may increase/decrease the quantum of work depending upon the factors such as: 'Load on the vendor', 'Production capacity of the vendor' and 'rate of production/performance by the vendor' etc. Accordingly, time schedule shall be adjusted on pro rata basis.

### 3.2 Package wise Bill of Quantities:

ST NO	Item Description	Unit	Quantity		
			Package A	Package B	Package C
2300	STRUCTURAL WORKS: Structural steel works including all labour, material (unless otherwise specified in BOQ/contract specification), equipments unless otherwise specified, transportation, handling etc. at all level as per specification, drawings and as directed by engineer - in - charge.				
A2301	Fabrication and supply of structures (shop fabricated in customer approved shop as per specification including applying primer coat, intermediate coat and final coat and painting as per applicable corrosivity class mentioned in specification) with mild steel rolled section / Medium and High Tensile structural steel/ built up section / combination of both conforming to IS:2062, pipes conforming to IS:1161/ IS:1239, tubular sections confirming to IS 4923, chequered plate conforming to IS: 3052, mild steel rounds, monorails, stays, safety chains, ladders, MS gratings (to be cut & fabricated from MS plates supplied in standard available sizes ) including in bunker area etc. in columns, beams, gantry girders, silos, hoppers, roof trusses, portals, laced purlins, space frames, hangers, struts, monorails, galleries, stiffeners, wall beams, sheeting runners, brackets, stub columns, bracings, cleats, trestles, base plates, splice plates, chequered plate flooring, decking and seal plates, steel frame grid over false ceiling, walkway platforms, ladders, stairs, stringers, treads, hood for ground conveyors, monorail doors, stools, debris chutes, landings, hand-rails etc including bunker area stools, gratings, monorails, platforms, collection of steel from stores, fabrication, straightening, cutting, bending, rolling, grinding, machining, drilling, welding, electrodes and other consumables, alignment, erection bolts & nuts (weight of erection bolts, nuts and welds not payable), assembly, edge				



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## Chapter - III: Time Schedule

ST NO	Item Description	Unit	Quantity		
			Package A	Package B	Package C
	preparation, preheating (min preheat and interpass temperature of 200 C for welding over 20 mm and upto 40 mm & 660 C for welding over 40 mm and upto 63 mm & 1100 C for thickness over 63 mm) & use of low hydrogen / radiogenic electrodes, post heating, testing of welders, inspection of welds, visual inspection, non-destructive and special testing, rectification and correction of defective welding works, production test plate, inspection and testing, erection scheme, protection against damage in transit, stability of structures, installation of temporary structures, setting column bases, surface preparation by means of manual or mechanical power tools as per IS:1477 part 1, touch-up painting, rectification, dismantling and removal of all temporary structures (weight of temporary structures not payable), return of surplus / waste steel materials to store etc all complete. Quality A/BR (Semi killed/killed) for Rolled section and B0 for plates (shall be tested for impact resistance at Room temperature), conforming to IS 2062. Plates beyond 12mm thickness and up to 40mm thickness shall be normalized rolled. Plates beyond 40mm thickness shall be vacuum degassed & furnace normalized and shall also be 100% ultrasonically tested as per ASTM –A578 level BS2.				
a)/ b)	Grade of Steel : E250/E350/Square and Rectangular Tubular Sections	MT	8317	7452	6563
B23 01	Detailed drawing preparation based on Input design drawings provided by BHEL/PEM & ISG and getting approval from BHEL PEM, BHEL ISG /BHEL customer. It includes connection design & preparation of fabrication drgs (Modelling in 3D software like TEKLA and model submission). Including appointment of a separate agency, approved by BHEL, for review and approval of fabrication drgs, in consultation with BHEL.	MT	250	250	250
A23 02	Extra over ST NO. C2301 for <b>blast cleaning</b> of steel structures to near white metal surface (Sa 2 1/2) and applying coat of two component moisture curing <b>zinc (ethyl) Silicate primer</b> (solid by volume Minimum 60+/-2% & zinc dust % on dry film minimum 80 %). Zinc dust composition and properties shall be Type-II as per ASTM D520-00. Primer of <b>minimum 70 micron DFT</b> shall be applied over shot blast cleaned surface including touch-up painting etc all complete. Primer coat shall be applied in Shop immediately after blast cleaning by airless spray technique all complete.	MT	8317	7452	6563

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter - III: Time Schedule

ST NO	Item Description	Unit	Quantity		
			Package A	Package B	Package C
A23 05	Providing Intermediate coat of two component <b>Polyamide cured epoxy with MIO Content</b> (containing lamellar MIO minimum 30% on pigment, solid by volume minimum 80% $\pm 2\%$ ) of <b>minimum 100-micron DFT</b> . This coat shall be applied in shop after an interval of minimum 24 hours (from the application of primer coat) by airless spray technique. Colour as approved by the Employer, including protection and cleaning, scaffolding etc. all complete as per specification for all structures.	MT	8317	7452	6563
B23 05	Providing Finish coat of <b>Two-pack aliphatic Isocyanate cured acrylic finish paint</b> (solid by volume minimum 55% $\pm 2\%$ ) with Gloss retention (SSPC Paint Spec No 36, ASTM D 4587, D 2244, D 523) of Level 2 (after minimum 1000 hours exposure, Gloss loss less than 30 and colour change less than 2.0 $\Delta E$ ) and <b>minimum 70 micron DFT</b> . This coat shall be applied shop after an interval of minimum 10 hours and within six (6) months (from the completion of Intermediate coat), Colour and shade of the coat shall be as approved by the Employer, including protection and cleaning, scaffolding etc. all complete as per specification for all structures .	MT	8317	7452	6563

### Note:

1. The above quantities are tentative and may vary, BHEL reserves the right for allocation of tonnage to the agencies as per requirements.
2. Quantity Variation limit:  $\pm 30\%$ .
3. No compensation shall be given to the Fabricator; in case the final executed work is below 30% of awarded quantities.
4. Tentative quantity for Each package is mentioned hereunder:

S.No.	Package	Tentative Quantity (MT)
1.	<b>Package A:</b> Coal Handling plant Structures	8317 MT
2.	<b>Package B:</b> Ash Handling plant structures	7452 MT
3.	<b>Package C:</b> FGD Structural Buildings, silos, CHP TP-2 & AHP Pipe rack	6563 MT

**Detailed L-2 Schedule, including inputs requirement dates from BHEL, shall be prepared and submitted by Vendor for approval of BHEL.**

In order to meet above schedule in general, and any other intermediate targets set, to meet customer/project schedule requirements, vendor shall arrange & augment all necessary resources from time to time on the instructions of BHEL.

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter - IV: Terms of Payment

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### 4.1 Terms of Payment: -

The progressive payment for supply on accepted price of contract value will be released as per the break up given hereinafter: -

### Stages of progressive pro-rata payments

#### 4.2 Payment shall be released as mentioned below after submission of following documents:

- 1) 95% payment (excluding GST) against RA Bill as per Billing schedule/Price Bid shall be released within 45 days after receipt & acceptance of material at site and submission of following documents
  - a) GST Complaint Invoice (1 Original + 2 copies)
  - b) Copy of insurance intimation letter / e-mail. (Intimation to Insurance agency to be sent on the same day of dispatch.)
  - c) LR copy (consignee address shall be BHEL site)
  - d) Packing List indicating item description/quantity/Net Weight (Design Weight) against each item dispatched – wherever applicable.
  - e) Original Material Dispatch Clearance Certificate issued by BHEL/BHEL's Customer.
  - f) Guarantee Certificate - Original
  - g) Material Receipt certificate by BHEL/site.
  - h) Original Inspection report (IRs) – with relevant painting/protocols/SB remarks – Duly signed by BHEL QC inspector and fabricator with seal.
  - i) Material test Certificate (MTC) (for raw material supplied by Vendor)
  - j) Hold Point Clearance issued by BHEL/BHEL's Customer (if any).
  - k) Material Reconciliation (Applicable for Mode 1).
- 2) Retention Amount: Balance 5% payment shall be released after successful completion of supply and along with last RA Bill.

#### NOTE:

1. Agency shall be allowed to raise two RA bills in a month.
2. On specific request of contractor, the retention amount can be released against submission of Bank Guarantee (BG) of 5% of Contract value (Format for BG is available with tender document). Also, upon submission of the aforementioned BG further deduction of 5% from RA Bill shall not be made. BG shall be kept valid for a period of Contract duration and Extension if any.

#### 4.3 Applicable GST shall be released upon compliance of following documents: Vendor has to declare such Invoice in their GSTR-1 & has to pay the tax to the Government by filing GSTR-3B or any other return/form for payment of tax so that Vendor's invoice details appear in BHEL's GSTR-2A. Payment may not be released if above is not complied & invoice details do not appear in BHEL's GSTR-2A.

#### 4.4 Paying Authority shall be **Construction Manager, BHEL 2X660 MW, NTPC Talcher Project, Dist. Angul Orrisa.**

### 4.5 Performance Security Clause:

- a) Performance Security shall be 5% of Contract value.
- b) In case of increase in contract value, additional 5% of differential/increased amount shall be submitted by Contractor before payment of next RA Bill due.
- c) Performance Security may be accepted in the following forms: -
  - i. Cash (as permissible under the extant Income Tax Act).
  - ii. Local cheques of Scheduled Banks (subject to realization)/ Pay Order/ Demand Draft/ Electronic Fund Transfer in favour of BHEL.
  - iii. Securities available from Indian Post offices such as National Savings Certificates, Kisan Vikas Patras etc. (held in the name of Contractor furnishing the security and duly endorsed/ hypothecated / pledged, as applicable, in favour of BHEL).
  - iv. Bank Guarantee from Scheduled Banks/ Public Financial Institutions as defined in the Companies Act. The Bank Guarantee format for Performance Security Amount shall be in the prescribed formats. The validity of BG shall be initially for the contract period + Performance guarantee period of 18 months. The BG shall be extended up to completion of Performance guarantee period from the date of supply of last consignment.
  - v. Fixed Deposit Receipt issued by Scheduled Banks/ Public Financial Institutions as defined in the Companies Act (FDR should be in the name of the Contractor, a/c BHEL).
  - vi. Insurance Surety Bonds.
- d) BHEL will not be liable or responsible in any manner for the collection of interest or renewal of the documents or in any other matter connected therewith.
- e) Refund of Performance Security amount shall be released after completion of Performance Guarantee period and after deduction of all expenses/ other amounts due to BHEL under the contract/ other contracts entered into with them (contractor) by BHEL.

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter - V: Welding & Radiography

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### **5.0 WELDING, RADIOGRAPHY AND OTHER NON-DESTRUCTIVE TESTING, POST WELD HEAT TREATMENT**

#### **5.1 WELDING:**

5.1.1 INSTALLATION OF EQUIPMENT INVOLVES GOOD QUALITY WELDING, NDE CHECKS, POST WELD HEAT TREATMENT ETC. CONTRACTOR'S PERSONNEL ENGAGED SHOULD HAVE ADEQUATE QUALIFICATION ON THE ABOVE WORKS.

5.1.2 THE METHOD OF WELDING WILL BE INDICATED IN THE DETAILED DRAWING/DOCUMENTS. BHEL ENGINEER WILL HAVE THE OPTION OF CHANGING THE METHOD OF WELDING AS PER SITE/CUSTOMER REQUIREMENT.

5.1.3 BEFORE ANY WELDER IS ENGAGED ON WORK, HE SHALL BE TESTED AND QUALIFIED BY BHEL/ CUSTOMER, THOUGH THEY MAY POSSESS THE PREVIOUS CERTIFICATE. BHEL RESERVES THE RIGHT TO REJECT ANY WELDER WITHOUT ASSIGNING ANY REASON. ALL THE EXPENDITURE IN TESTING/QUALIFICATION OF THE CONTRACTOR'S WELDER SHALL BE BORNE BY CONTRACTOR.

5.1.4 UNSATISFACTORY AND CONTINUOUS POOR PERFORMANCE MAY RESULT IN DISCONTINUATION OF CONCERNED WELDER.

5.1.5 THE WELDED SURFACE SHALL BE CLEANED OF SLAG AND PAINTED WITH PRIMER PAINT TO PREVENT RUSTING, CORROSION. FOR THESE CONSUMABLES LIKE PAINT /PRIMER ETC WILL BE IN THE CONTRACTOR'S SCOPE.

5.1.6 WELDING ELECTRODES HAVE TO BE STORED IN ENCLOSURES HAVING TEMPERATURE AND HUMIDITY CONTROL ARRANGEMENTS. THIS ENCLOSURE SHALL MEET BHEL SPECIFICATIONS.

5.1.7 WELDING ELECTRODES, PRIOR TO THEIR USE, CALL FOR BAKING FOR SPECIFIED PERIOD AND WILL HAVE TO BE HELD AT SPECIFIED TEMPERATURE FOR SPECIFIED PERIOD. ALSO, DURING EXECUTION, THE WELDING ELECTRODES HAVE TO BE CARRIED IN PORTABLE OVENS.

#### **5.2 NON DESTRUCTIVE EXAMINATION:**

5.2.1 CONTRACTOR SHALL PROVIDE ALL RESOURCES AND MAKE ALL ARRANGEMENTS FOR THE RADIOGRAPHIC EXAMINATION OF WELDS FOR THIS WORK. FOR REASONS OF SAFETY, INVARIABLY THE RADIOGRAPHY WORK WILL BE CARRIED OUT AFTER THE NORMAL WORKING HOURS AND CLOSE OF OTHER SITE ACTIVITIES ONLY. IN THIS REGARD, THE CONTRACTOR HAS TO ADHERE TO THE SAFETY RULES / REGULATIONS LAID BY BARC AUTHORITIES FROM TIME TO TIME.

5.2.2 RADIOGRAPHY INSPECTION OF WELDS SHALL BE PERFORMED IN ACCORDANCE WITH REQUIREMENTS AND RECOMMENDATION OF BHEL ENGINEER. THE MINIMUM QUANTUM OF RADIOGRAPHIC INSPECTION SHALL BE AS PER PROVISION OF BHEL'S DOCUMENTS.

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter - V: Welding & Radiography

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THEY MAY, HOWEVER BE INCREASED DEPENDING UPON THE PERFORMANCE OF THE INDIVIDUAL WELDER AT THE DISCRETION OF BHEL ENGINEER/BOILER INSPECTING AUTHORITY. VENDOR SHALL ALSO ARRANGE THE UT EQUIPMENT WITH RECORDING FACILITY AT HIS OWN COST. UT SHALL BE DONE AS PER REQUIREMENT OF BHEL / CLIENT. RECORDS OF UT SHALL BE PRODUCED & SUBMITTED TO AS PER SITE REQUIREMENT.

- 5.2.3 ALL X-RAY / GAMMA RAY FILMS OF WELD JOINTS SHALL BE PRESERVED PROPERLY AND BE HANDED OVER TO BHEL.
- 5.2.4 THE FIELD WELDED JOINTS SHALL BE SUBJECT TO DYE-PENETRANT/MPT/RT/ OTHER NON- DESTRUCTIVE EXAMINATION AS SPECIFIED IN THE RESPECTIVE ENGINEERING DOCUMENTS/ AS INSTRUCTED BY BHEL.
- 5.2.5 WHERE REQUIRED, SURFACE PREPARATION, LIKE SMOOTH GRINDING OF WELDED AREA, PRIOR TO RADIOGRAPHY SHALL BE DONE. IT MAY ALSO BECOME NECESSARY TO ADOPT INTER-LAYER RADIOGRAPHY/MPT/UT DEPENDING UPON THE SITE/ TECHNICAL REQUIREMENT NECESSITATING INTERRUPTIONS IN CONTINUITY OF THE WORK AND MAKING NECESSARY ARRANGEMENTS FOR CARRYING OUT THE ABOVE WORK. THE CONTRACTOR SHALL TAKE ALL THIS INTO ACCOUNT IN HIS OFFER. THE REQUIRED NDT METHOD/PROCEDURE WILL BE DECIDED BY BHEL ENGINEER AT SITE.
- 5.2.6 FOR CARRYING OUT ULTRASONIC TESTING OF WELDING JOINTS OF LARGE SIZE, IT WILL BE NECESSARY TO PREPARE SURFACE BY GRINDING AND BUFFING A SMOOTH FINISH AND CONTOUR AS NECESSARY. THE CONTRACTOR'S SCOPE OF WORK INCLUDES SUCH PREPARATION AS INCIDENTAL TO WORK.
- 5.2.7 NO SEPARATE PAYMENT FOR ANY NDE ACTIVITIES IS ENVISAGED. ACCORDINGLY, THE OFFERED RATE SHALL BE INCLUSIVE OF COST OF ALL NDE.

### **5.3 HEAT TREATMENT:**

- 5.3.1 FOR THE PURPOSE OF TEMPERATURE RECORDING OF STRESS RELIEVING PROCESS, THERMOCOUPLES HAVE TO BE ATTACHED TO THE WELD JOINT. THE NUMBER OF TEMPERATURE MEASURING POINTS AND LOCATIONS SHALL BE AS PER THE STANDARDS OF BHEL. THERMOCOUPLES HAVE TO BE ATTACHED USING CAPACITOR DISCHARGE TYPE PORTABLE THERMOCOUPLE ATTACHMENT UNIT. CONTRACTOR SHALL ARRANGE SUFFICIENT NUMBER OF THERMOCOUPLE ATTACHMENT UNITS.
- 5.3.2 CONTRACTOR SHOULD PROVIDE TEMPERATURE INDICATOR / TEMPERATURE RECORDER FOR MEASURING TEMPERATURE DURING PRE-HEATING FOR WELDING OR FOR CONTROLLING TEMPERATURE OF METAL FOR HOT CORRECTION ETC. THE TEMPERATURE RECORDERS SHOULD BE PREFERABLY OF SOLID STATE TYPE.
- 5.3.3 HEAT TREATMENT MAY REQUIRE TO BE CARRIED OUT AT ANY TIME (DAY OR NIGHT) TO ENSURE THE CONTINUITY OF THE PROCESS. THE CONTRACTOR SHALL MAKE ALL NECESSARY ARRANGEMENTS INCLUDING LABOURER REQUIRED FOR THE SAME AS PER

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter - V: Welding & Radiography

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### DIRECTIONS OF BHEL.

- 5.3.4 IN CERTAIN CASES ONLY THE PRE-HEATING OF WELD JOINTS MAY BE CALLED FOR.
- 5.3.5 FOR WELD JOINTS OF HEAVY STRUCTURAL SECTIONS, IF HEAT TREATMENT IS REQUIRED, THE SAME SHALL BE CARRIED OUT AS PART OF THE WORK.
- 5.3.6 CHECKING EFFECTIVENESS OF STRESS RELIEVING BY HARDNESS TESTS (BY DIGITAL HARDNESS TESTER OR OTHER APPROVED TEST METHODS AS PER BHEL ENGINEER'S INSTRUCTION) INCLUDING NECESSARY TESTING EQUIPMENTS IS WITHIN THE SCOPE OF THE WORK / SPECIFICATION.
- 5.3.7 PREHEATING, INTER-PASS HEATING, POST WELD HEATING AND STRESS RELIEVING AFTER WELDING (AS APPLICABLE) SHALL BE PERFORMED BY THE CONTRACTOR IN ACCORDANCE WITH BHEL ENGINEER'S INSTRUCTIONS. WHERE THE ELECTRIC RESISTANCE HEATING METHOD IS ADOPTED CONTRACTOR SHALL MAKE ALL ARRANGEMENT INCLUDING HEATING EQUIPMENT WITH AUTOMATIC RECORDING DEVICES, ALL HEATING ELEMENTS, THERMOCOUPLES AND ATTACHMENT UNITS, GRAPH SHEETS, THERMAL CHALKS, & INSULATING MATERIALS LIKE MINERAL WOOL, ASBESTOS CLOTH, CERAMIC BEADS, ASBESTOS ROPES ETC, REQUIRED FOR ALL HEATING AND STRESS RELIEVING WORKS.
- 5.3.8 ALL THE RECORDED GRAPHS FOR HEAT TREATMENT SHALL BE HANDED OVER TO BHEL/ IBR AUTHORITIES AND DUE CLEARANCES OBTAINED.
- 5.3.9 RESULTS OF THESE PROCESSES SHALL BE VERIFIED/ VALIDATED AS PER REQUIREMENTS OF BHEL / CLIENT.



# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter - VI: Preservation & Protection of Components

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### **6.0 Preservation & Protection of Components**

- 6.1 At all stages of work, equipment's/materials in the custody of Vendor will have to be preserved as per the instructions of BHEL. Necessary preservation agents including the primer & paint, for the above work shall be provided by the Vendor.
- 6.2 The Vendor shall make suitable security arrangements including employment of security personnel and ensure protection of all materials/ equipment in their custody and installed equipment's from theft/fire/pilferage and any other damages and losses.
- 6.3 Vendor shall be solely responsible for preservation and safety of material at their works. Vendor shall refurbish the material in case of any loss of material, without any cost to BHEL.

### **7.0 Exclusion in the scope of work**

- 7.1 Supply of permanent erection bolts.
- 7.2 Supply and fabrication of electro forged GI gratings
- 7.3 Supply and fabrication Galvanized Steel structure.
- 7.4 Supply and fabrication of Stainless steel items
- 7.5 Supply and fabrication of Handrail, Deck sheet & Cladding sheet.

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter - VIII: Price Bid and Modality of award

### 8.1 Price Bid Clause:

Bidder has to quote for 'Package A of Mode 1' and / or 'Package A of Mode 2' in price Bid.

#### a. BOQ along with weightage for Package A of Mode 1 is mentioned hereunder:

ST NO	Mode 1: Item Description for Package-A	Unit	Quantity	Weightage
2300	STRUCTURAL WORKS: Structural steel works including all labour, material (unless otherwise specified in BOQ/contract specification), equipments unless otherwise specified, transportation, handling etc. at all level as per specification, drawings and as directed by engineer - in - charge.			
A2301	Fabrication and supply of structures (shop fabricated in customer approved shop as per specification including applying primer coat, intermediate coat and final coat and painting as per applicable corrosivity class mentioned in specification) with mild steel rolled section / Medium and High Tensile structural steel/ built up section / combination of both conforming to IS:2062, pipes conforming to IS:1161/ IS:1239, tubular sections conforming to IS 4923, chequered plate conforming to IS: 3052, mild steel rounds, monorails, stays, safety chains, ladders, MS gratings (to be cut & fabricated from MS plates supplied in standard available sizes ) including in bunker area etc. in columns, beams, gantry girders, silos, hoppers, roof trusses, portals, laced purlins, space frames, hangers, struts, monorails, galleries, stiffeners, wall beams, sheeting runners, brackets, stub columns, bracings, cleats, trestles, base plates, splice plates, chequered plate flooring, decking and seal plates, steel frame grid over false ceiling, walkway platforms, ladders, stairs, stringers, treads, hood for ground conveyors, monorail doors, stools, debris chutes, landings, hand-rails etc including bunker area stools, gratings, monorails, platforms, collection of steel from stores, fabrication, straightening, cutting, bending, rolling, grinding, machining, drilling, welding, electrodes and other consumables, alignment, erection bolts & nuts (weight of erection bolts, nuts and welds not payable), assembly, edge preparation, preheating (min preheat and interpass temperature of 200 C for welding over 20 mm and upto 40 mm & 660 C for welding over 40 mm and upto 63 mm & 1100 C for thickness over 63 mm) & use of low hydrogen / radiogenic electrodes, post heating, testing of welders, inspection of welds, visual inspection, non-destructive and special testing, rectification and correction of defective welding works, production test plate, inspection and testing, erection scheme, protection against damage in transit, stability of structures, installation of temporary structures, setting column bases, surface preparation by means of manual or mechanical power tools as per IS:1477 part 1, touch-up painting, rectification, dismantling and removal of all temporary structures (weight of temporary structures not payable), return of surplus / waste steel materials to store etc all complete. Quality A/BR (Semi killed/killed) for Rolled section and B0 for plates (shall be tested for impact resistance at Room temperature), conforming to IS 2062. Plates beyond 12mm thickness and up to 40mm			

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter - VIII: Price Bid and Modality of award

ST NO	Mode 1: Item Description for Package-A	Unit	Quantity	Weightage
	thickness shall be normalized rolled. Plates beyond 40mm thickness shall be vacuum degassed & furnace normalized and shall also be 100% ultrasonically tested as per ASTM -A578 level BS2.			
a)	Grade of Steel : E250/E350/Square and Rectangular Tubular Sections (Material shall be in BHEL scope)	MT	7517	0.57968 21910
b)	Grade of Steel : E250/E350/Square and Rectangular Tubular Sections (Material shall be in agency scope)	MT	800	0.23029 34529
B2301	Detailed drawing preparation based on Input design drawings provided by BHEL/PEM & ISG and getting approval from BHEL PEM, BHEL ISG /BHEL customer. It includes connection design & preparation of fabrication drgs (Modelling in 3D software like TEKLA and model submission). Including appointment of a separate agency, approved by BHEL, for review and approval of fabrication drgs, in consultation with BHEL.	MT	250	0.00087 28666
A2302	Extra over ST NO. C2301 for <b>blast cleaning</b> of steel structures to near white metal surface (Sa 2 1/2 ) and applying coat of two component moisture curing <b>zinc (ethyl) Silicate primer</b> (solid by volume Minimum 60+/-2% & zinc dust % on dry film minimum 80 %). Zinc dust composition and properties shall be Type-II as per ASTM D520-00. Primer of <b>minimum 70 micron DFT</b> shall be applied over shot blast cleaned surface including touch-up painting etc all complete. Primer coat shall be applied in Shop immediately after blast cleaning by airless spray technique all complete	MT	8317	0.08416 05297
A2305	Providing Intermediate coat of two component <b>Polyamide cured epoxy with MIO Content</b> (containing lamellar MIO minimum 30% on pigment, solid by volume minimum 80% ±2%) of <b>minimum 100 micron DFT</b> . This coat shall be applied in shop after an interval of minimum 24 hours (from the application of primer coat) by airless spray technique. Colour as approved by the Employer, including protection and cleaning, scaffolding etc. all complete as per specification for all structures .	MT	8317	0.05228 57776
B2305	Providing Finish coat of <b>Two-pack aliphatic Isocyanate cured acrylic finish paint</b> (solid by volume minimum 55% ±2%) with Gloss retention (SSPC Paint Spec No 36, ASTM D 4587, D 2244, D 523) of Level 2 (after minimum 1000 hours exposure, Gloss loss less than 30 and colour change less than 2.0 ΔE) and <b>minimum 70 micron DFT</b> . This coat shall be applied shop after an interval of minimum 10 hours and within six (6) months (from the completion of Intermediate coat), Colour and shade of the coat shall be as approved by the Employer, including protection and cleaning, scaffolding etc. all complete as per specification for all structures .	MT	8317	0.05270 51822

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter - VIII: Price Bid and Modality of award

### **b. BOQ along with weightage for Package A of Mode 2 is mentioned hereunder:**

ST NO	Mode 2 : Item Description for Package-A	Unit	Quantity	Weightage
2300	STRUCTURAL WORKS: Structural steel works including all labour, material (unless otherwise specified in BOQ/contract specification), equipments unless otherwise specified, transportation, handling etc. at all level as per specification, drawings and as directed by engineer - in - charge.			
A2301	Fabrication and supply of structures (shop fabricated in customer approved shop as per specification including applying primer coat, intermediate coat and final coat and painting as per applicable corrosivity class mentioned in specification) with mild steel rolled section / Medium and High Tensile structural steel/ built up section / combination of both conforming to IS:2062, pipes conforming to IS:1161/ IS:1239, tubular sections conforming to IS 4923, chequered plate conforming to IS: 3052, mild steel rounds, monorails, stays, safety chains, ladders, MS gratings (to be cut & fabricated from MS plates supplied in standard available sizes ) including in bunker area etc. in columns, beams, gantry girders, silos, hoppers, roof trusses, portals, laced purlins, space frames, hangers, struts, monorails, galleries, stiffeners, wall beams, sheeting runners, brackets, stub columns, bracings, cleats, trestles, base plates, splice plates, chequered plate flooring, decking and seal plates, steel frame grid over false ceiling, walkway platforms, ladders, stairs, stringers, treads, hood for ground conveyors, monorail doors, stools, debris chutes, landings, hand-rails etc including bunker area stools, gratings, monorails, platforms, collection of steel from stores, fabrication, straightening, cutting, bending, rolling, grinding, machining, drilling, welding, electrodes and other consumables, alignment, erection bolts & nuts (weight of erection bolts, nuts and welds not payable), assembly, edge preparation, preheating (min preheat and interpass temperature of 20o C for welding over 20 mm and upto 40 mm & 66o C for welding over 40 mm and upto 63 mm & 110o C for thickness over 63 mm) & use of low hydrogen / radiogenic electrodes, post heating, testing of welders, inspection of welds, visual inspection, non-destructive and special testing, rectification and correction of defective welding works, production test plate, inspection and testing, erection scheme, protection against damage in transit, stability of structures, installation of temporary structures, setting column bases, surface preparation by means of manual or mechanical power tools as per IS:1477 part 1, touch-up painting, rectification, dismantling and removal of all temporary structures (weight of temporary structures not payable), return of surplus / waste steel materials to store etc all complete. Quality A/BR (Semi killed/killed) for Rolled section and B0 for plates (shall be tested for impact resistance at Room temperature), conforming to IS 2062. Plates beyond 12mm thickness and up to 40mm thickness shall be normalized rolled. Plates beyond 40mm thickness shall be vacuum degassed & furnace normalized and			

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter - VIII: Price Bid and Modality of award

ST NO	Mode 2 : Item Description for Package-A	Unit	Quantity	Weightage
	shall also be 100% ultrasonically tested as per ASTM -A578 level BS2.			
a)	Grade of Steel : E250/E350/Square and Rectangular Tubular Sections (Material shall be in BHEL scope)	MT	-	-
b)	Grade of Steel : E250/E350/Square and Rectangular Tubular Sections (Material shall be in agency scope)	MT	8317	0.92646 72143
B2301	Detailed drawing preparation based on Input design drawings provided by BHEL/PEM & ISG and getting approval from BHEL PEM, BHEL ISG /BHEL customer. It includes connection design & preparation of fabrication drgs (Modelling in 3D software like TEKLA and model submission). Including appointment of a separate agency, approved by BHEL, for review and approval of fabrication drgs, in consultation with BHEL.	MT	250	0.00033 77689
A2302	Extra over ST NO. C2301 for <b>blast cleaning</b> of steel structures to near white metal surface (Sa 2 1/2 ) and applying coat of two component moisture curing <b>zinc (ethyl) Silicate primer</b> (solid by volume Minimum 60+/-2% & zinc dust % on dry film minimum 80 %). Zinc dust composition and properties shall be Type-II as per ASTM D520-00. Primer of <b>minimum 70 micron DFT</b> shall be applied over shot blast cleaned surface including touch-up painting etc all complete. Primer coat shall be applied in Shop immediately after blast cleaning by airless spray technique all complete	MT	8317	0.03256 71841
A2305	Providing Intermediate coat of two component <b>Polyamide cured epoxy with MIO Content</b> (containing lamellar MIO minimum 30% on pigment, solid by volume minimum 80% ±2%) of <b>minimum 100 micron DFT</b> . This coat shall be applied in shop after an interval of minimum 24 hours (from the application of primer coat) by airless spray technique. Colour as approved by the Employer, including protection and cleaning, scaffolding etc. all complete as per specification for all structures .	MT	8317	0.02023 27689
B2305	Providing Finish coat of <b>Two-pack aliphatic Isocyanate cured acrylic finish paint</b> (solid by volume minimum 55% ±2%) with Gloss retention (SSPC Paint Spec No 36, ASTM D 4587, D 2244, D 523) of Level 2 (after minimum 1000 hours exposure, Gloss loss less than 30 and colour change less than 2.0 ΔE) and <b>minimum 70 micron DFT</b> . This coat shall be applied shop after an interval of minimum 10 hours and within six (6) months (from the completion of Intermediate coat), Colour and shade of the coat shall be as approved by the Employer, including protection and cleaning, scaffolding etc. all complete as per specification for all structures .	MT	8317	0.02039 50638

### 8.2 Modality of award

- i. The total scope of work is being divided into Three (03) packages. Each package shall be awarded on price matching philosophy, as mentioned hereunder.
- ii. **The subject tender shall be awarded in the following mode, w.r.t. extant policy/ guideline**

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter - VIII: Price Bid and Modality of award

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### and statutory rules.

- a. Subject tender has two Modes for award of packages,
  - **Mode 1:** Supply of Fabricated steel as per BOQ where majority of steel supply is in BHEL scope.
  - **Mode 2:** Supply of Fabricated steel as per BOQ where all steel supply is in contractor scope.
- b. Bidders shall quote “Total Price” (excluding GST) for ‘Package-A of Mode 1’ and/or ‘Package-A of Mode 2’
- c. Bidders shall quote in Rupees in VOL-II-Price-Bid at BHEL E-procurement Portal. Any other entry elsewhere in the offer of the bidder shall be treated as Null and Void.
- d. Subject to qualification of bidder against **respective PQR** for Mode 1/Mode 2 and in line with declaration by Bidder (Annexure-D of TCC), price bid shall be opened.
- e. Price bids of qualified bidders shall be evaluated separately for ‘Package-A of Mode 1’ and ‘Package-A of Mode 2’. Based on the “Total Price (exclusive of GST)” all qualified Bidders shall be aligned in order of Price Competitiveness (i.e. L-1, L-2, L-3 and henceforth).
- f. In order to select a Mode (i.e., Mode 1 or Mode 2), BHEL shall compare the L1 rates for ‘Package-A of Mode 1’ and ‘Package-A of Mode 2’. BHEL shall load the Material cost (including all expenses) @Rs. 65,995/MT in item no A2301 (a) of Package A of Mode-1 for comparison with rates of Package A of Mode-2.
- g. Based on Cost benefit analysis to BHEL, BHEL shall select a Mode (i.e., Mode 1 or Mode 2) for award of Packages. In case, the price to BHEL for Mode 1 and Mode 2 for Package A is equal, then BHEL shall opt for Mode 2 for award of all Packages.
- h. Accordingly, Packages A, Package B & Package C shall be awarded in the **selected Mode**, in following steps:

Step-1: Package A can be awarded to L-1 Bidder, with acceptable L-1 rates to BHEL.

Step-2: For the award of Packages B:

Finalized L-1 rates shall be counter offered to the other bidders in the order of Price Competitiveness (i.e. L-2, L-3 ... ). The bidder accepting the L1 rates shall be considered for awarding of Package B. The unit rates of Package A as derived from L-1 rates shall be applicable for unit rates of Package B and accordingly Total awarded value of Package B shall be calculated.

Step – 3: For the award of Packages C:

Finalized L-1 rates shall be counter offered to the next bidders (bidder next to whom Package B is awarded) in the order of Price Competitiveness. The bidder accepting the L1 rates shall be considered for awarding of Package C. The unit rates of Package A as derived from L-1 rates shall be applicable for unit rates of Package C and accordingly Total awarded value of Package C shall be calculated.

Step – 4: In case, none of the bidders agrees (including the bidders who have earlier refused during step 2 to step 3) to match the finalized L-1 rates for particular package/s, then BHEL, at



# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter - VIII: Price Bid and Modality of award

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its discretion, may consider award of that Package/s 'bifurcating the quantities among awarded agencies at the awarded L-1 rates with the philosophy mentioned hereunder' or 'BHEL reserves the right not to award the particular package/s'.

### **Philosophy for award of work, in case bidders do not agree to match the L1 rates for any of the package/s:**

Case 1: if only Package C could not be awarded. The quantum of work mentioned in Package C can be awarded to the agencies, to whom Package A & Package B would have been awarded, in a ratio of 60:40 respectively.

- i. For this procurement, purchase preference to MSE-MII shall be in line with Office Order No. F. No. DPE/3(3)/10-Fin dated 29.05.2023 forwarded by Department of Public Enterprises against Department of Expenditure O M No. F.1/4/2021-PPD dated 18.05.2023. In case of subsequent orders issued by the nodal ministry, changing the definition of MSE, the same shall be applicable even if issued after issue of this NIT, but before opening of Part-II bids against this NIT.

### **8.3 Instructions to the bidders**

- I. BHEL has pre-fixed the Weightage/Factor as detailed above in this chapter for deriving the Unit Rates. By multiplying BHEL pre-fixed Weightages / Factor and the total quoted prices; Total amount of individual items shall be derived. Unit Rate/Item Rate thus arrived shall be rounded off to two decimal places.
- II. PVC shall be applicable on item no. A2301 (a) and A2301 (b) only.
- III. Bidders to note that the subject tender is an item rate contract. Payment shall be made for the actual quantities of work executed at the unit rate arrived above.
- IV. For the convenience of bidders, BHEL has issued an excel sheet with all the requisite formulae as described above. However, the referred excel sheet shall not form part of contract document. Further, this sheet should not be uploaded at the e-Portal.
- V. Delivery Terms: Suppliers shall quote on F.O.R. Destination basis (including Freight, Packaging and Forwarding charges). Offers other than F.O.R. Destination Basis will not be accepted by BHEL.  
Note: Transit insurance for supply of finished material from Vendor's works to site shall be in the scope of BHEL.
- VI. Liquidated Damages/Penalty: For the extension of contract, LD shall be 0.5% of basic value of the undelivered / delayed portion per week of delay or part thereof subject to a maximum of 10% of the total contract value (i.e. excluding elements of taxes). For this purpose, the period of delay shall be the delay attributable to the Fabricator for the completion of work as per contract. Contract Value for this purpose, shall be the total Purchase order value inclusive of Quantity Variation & PVC and exclusive of Extra Works, Supplementary/Additional Items, if any.
- VII. Short Closure: BHEL may short close the contract at any stage of the contract/extended period without assigning any reasons to the bidder.
- VIII. Bidder shall necessarily submit the following details, along with bid document, in the given formats:
  - a. Duly Filled Vendor's Proposal and Evaluation Report. Format - P4F1R0.
  - b. Duly Filled Vendor Questionnaire. Format - P4F2R0.
  - c. Overall Organization Chart with Manpower details (Design, Manufacturing, Quality etc.).

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter - VIII: Price Bid and Modality of award

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- d. Supply reference list indicating similar product supply order reference no., customer name, rating of product, date /year of supply, date / year of commissioning.
- e. List of Manufacturing Equipment available with vendor.
- f. List of Testing Equipment available with vendor.
- g. Manufacturing process execution plan with flow chart indicating various stages of manufacturing from raw material to finished product including outsourced process, if any.
- h. Details of Outsourced Manufacturing Processes, if any.
- i. Quality control exercised during receipt, in-process & final inspection.
- j. Bidder's factory shall have facilities as per Annexure-A of TCC. Supporting documents submitted against this shall adhere to naming philosophy as per Annexure-A only. BHEL/NTPC may carry out shop/factory assessment, if necessary.

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter - IX: Taxes and Duties

9.0	<b>TAXES &amp; DUTIES</b>
9.1	<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>
9.2	<b>GST (Goods and Services Tax)</b>
9.2.1	<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>
9.2.2	<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>
9.2.3	<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>
9.2.4	<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>
9.2.5	<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>
9.2.6	<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 invoice &amp; 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.</p>
9.2.7	<p>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.</p>

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter - IX: Taxes and Duties

9.2.8	<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> <ul style="list-style-type: none"><li>a. Supply of goods and/or services have been received by BHEL.</li><li>b. Original Tax Invoice has been submitted to BHEL.</li><li>c. Contractor/ Vendor has submitted all the documents required for processing of bill as per contract/ purchase order/ work order.</li><li>d. 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>e. 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>f. 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>g. Contractor has to submit an undertaking confirming the payment of all due GST in respect of invoices pertaining to BHEL.</li></ul>
9.2.9	<p>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.</p>
9.2.10	<p>TDS as applicable under GST law shall be deducted from contractor's bill.</p>
9.2.11	<p>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.</p>
9.2.12	<p>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.</p>
9.2.13	<p>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.</p>
9.2.14	<p>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.</p>
9.2.15	<p>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.</p>

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter - IX: Taxes and Duties

9.2.16	<b><u>Variation in Taxes &amp; Duties:</u></b>		
	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.		
	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 contractor only and within the contractual delivery period only.		
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.			
9.3	<b><u>Income Tax:</u></b>		
TDS/TCS as applicable under Income Tax Act, 1961 or rules made thereunder shall be deducted/collected from contractor's bill.			
9.4	<b><u>List of state wise GSTIN Nos. of BHEL is as follows:</u></b>		
	Sl. No	Projects under state	GSTIN
	1	Andhra Pradesh	37AAACB4146P7Z8
	2	Bihar	10AAACB4146P1ZU
	3	Chhattisgarh	22AAACB4146P1ZP
	4	Gujarat	24AAACB4146P1ZL
	5	Jharkhand	20AAACB4146P5ZP
	6	Madhya Pradesh	23AAACB4146P1ZN
	7	Maharashtra	27AAACB4146P1ZF
	8	Orissa	21AAACB4146P1ZR
	9	Telangana	36AAACB4146P1ZG

## ANNEXURE - A

TENTATIVE REQUIREMENT FOR FACTORY FOR FABRICATION OF STEEL STRUCTURES			
Sr. No	Characteristic		Check List
1	License	a	Availability of factory registration license ,GST Registration and other statutory licenses/permissions etc.
2	Quality management	a	Availability of work instruction/procedures for critical activities & its implementations.
3	Raw material control	a	Incoming raw material acceptance -MTC review records available
		b	Availability of material correlation/identification procedures & its implementations by hard punching with protective coating/by record keeping/painting etc.*
		c	Storage/stacking of raw material-in organized manner or elevated platform with proper identification.
4	Material handling	a	Availability of EOT crane/ Gantry Crane of required capacity to handle maximum Load required for movement.
		b	Availability of gantry cranes/Hydra/other handling equipment's capable to handle proposed heaviest component(if required other than EOT crane)
5	Handling of weld consumables	a	Availability of calibrated baking oven, holding oven & portable ovens(in sufficient quantities)
		b	Proper storage of weld consumables or racks & other controlled conditions
		c	Weld consumables handling: Issue/return of electrodes from store properly documented/recorded.
6	Welding qualification	a	Availability of qualified WPS & PQR
		b	Availability of sufficient no of qualified welders
		c	Availability of welder performance monitoring/defect rate monitoring systems
7	Machinery	a	Availability of sufficient no of SAW welding machines
		b	Availability of sufficient number of GTAW welding machines
		c	Availability of sufficient number of welding machinery- SMAW/GTAW/FCAE etc.
		d	Availability of CNC plasma/torchy cutting machines/profile cutting machines.
		e	Availability of PUG/Gas cutting machines



## ANNEXURE - A

TENTATIVE REQUIREMENT FOR FACTORY FOR FABRICATION OF STEEL STRUTURES		
Sr. No	Characteristic	Check List
		f Availability of radial drilling machine, lath Machine & rolling machine-capacity matching to proposed thickness & size of component.
		g Availability of weld edge preparation/bevel end cutting machines
8	Spare/Inspection Area	a Availability of said levelled floor for trail assembly adequate for proposed size of components with required material handling capacity
9	NDT/HEAT treatment/hydro/leak test facility	a Availability of sufficient size covered shed with concrete platform for fabrication activities
		b Availability of beam straightening machine
		c Availability of DPT/MPI facility-in house /outsourced to other agency
		d Availability of RT facility-in house/outsourced(as applicable)
		e Availability of UT facility-in house/outsourced(however done inside vendors own works)
		f Availability of RT film viewer/dark room, densitometer , reference photograph etc. if RT is done
10	Professional qualification/quality manpower	a Availability of qualified & experience manpower for quality.
		b Availability of qualified welding inspectors.
		c Availability of DP/MPT Level II qualified personal.
		d Availability of RT level II qualified personal if applicable.
		e Availability of UT level II qualified personal if required.
11	Testing facility	a Availability of In house/outsourced testing facilities for chemical testing by Spectro/PMI.
		b Availability of In house/outsourced testing facilities like UTS% elongation/ben/impact testing /hardens etc.
		c Availability of calibrated tape/laser beam instruments to measure long column length for proto /assembly
		d Availability of calibrated weld gauge, Vernier, micrometer & measuring instruments

## ANNEXURE - A

TENTATIVE REQUIREMENT FOR FACTORY FOR FABRICATION OF STEEL STRUTURES		
Sr. No	Characteristic	Check List
12	<b>Surface cleaning &amp; painting</b>	a Availability of covered shot/grit blasting facility with air compressor, mechanism to segregate fine shot(sievers) shots/grits re-collection mechanism, surface compactor/surface roughness meter etc.
		b Availability of in house painting facility(separate covered area) airless gun for painting etc.
		c Availability of in house testing facility, paint thickness & paint adhesion.

## ANNEXURE – B

### 2.17 PRICE VARIATION COMPENSATION

PVC shall be applicable for Item no. A2301 a) and A2301 b) only for entire contract period and extended period if any. For balance items the awarded rates mentioned therein shall remain firm for entire contract period/extended period if any.

2.17.1 In order to take care of variation in cost of execution of work on either side, due to variation in the index of LABOUR, HIGH SPEED DIESEL OIL, WELDING ROD, CEMENT, STEEL, MATERIALS, Price Variation Formula as described herein shall be applicable

2.17.2 85% component of Contract Value shall be considered for PVC calculations and remaining 15% shall be treated as fixed component. The basis for calculation of price variation in each category, their component, Base Index, shall be as under:

SL NO.	CATEGORY	INDEX/ AVERAGE MINIMUM WAGE	PERCENTAGE COMPONENT ('K')	
			FABRICATION PACKAGES	
			Material in BHEL scope	Material in Agency scope
i)	LABOUR (ALL CATEGORIES)	'MONTHLY ALL-INDIA AVERAGE CONSUMER PRICE INDEX NUMBERS FOR INDUSTRIAL WORKERS' published by Labour Bureau, Ministry of Labour and Employment, Government of India. (Website: labourbureau.nic.in)	65	26
ii)	WELDING ROD	Name of Commodity: MANUFACTURE OF BASIC METALS Commodity Code: 1314000000 ( <b>See Note E</b> )	15	6
iii)	HIGH SPEED DIESEL OIL	Name of Commodity: HSD Commodity Code: 1202000005 ( <b>See Note E</b> )	5	2
iv)	STEEL (Structural)	Name of Commodity: MILD STEEL: LONG PRODUCTS Commodity Code: 1314040000 ( <b>See Note E</b> )	0	51

2.17.3 As per the 'MONTHLY WHOLE SALE PRICE INDEX' for the respective Commodity and Type, published by Office of Economic Adviser, Ministry of Commerce and Industry, Government of India. (Website: [eaindustry.nic.in](http://eaindustry.nic.in)). Revisions in the index or commodity will be re-adjusted accordingly.

2.17.4 Payment/recovery due to variation in index shall be determined on the basis of the following notional formula in respect of the identified COMPONENT ('K') viz LABOUR, HIGH SPEED DIESEL OIL, WELDING ROD, CEMENT, STEEL, MATERIALS.HSD

$$P = K \times R \times \frac{(X_N - X_0)}{X_0}$$

X<sub>0</sub>

Where,

P = Amount to be paid/recovered due to variation in the Index for Labour, High Speed Diesel Oil, Welding Rod, Cement, Steel and Materials

## ANNEXURE – B

- K = Percentage COMPONENT ('K') applicable for Labour, High Speed Diesel Oil, Welding Rod, Cement, Steel and Materials
- R = Value of work done for the billing month (Excluding Taxes and Duties if payable extra)
- $X_N$  = Revised Index for Labour, Revised Average Minimum Wages for Labour, Revised Index for High Speed Diesel Oil, Welding Rod, Cement, Steel and Materials for the billing month under consideration
- $X_o$  = Index for Labour, Average Minimum Wages for Labour, Index for High Speed Diesel Oil, Welding Rod, Cement, Steel and Materials as on the Base date

2.17.5 PVC shall not be payable for Supplementary/Additional Items, Extra works. However, PVC will be payable for items executed under quantity variation of BOQ items under originally awarded contract.

2.17.6 Base date shall be the calendar month of the 'last date of bid submission'.

2.17.7 The contractor shall furnish necessary monthly bulletins in support of the requisite indices from the relevant websites along with his Bills.

2.17.8 The contractor will be required to raise the bills for price variation payments on a monthly basis along with the running bills irrespective of the fact whether any increase/decrease in the index for relevant categories has taken place or not. In case there is delay in publication of bulletins (final figure), the provisional values as published can be considered for payments and arrears shall be paid/recovered on getting the final values.

2.17.9 PVC shall be applicable for the entire original contract period plus the extended period, i.e. for the complete execution period, as follows:

For PVC computation of the  $n^{\text{th}}$  month:

Let the cumulative delay attributable to the Contractor is  $D_n$  in the  $n^{\text{th}}$  month.

Considering  $R_n$  as the billing value for the  $n^{\text{th}}$  month, PVC for the  $n^{\text{th}}$  month shall be calculated as follows:

- a) PVC for the portion of  $R_n$  for an amount of  $D_{(n-1)}$  shall be payable as per indices for the  $(n-1)^{\text{th}}$  month.
- b) PVC for the balance portion of  $R_n$  shall be payable as per indices for the  $n^{\text{th}}$  month

In case  $D_{(n-1)}$  is greater than  $R_n$ , then entire  $R_n$  shall be payable as per indices for the  $(n-1)^{\text{th}}$  month and the balance portion of  $D_{(n-1)}$  shall be adjusted from  $R_{(n+1)}$  of the  $(n+1)^{\text{th}}$  month and will be payable as per indices for the  $(n-1)^{\text{th}}$  month. The above process shall be continued for subsequent month(s) also till full  $D_{(n-1)}$  is consumed.

- i) For milestones mentioned in the contract, PVC shall be applicable as per average of the indices from the month of base date till the month of execution of milestone.
- ii) PVC shall not be applicable for time extension provided for the delays solely attributable to the contractor. No PVC is payable during the period of Provisional Time Extension till grant of final time extension. Applicability of PVC will be decided at the time of grant of final time extension.
- iii) The total amount of PVC shall not exceed 15% of the cumulatively executed contract value. Executed contract value for this purpose is exclusive of PVC, ORC, Supplementary/Additional Items and Extra works except items due to quantity variation.

## ANNEXURE - C

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### **BANK GUARANTEE FOR FREE ISSUE MATERIAL CLAUSE: For Mode 1 only**

#### **1.0 BANK GUARANTEE (BG) FOR FREE ISSUE OF BHEL'S MATERIAL**

BG shall be provided by successful bidder/Fabricator for 100% raw steel material value identified to be issued to the Fabricator against Purchase Order (PO). The value of raw steel materials (including all expenses) has been considered as Rs. 65,995/MT. Rolling plan limit for supply of Raw Steel is 2000 MT each for all the packages.

BHEL shall supply raw steel material that shall not exceed 'the material equivalent to BG amount (in which Cost of material shall be at prevailing rate, as decided by BHEL)', at Fabricator's works at any single point of time.

BG shall be furnished in three stages as recited below, i.e. in stage 1 & 2, BG value of Free Issue Material shall be 100%. In stage 3, if there is any additional requirement of steel for fabrication work which is exceeding 2000 MT, BHEL will provide the raw steel on submission of additional BG of 50% raw steel material value.

The BG required for execution of the Purchase Order (PO) should be submitted in following Stages: -

Stage 1 BG:

a) Stage 1 BG equivalent to the 100% of Raw steel material value of 1,000 MT approx. for execution of the Purchase Order (PO) should be submitted within a period of 15 days from the date of intimation by BHEL PS Region to Fabricator for submission of Stage 1 BG'. This BG must be kept valid till completion of supply of all finished goods as per contract.

Stage 2 BG:

b) Stage 2 BG equivalent to the 100% of Raw steel material value for material beyond 1000MT and upto rolling plan of 2000MT for execution of the Purchase Order (PO) should be submitted within a period of '15 days from the date of intimation by BHEL PS Region to Fabricator for submission of Stage 2 BG' for material quantity to be supplied. This BG must be kept valid till completion of supply of all finished goods as per contract.

Stage 3 BG: (If required)

Supply of additional Raw steel material, that is exceeding the rolling plan limit of 2000 MT, will be provided by BHEL on submission of additional BG equivalent to 50% of Raw steel material value. BG should be submitted within a period of '15 days from the date of intimation by BHEL PS Region to Fabricator for submission of Stage 3 BG' for material quantity to be supplied. Fabricator may also request BHEL to deduct the amount equivalent to the 50% of material value of additional Raw Steel from the RA bills in lieu of BG.

#### **Important Note:**

1. BHEL will supply raw steel material after receipt of BG from fabricator. Supply of Raw Steel Material will start after receipt of Stage-1 BG. At any point of time, BHEL shall not supply Raw Steel without any Bank Guarantee.
2. If the successful fabricator decides to provide the BG cited in Stage 1, 2 & 3 as a single BG or combination of 2 BGs, they may do so without affecting other aspects of the contract/PO.
3. BG shall have a claim period of 3 months in addition to the contract or termination of contract whichever is later.

2.1 BHEL PS Region shall intimate the agency for submission of Bank Guarantee. On intimation to the Fabricator regarding submission of required BGs (which includes Stage - 1, 2 and 3) and if the

## ANNEXURE - C

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Fabricator does not submit the required BG within timeline stipulated in above clauses, BHEL shall take appropriate contractual action.

2.2 Bank Guarantee to the specified value for the safe custody of the materials issued by BHEL is to be executed by any one of the banks in the List of Consortium of Banks or Nationalized banks on behalf of the Fabricator. Also, the above bank guarantee shall be executed on a non-judicial stamp paper of value Rs.100/- as per BHEL's bank guarantee format attached in Annexure Bank Guarantee.

2.3 BHEL reserves the right to recover any cost arise for the reason attributable to Vendor from RA Bills, BG against free issue material and BG against Performance Guarantee. If the recovery amount is more than the pending bills, the difference amount should be settled immediately by Vendor by submitting Demand Draft(s)/Cheque amounting to balance amount, in favour of BHEL/ PS Region.

2.4 Successful bidders may furnish Fixed Deposit Receipt (FDR) in lieu of Bank Guarantee (BG) if they wish to do so. Prior intimation may be provided to the Competent Authority.

2.5 Necessary Bank Guarantee (BG) / Fixed Deposit Receipt (FDR) should be furnished and renewed in time. In case, contractor fails to extend the BG/FDR, BHEL shall be entitled to encash the BG/FDR.

2.6 Diversion/Cancellation of P.O.: In case of delay in delivery beyond PO delivery / mutually agreed delivery, or Fabricator fails /refuses to complete the PO as per terms, or insufficient facilities at Fabricator's works to execute a PO, BHEL has the right to get the items ordered elsewhere with notice to the Fabricator; and the additional expenditure / difference in cost, if any, including consequential cost shall be recovered from the defaulted Fabricator. Also, in such case of withdrawal of orders, Fabricator shall return full material in condition as issued to them by BHEL for executing the job; otherwise, BHEL shall recover full material cost and conversion cost (in case of part processed items) from Fabricator by adjusting against amount due to Fabricator and/or by invoking the BG and/or by any other suitable means as decided by BHEL. In addition, BHEL shall be taken action as per latest revision of BHEL Guidelines for Suspension of Business dealings with Suppliers / Contractors. Fabricators are requested to visit [http://www.bhel.com/vender\\_registration/pdf/Suspension\\_guidelines\\_adbridged.pdf](http://www.bhel.com/vender_registration/pdf/Suspension_guidelines_adbridged.pdf) for details of BHEL Guidelines for Suspension of Business dealings with Suppliers / Contractors.

2.7 All the materials of BHEL shall under no circumstance be sold/hypothecated to any bank or to any lending institution or to any party whomsoever. Such materials should not be shown as the Subcontractor's assets in any of the statements of the Fabricator to any party.

2.8 The default Fabricator shall be liable for any loss, which BHEL may sustain, in addition to liquidated damages as mentioned above.

2.9 No compensation shall be given to the Fabricator, in case of cancellation/diversion of PO(s) even if the jobs have been processed partly.

**Format for BG is available with tender document.**

## ANNEXURE – D1

### **DECLARATION BY BIDDERS (Selection of Mode)**

<b>Job Description:</b>	Fabrication and supply of finished factory fabricated structure up-to Project Site, based on input design & detailed drawing provided by BHEL for CHP-AHP & FGD and other structures as specified in scope for 2X660 MW Talcher Thermal Power Station	
<b>MODES AS PER TCC CLAUSE NO. 2.1</b>	<b>Bidders to mandatorily mention: (YES / NO)</b>	
Quoted for MODE-1 Package-A	.....	
Quoted for MODE-2 Package-A	.....	

**Note:**

1. Price Bids of only those bidders shall be opened, who stands qualified after compliance of criteria A to E as detailed under PQR (Annexure-1) above.
2. Price Bid(s) submitted by bidder for Mode-1 and / or Mode-2 shall be opened based on the declaration by the bidder(s).
3. **Mode against which Bidders have mentioned “No”, those price bid shall not be opened and bidders shall be disqualified for those mode.**

(Signature, Date & Seal of

Authorized Signatory of the Bidder)