


# VOLUME - IA

Technical Conditions of Contract (TCC) for  
“MATERIAL HANDLING AND MANAGEMENT SERVICES”  
FOR  
3x150 MW BTG package for Aditya Expansion  
Project at Aditya Aluminium, Hindalco Industries  
Limited at Lapanga, Sambalpur, Odisha.

BHARAT HEAVY ELECTRICALS LIMITED

# Technical Conditions of Contract (TCC)

	<b>Technical Conditions of Contract (TCC)</b> <b>PROJECT ENGINEERING &amp; SYSTEMS DIVISION</b> <b>HYDERABAD</b>		Ref No: HY/PE&SD/SC -PROJECTS/ 2025-26/TCC /MH/Hindalco/ 01, Rev. 00	
		Rev. No.	00	
<div><div><b>COPYRIGHT AND CONFIDENTIAL</b> The information on this document is the property of BHARAT HEAVY ELECTRICALS LIMITED, It must not be used directly or indirectly in any way detrimental to the interest of the</div><div><b>TECHNICAL CONDITIONS OF CONTRACT (TCC) FOR</b>  <b>“MATERIAL HANDLING AND MANAGEMENT SERVICES”</b>  <b>FOR</b> <b>3x150 MW BTG PACKAGE FOR ADITYA EXPANSION PROJECT AT ADITYA ALUMINIUM, HINDALCO INDUSTRIES LIMITED (HIL) AT LAPANGA, SAMBALPUR, ODISHA.</b></div></div>				
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## Chapter I- Project Information

2.11 Project Details			
1	Customer	:	<b>Hindalco Industries Limited (HIL) Aditya Aluminium</b>
2	Project Information	:	3X150MW BTG
3	Location	:	Sambalpur, Odisha
4	Address Detail	:	Lapanga, sambalpur district, Odisha
5	Nearest Railway Station	:	Hirakud railway station
6	Road Approach	:	Lapanga –Jharsuguda Main road
7	Nearest Air Port	:	Jharsuguda Airport
11	Ambient Air Temperature (Average)	:	a) Maximum: 47 <sup>0</sup> C b) Minimum: 26 <sup>0</sup> C
12	Average Relative Humidity	:	65%
13	Climatic Condition	:	Tropical Climate

**Bidder is advised to visit the project site and appraise himself about the local conditions and infrastructure available in the area for fulfilling their commitments under the contract. BHEL will not admit any claims whatsoever on account of Contractor's non-familiarization of local conditions.**

## Chapter II- Scope of Work

- 2.0 This technical specification is for the framework agreement contract for 48 months for Material Handling and Material Management services/works for the 3x150 MW BTG package for the Aditya Expansion Project at Aditya Aluminium Hindalco Industries Limited at Lapanga, Sambalpur, Odisha.

BHEL has already received the firm order for the one set of 1x150 MW BTG; two further sets of 1x150 MW BTG are expected to be placed by the customer in future.

This Framework Agreement contains the specification for Material Handling and Material Management services/works and cover the scope for executing all three units of 1x150 MW BTG project.

The Framework Agreement (FA) shall remain valid for a period of 48 months or extension/s if any, irrespective of BHEL receiving anticipated orders for remaining two unit of 1x150 MW BTG package described in above para.

BHEL will intimate the contractor, regarding receipt/non-receipt of the remaining anticipated orders for two units of 1x150 BTG (from HIL customer to BHEL) within the original contract period of the first Work Order (for BOQ-1 i.e 24 month) to be issued on the successful bidder under this Framework Agreement.

**Salient feature of the framework agreement (FA) including the modalities of Ordering/execution against Framework Agreement (FA) BOQ are mentioned in the chapter no. XVII of TCC; bidder to note while submitting their offers.**

### 2.1 Scope of Works:

- 2.1.1 RECEIPT, UNLOADING, VERIFYING, SHIFTING, STACKING, PRESERVATION, HANDLING AND HANDING OVER OF COMPONENTS OF BOILER WITH AUXILIARIES, ESP WITH AUXILIARIES, STEAM TURBINE & AUXILIARIES; TURBO-GENERATOR & AUXILIARIES; PUMPS WITH AUX., ROTATING MACHINES, VESSELS, COMPLETE ELECTRICAL, CONTROLS AND INSTRUMENTATION EQUIPMENTS, PANELS, CABLES / CABLE TRAYS, AND OTHER RELATED ITEMS INCLUDING ITEMS OF BOILER, TG & BOP'S PACKAGES; HP & LP PIPING; REFRACTORY & INSULATION WITH CLADDING MATERIALS; BHEL T&P; COMPONENTS & EQUIPMENT OF VARIOUS OTHER SYSTEMS, STRUCTURES AND PROVIDING SERVICES FOR MATERIALS MANAGEMENT AT 3X150 MW BTG.
- 2.1.2 Scope of work includes Material Handling and Management (Incl. Issue, verification, stacking, shifting and record keeping etc.) of materials receipt at BHEL Site/ store from

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various units of BHEL or from any other source of BHEL. Tentative quantities of all such materials expected to be received at site are given in the tender Document.

- 2.1.3 Unloading of all types of structural steel and plant equipment's Including heavy consignments and/or over-dimensional consignments (e.g. columns such as Boiler main column and Power House columns etc., structural materials, HP & IP Modules, LP Turbine, Generator Rotors, LP & HP Heaters, Flash Tanks / Vessels, Transformers and TG equipment's and any other plant materials etc.) directly from trailers by suitable crane/s or by jack & sleeper method as per instruction of BHEL Engineer.
- 2.1.4 The required jack & sleeper are to be arranged by the contractor.
- 2.1.5 Steel plate for their crane movement if required and Concrete sleeper are to be arranged by the contractor.
- 2.1.6 Receipt of materials dispatched by road transport on door delivery basis at the BHEL stores and unloading thereof.
- 2.1.7 Preliminary verification of all materials at the time of unloading from transport vehicle or while receiving consignments from transporters' Go-down, as the case may be, reporting immediately the discrepancies like damages and shortages noticed.
- 2.1.8 Detailed verification of materials with reference to packing list and loading advice slip after unpacking of boxes & crates; repacking, where called for, after detailed verification; preparation of receipt inspection reports etc. shall be carried out within the quoted rate within 14 days. If the verification is not carried out within 14 days for reasons attributable to the contractor, then BHEL is having right to deploy the resources and recover the charges thereof from the contractor as per actual rates + 5% overhead rates.
- 2.1.9 Stacking and storing at BHEL open storage yard / covered stores / closed & semi-closed sheds and submission of stacking / storing records.
- 2.1.10 Preservation of the materials in accordance with BHEL preservation manual and as per BHEL instructions.
- 2.1.11 General cleaning, grass cutting/housekeeping and upkeep of storage yard, covered and semi-closed stores sheds, open storage area shall be in the scope of contractor. However, Services of Grass cutting/housekeeping/upkeep of storage yards shall be payable as per BOQ for menial services (for Grass cutting/housekeeping/upkeep of storage yards etc, Work will be assigned as per instruction of the BHEL site engineer. Providing required tools and tackles, safety PPEs, gate pass formalities, insurance of labour and T&Ps, accommodations and any other labour facilities shall be in the scope of Contractor and no separate payment is applicable for the same.
- 2.1.12 Providing Materials Management Services.

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- 2.1.13 Re-handling and restacking of materials as and when called for by BHEL. This also includes excess / redundant / scrap materials returned to stores by BHEL erection contractors.
- 2.1.14 Handling and loading of outgoing materials those are to be sent to other destinations including scrap, if any. Note: In case of scrap handling, cutting of scrap in scrap yard to ensure full truck load weight is in the scope of MM agency. Scope of Scrap cutting, if any, shall be treated as extra work. Rate will be finalized in line with the relevant provisions of GCC.
- 2.1.15 Lodging of complaint (FIR) with local authorities (Police station) for any theft / damage of received/ stored material.
- 2.1.16 Handing over of records and materials to various E&C agency along with the loading of the issued material on E&C agency trailer/tractor within total quoted rate in this tender.

### **2.2 SCOPE OF WORK IS FURTHER DETAILED IN VARIOUS CLAUSES HEREAFTER:**

#### **2.2.1 MAJOR PACKAGES TO BE HANDLED ARE AS UNDER:**

**Components of the following major systems are to be handled under this contract:**

- a) Boiler & Auxiliaries (Structures, Pressure Parts, Fans, Air pre-heaters, Fuel systems, ducts & dampers).
- b) Mill Bunker Buildings structure, its supporting structure.
- c) Electrostatic Precipitator with HV Rectifier Transformers and auxiliaries.
- d) Coal Mills & Feeders with associated auxiliaries (Pulverized Fuel system).
- e) Complete Insulation, Refractory, Lining, Ancillary and cladding materials.
- f) Turbines, Turbo-generator auxiliaries, condenser, pumps with drive motors and their associated equipment's & auxiliaries, HP & LP heaters, heat exchangers, de-aerating heaters and other consumables & lubricants etc.
- g) Power cycle pumps with auxiliaries, Tanks & Vessels.
- h) Controls & Instrumentation Systems for Boiler, ESP and their auxiliaries
- i) STG & Aux controls and instrumentation and accessories including cables, trays etc.
- j) Power cycle piping, valves, Hangers & Supports including HP & LP bypass systems.
- k) Low Pressure piping system.
- l) Circulating water pipes, filter, plate type heat exchanger, CW booster pumps with drives, DM cooling water system and drives, and aux cooling water pumps.
- m) Generator relay protection panels and auxiliaries
- n) LT switch gears, Electrical and pneumatic actuators and motors.
- o) Boiler piping and TG cycle piping, tanks, vessels etc.
- p) Electrical Panels, cables, cable trays and accessories.
- q) PEM supplied items
- r) HP & LP Chemical dosing system.

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- s) Thermal insulation & cladding.
- t) Other BHEL supplied (manufactured/bought out items).
- u) BOP Package items
- v) Misc. Cranes & hoist.
- w) Cable & cable trays etc. Tanks
- x) Fabricated Structures
- y) Structural steel items.
- z) Construction equipment's (including cranes, portal gantry cranes, IHE and any other equipment) of BHEL sent in assembled/dismantled condition and other items received from other sites/locations.
- aa) Materials and consumables required for erection & commissioning of plant.
- bb) Mandatory spare handing over to customer for this project including all documentation work/codification work/logistics/loading/unloading etc shall be on the contractor scope within total quoted rate.

The above list is not exhaustive; it only includes most common major packages. It should in no way a basis for any claim/dispute on account of any variation. The intent of specification is to provide the complete material handling and material management services. All the work shall be carried out as per the instructions of BHEL engineer which shall be final and binding on the contractor.

### 2.2.2 Some of the Major Heavy Single Consignments are as furnished below:

S.N.	Item Description	Approx. Wt.
1	Heaviest Piece/part of Ceiling Girder (height 7M, width 1.5 M, length 13 M)	100MT
2	Boiler Drum	96MT
3	Combined HP-IP (K)-module (Maximum Erection Weight) (7940mmm X 4400mmX 3260mm).	113 MT
4	Generator Rotor	42.4 Mt
5	Generator Stator (L-7150 X W- 3900X H-3892)	194.2 MT
6	HP Heater -01 Ø 1000 x H 12000	22.0 MT
7	HP Heater -02 Ø 1000 x H 12400	23.5 MT
8	Cabins/Crawlers/counter weight of BHEL Cranes	Up to 65 MT
9	SCR Ammonia Tanks 2 Nos each 60MT	120 MT

**The weight & Quantities indicated above are only the tentative indication and should in no way become a basis for any claim on account of any variation in actual weight. Work**

shall be carried out for all the Equipment's received from various manufacturing units and their vendors for the project.

**Receipt, unloading, verifying, shifting, stacking, preservation, handling and re-handling and handing over to respective agencies of consignment (tentative listed is in clause no. 2.2.2 of TCC) requiring lifting by crane of capacity more than 40 MTs all complete as per instruction and direction of BHEL Engineer-in-charge, shall also be in the contractor scope. contractor has to arrange the required capacity crane & T&P etc for the above work. For this rate per MT shall be as per finalized "Schedule of the quantity and rates".**

**If in any case BHEL or BHEL internal hired crane has been used in the unloading of the above-mentioned equipment's then hiring rate on daily basis shall be chargeable to the contractor or may be recovered from the contractors bills. Diesel shall be in contractor scope.**

### **2.2.3 Major Unloading quantities:**

Total Approx. weight of Project material to be unloaded for all the three unit of 1x150 MW BTG is approximately-**45,000 MT (Considering 15000 MT per unit of 1x150 MW BTG project).**

- 2.2.4 The intent of specification is to provide Material Handling and Materials Management services according to the most modern and proven Techniques and codes. The omission of specific reference to any method, equipment or materials necessary for proper and efficient unloading, transportation, verification, stacking & preservation etc. shall not relieve the contractor of the responsibility of providing such facilities to complete the work without any extra compensation.
- 2.2.5 All the work shall be carried out as per the instructions of BHEL engineer. BHEL engineer's decision regarding correctness of the work and method of working shall be final and binding on the contractor.
- 2.2.6 The contractor shall perform all required services which may not be specified herein but nevertheless required for the completion of work within quoted rates.
- 2.2.7 All necessary certificates and licenses required to carry out this work are to be arranged by the contractor expeditiously. The Contractor shall obtain independent Labour License under the Contract Labour (Regulations and Abolition) Act, 1970 for engaging contract labour as required from the concerned Authorities based on the certificate (Form- III or as applicable) issued by the Principal Employer/Customer.
- 2.2.8 All cranes, transport equipment's, handling equipment, tools, tackles, fixtures, equipment, manpower, supervisors/engineers, consumables (excluding those indicated as BHEL scope), etc. required for this scope of work shall be provided by the contractor.

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- 2.2.9 All expenditure including taxes and incidentals in this connection will have to be borne by the contractor unless otherwise specified in the relevant clauses elsewhere here. The contractor's quoted rates shall include of all such contingencies. In this connection refer relevant clause of general conditions of contract.
- 2.2.10 BHEL issued materials & T&P, shall not be under any circumstances whatsoever, and shall be taken out of the project site unless otherwise permitted by BHEL for outside job.
- 2.2.11 BHEL reserves the right to recover from the contractor any loss arising out of damage/ theft or any other causes or during unloading/ verification/stacking or at any time under the custody of the contractor due to negligence/ carelessness on the part of the contractor.

### Chapter III- Facilities in the scope of Bidder/BHEL

S. No.	Description <b>PART I</b>	Scope / to be taken care by		Remarks
		BHEL	Bidder	
3.1	ESTABLISHMENT			
3.1.1	FOR CONSTRUCTION PURPOSE:			
a	Open space for office (as per availability)	Yes		Location shall be finalized after joint survey with Hindalco.
b	Space for storage (as per availability within/nearby project premises)			Location will be finalized after joint survey with owner. <b>Note:</b> There can be more than one location of open storage yard, closed shed/ Semi Closed shed (few locations may also be outside project premises). Bidder shall make his establishment accordingly for material handling and MM services
c	Construction of bidder's office, canteen and storage building including supply of materials and other services		Yes	
d	Bidder's all office equipment, office / store / canteen/Toilet consumables		Yes	

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e	Toilet and Canteen facilities for the bidder's staff, Workmen supervisors and engineers etc		Yes	
f	Firefighting equipment like buckets, extinguishers etc		Yes	
g	Fencing of storage area, office, canteen etc of the bidder.		Yes	
<b>3.1.2</b>	<b>FOR LIVING PURPOSES OF THE BIDDER</b>			
a	Open space for labour colony (as per availability)		Yes	Contractor has to make his own arrangements for shelter and transportation of labours as per requirement.
b	Labour Colony with internal roads, sanitation, complying with statutory requirements.		Yes	Construction Plan shall be approved by BHEL/Customer.
<b>3.2.0</b>	<b>ELECTRICITY</b>			
<b>3.2.1</b>	<b>Electricity for construction purposes (for Site/Project works only) 3 Phase 415/440 V within project premises.</b>			Free
a	Single point source	Yes		
b	Further distribution including all materials, Energy Meter, Protection devices and its service		Yes	
c	Duties and deposits including statutory clearances if applicable		Yes	
3.2.2	<b>Electricity for the Toilet office, stores, canteen etc of the bidder</b>			Electricity shall be provided at one point and Further distribution shall be done by contractor.
a	Single point source	Yes		
b	Further distribution including all materials, Energy Meter, Protection devices and its service		Yes	
c	Duties and deposits including statutory clearances if applicable		Yes	
<b>3.2.3</b>	<b>Electricity for living accommodation of the bidder's staff, engineers, supervisors etc.</b>		Yes	.
a	Single point source		Yes	

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b	Further distribution including all materials, Energy Meter, Protection devices and its service		Yes	
c	Duties and deposits including statutory clearances if applicable		Yes	
<b>3.3.0</b>	<b>WATER SUPPLY</b>			BHEL shall provide water supply free of cost (at single point source) for construction purpose as and when made available by customer.
<b>3.3.1</b>	<b>For construction purposes</b>			Water shall be provided at one point and Further distribution shall be done by contractor.
a	Making the water available at single point		Yes	
b	Further distribution as per the requirement of work including supply of materials and execution		Yes	
<b>3.3.2</b>	<b><u>Water supply for bidder's office, stores, canteen etc</u></b>			
a	Making the water available at single point		Yes	
b	Further distribution as per the requirement of work including supply of materials and execution		Yes	
<b>3.3.3</b>	<b><u>Water supply for Living Purpose</u></b>			Contractor has to make his own arrangement.
a	Making the water available at single point		Yes	
b	Further distribution as per the requirement of work including supply of materials and execution		Yes	
<b>3.4.0</b>	<b>LIGHTING</b>			
a	For construction work (Supply and execution of the lighting work/ arrangements)		Yes	For office, stores, canteen etc. of the bidder; Illumination shall be in Contractor scope.
b	Lighting for the living purposes of the bidder at the colony / quarters.		Yes	

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<b>3.5.0</b>	<b>COMMUNICATION FACILITIES FOR SITE OPERATIONS OF THE BIDDER</b>			Bidder has to take care
a	Téléphone, fax, internet, e-mail etc.		Yes	
<b>3.6.0</b>	<b>COMPRESSED AIR wherever required for the work</b>		Yes	Bidder has to take care
<b>3.7.0</b>	<b>Demobilization of all the above facilities</b>		Yes	Bidder has to take care
<b>3.8.0</b>	<b>TRANSPORTATION</b>			Bidder has to take care
a	For site personnel of the bidder		Yes	
b	For bidder's equipment and consumables (T&P, Consumables etc)		Yes	
<b>3.9</b>	<b>Work Permits, gate pass etc. from customer for inward and outward movement of manpower, machinery and material</b>		Yes	
<b>3.10</b>	Preparation of site execution schedules and other input requirements as per Form-14.	Yes	Yes	In consultation with BHEL
<b>3.11</b>	Review of performance and revision of site execution schedules in order to achieve the end dates and other commitments	Yes	Yes	In consultation with BHEL
<b>3.12</b>	<b>Land/Open Space</b>			
<b>3.12.1</b>	Availability of land within plant boundary is very limited and the contractor has to plan and use the existing land considering the use of land by other Civil /Mechanical/ Electrical contractors and the storage of plant machineries and materials. The existing land shall be shared by all erection agencies. BHEL shall provide free of charge limited open space for office, storage area for vendor's material and T&Ps and laydown area as and where made available by Customer.			
<b>3.13</b>	<b>Labour and Staff Colony: Following are in the Bidder's scope of work for labour &amp; staff colony:</b>			
<b>3.13.1</b>	Labour colony is to be developed / arrange by bidder for all the labourers required to be deployed for the works. All labour colony set-up is to be developed / arranged as per specifications, drawings, standard approved by BHEL/Customer and in compliance of statutory requirements.			
<b>3.13.2</b>	Land for labor colony shall be arranged by Contractor at their own cost as per availability outside project area within acceptable limit or approx. 5 KM, Necessary levelling/dressing of land shall be done by the contractor. All arrangement for electricity and drinking/service water to be arranged by the contractor within his quoted price. However, if customer (HIL) provides land to BHEL for development of labour colony during the execution of the project, same may be made available to the bidder at the same terms & conditions (including rates) as applicable for BHEL. Bidder should indemnify BHEL for all the charges levied by HIL for such land, if applicable.			

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	Necessary levelling/dressing of such allotted land shall be done by the contractor. All arrangement for electricity and drinking/service water to be arranged by the contractor within his quoted price
<b>3.13.3</b>	Development of Bidder's temporary staff colony and labour colony having adequate no. of rest rooms along with toilets & fencing etc.
<b>3.13.4</b>	All Civil and Structural work associated with drinking and service water for Bidder's labour and other personnel at the work site/colony/offices including pump houses, pipes, overhead tank, tube wells etc.
<b>3.13.5</b>	Providing and maintaining facilities for safety, welfare, drinking water and sanitation, hygiene, biennial health check-up etc. for construction workers at their workplaces as well as at labour & staff colonies.
<b>3.13.6</b>	Development and maintenance of above facilities for construction workers deployed by the Contractor shall solely rest with the Contractor.
<b>3.13.7</b>	<p>Installation of necessary amenities and temporary infrastructure at Project site locations- Following are the minimum amenities to be provided by the bidder within the quoted price including removal/disposal of the same in environment friendly manner after its intended use/completion of scope of work:</p> <ul style="list-style-type: none"> <li>• Labour rest sheds near work spot.</li> <li>• Canteen facility creation / arrangement.</li> <li>• Drinking water facility.</li> <li>• Labour Bio toilets near work spot in sufficient nos. with regular cleaning &amp; maintenance arrangement.</li> <li>• Labour colony should have all hygienic condition, dining hall, toilets, proper sewerage system, good drinking water arrangements.</li> <li>• Regular fogging in the work place and labour colony to avoid mosquitoes.</li> <li>• Statutory documents shall be submitted along with RA Bills for processing of Bills.</li> </ul>
<b>3.14</b>	<b>Construction Power:</b>
<b>3.14.1</b>	Construction Power shall be provided at single point source on free of charge basis as and when made available at site, however contractor has to make his own arrangement to meet power requirement in case of delay in availability of single source or any kind of power interruptions during the course of the project.
<b>3.14.2</b>	Contractor shall make necessary arrangements for onward distribution of construction power taking due care of surrounding construction activities like movement of cranes & vehicles, civil work, fabrication/construction/assembly/ erection etc. and safety of personnel. It may become necessary to relocate some of the installations to facilitate work by other agencies or by him.
<b>3.14.3</b>	It shall be the responsibility of the Contractor to provide, maintain the complete installation on the load side of the supply with due regard to the safety requirements at site. All cabling and installations shall comply in all respects with the appropriate statutory requirements. The installation and maintenance of this shall be done by licensed and experienced electrician.
<b>3.14.4</b>	Contractor himself shall be responsible for any loss or damage to their equipment as a result of variations in voltage or frequency or interruptions in power supply.

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<b>3.14.5</b>	Supply of electricity shall be governed by Indian Electricity Act and Installation Rules and other Rules and Regulation as applicable. The contractor shall ensure usage of electricity in an efficient manner and the same may be audited by BHEL time to time. In case of any major deviation from normally accepted norms is observed, BHEL will reserve the right to impose penalty as deemed fit for such cases.
<b>3.15</b>	<b>Construction water:</b>
<b>3.15.1</b>	Construction Water may be provided at single point on free of charge basis as and when made available at site, however contractor has to make his own arrangement to meet Water requirement in case of delay in availability of single source or any kind of interruptions during the course of the project. Bidder has to make arrangement of further distribution of water at his own cost. No extra payment shall be made under this account.
<b>3.15.2</b>	The Contractor should decide for storage of sufficient quantity of water required for work. The agency should also construct sumps (if required) of suitable size for storage of construction water as per their requirement for use in batching plant and construction purposes.
<b>3.15.3</b>	Contractor to satisfy himself that the water drawn by him is fit for construction / consumption and adequately treat such water at his cost when it is not found fit for the said purposes.
<b>3.16</b>	<p>General Note:</p> <p>1.0 There can be more than one location of open storage yard, Closed shed/ Semi Closed shed. Few locations may be outside project premises, bidder shall make his establishment accordingly for Material Handling and MM services.</p> <p>2.0 Bidder has to make his own arrangement at his cost till the construction power by BHEL is established.</p> <p>3.0 Furnishing all labour, materials, supervision, construction/Material Handling plans, equipment, supplies, transport, to and fro the site, fuel, electricity, water and all other incidental items and temporary works not shown or specified elsewhere but reasonably implied or necessary for the proper completion, maintenance and handling over shall be in the scope of contractor.</p> <p>4.0 Giving all notices, paying all fees, taxes etc., in accordance with the general conditions of contract, that is required for all works including temporary works.</p>

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### Chapter-IV: LIST OF TOOL & PLANTS TO BE DEPLOYED BY THE CONTRACTOR

#### 4.1 List of Major Tools and Plants:

Sl. No.	DESCRIPTION OF EQUIPMENTS	Tentative Deployment	Tentative Duration	QUANTITY	REMARKS
1.0	Crawler Crane/Tyre mounted Mobile Crane (Telescopic boom, hydraulically operated with Turret function)- 40 MT or more	6 <sup>th</sup> Month	Till contract period or as decided by BHEL Engineer.	01	To be deployed as per instruction of BHEL Engineer.
2.0	Pick & carry type tyre mounted mobile crane (Farana)- 23MT or more <b>Note: Hydra is not allowed.</b>	1 <sup>st</sup> Month	Till contract period or as decided by BHEL Engineer.	01	To be deployed as per instruction of BHEL Engineer.
3.0	Crane - Forklift 5 Ton capacity with 3M lift Double mast type	1 <sup>st</sup> Month	Till contract period or as decided by BHEL Engineer.	01	To be deployed as per instruction of BHEL Engineer.
4.0	Tractor with trolley unit integrated with a hydraulically operated trolley/trailer, designed for material handling. minimum capacity 10 MT	1 <sup>st</sup> Month	Till contract period or as decided by BHEL Engineer.	01	To be deployed as per instruction of BHEL Engineer.
5.0	TRAILER-20MT	Need basis	Need basis	01	To be deployed as per instruction of BHEL Engineer.
6.0	WOODEN SLEEPERS Assorted sizes-(3' ft x 6'' x 6'' or as per BHEL instruction)	1 <sup>st</sup> Month	Till contract period or as decided by BHEL Engineer.	600	As per instruction of BHEL Engineer.
7.0	SLINGS, 'D'- SHACKLES, MAX PULLER. - 01 MT TO 10MT	1 <sup>st</sup> Month	Till contract period.	15 PAIRS	To be deployed as per instruction of BHEL Engineer
8.0	SLINGS, 'D'- SHACKLES, MAX PULLER, PULLEY BLOCKS,	Need basis	Need basis	As required .	To be deployed as per instruction of BHEL Engineer, WITH TEST REPORTS

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	HYDRAULIC JACKS, ETC ABOVE 10 MT.				
<b>9.0</b>	SPANNER SETS RING/D	1 <sup>st</sup> month	Till contract period.	TWO SET. UP TO 56 MM	To be deployed as per instruction of BHEL Engineer
<b>10.0</b>	Tarpaulin (waterproof and fire-resistant) 300 Gram/sq meter (GSM) Assorted Size as per BHEL requirement	As per BHEL instruction	As per BHEL instruction	3.0 Lac Square feet.	Mentioned quantities to be deployed as per Instruction of BHEL Engineer.

### 4.1.1 List of Other Tools and Plants:

SL. No.	DESCRIPTION OF EQUIPMENTS	Tentative Deployment	Tentative Duration	REMARKS
<b>1</b>	TRUCK- ADEQUATE CAPACITY	Need basis	As required	To be deployed as per instruction of BHEL Engineer.
<b>3</b>	Grease/paint/primer for preservation of BHEL's Equipment.	Need basis	Need basis	As required
<b>5</b>	Diesel	Need basis	Need basis	As required
<b>6</b>	Other consumables	Need basis	Need basis	As required

Only for items/ T&Ps mentioned in bill of quantity (BOQ)/Schedule of the quantity (SOQ), payment shall be made by BHEL as per finalized "Schedule of the quantity and rates". Other T&Ps/items as indicated above shall be provided by Contractors within the quoted rates.

**Note: Contractor shall provide Operator, Fuel, consumables, manpower (rigger/slinger/helper as required) etc. for complete operation for Cranes/ T&Ps to be deployed by contractor, for execution of work as per their scope, within the quoted rates and no separate payment shall be made for the same.**

End cap of various coils, pipes etc. if required, to be re- installed, the same shall be supplied and installed by the contractor within the total quoted rate in this tender.

### MEASURING AND MONITORING DEVICES (MMD):

AS PER REQUIREMENT TO BE FINALISED AT SITE, CONTRACTOR SHALL MEET THE REQUIREMENTS AS PER BHEL INSTRUCTION/MANUAL ETC.

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## 4.2 **General Note:**

**4.2.1** The above list is only indicative and neither exhaustive nor limiting. contractor shall **deploy**. all necessary T&P (calibrated) to meet the schedules & as prescribed by BHEL engineer and required for completion of work. Quantities (as required) may be mutually agreed upon and minutes of meeting duly signed for deployment

**4.2.2** For Heavy equipment such as crane, winch machine, etc., the age (i.e from the date of manufacturing) of the contractor deployed Heavy Equipment, at the time of deployment, as indicated above should be less than 10 years from the current year i.e (2026), at project Site. Contractor has to provide documentary evidence/ proof for age of the crane at the time of deployment to BHEL Engineer.

**4.2.3** Considering operational safety, contractor to note that Hydra Shall not be used for material transport. agencies have to deploy the New Generation Pick & carry tyre mounted mobile crane (Farana) of required capacity.

**4.2.4** Regular maintenance period of one day per month shall be permitted and Preventive maintenance period of six days per year with each spell not exceeding three days shall be permitted for the T&Ps.

**4.2.5** All above T&Ps are to be deployed by contractor as and when required as per instruction of BHEL engineer. In case Contractor fails to deploy T&Ps as per requirement of BHEL and work gets delayed/hampered due to non-availability of above T&Ps, BHEL reserves the right to deploy own/hired/otherwise arranged resources and recover the expenses incurred from the dues payable to contractor. Recoveries shall be actual expenses incurred plus 5% overheads/ "BHEL internal hiring rates".

Note: In case of deployment of those T&Ps by BHEL for which item rates are indicated in BOQ, due to reasons attributable to contractor as indicated above, differential of expenses incurred by BHEL/ BHEL internal hiring rates and Corresponding BOQ rate of that T&P, shall be recoverable along with 5% overheads, as applicable.

**4.2.6** IF ABOVE MENTIONED T&P ARE NOT DEPLOYED IN SPECIFIED TIME BHEL SHALL RESERVE RIGHT TO LEVY PENALTY ON CONTRACTOR.

### **4.2.7 Penalty due to non-availability of T&Ps:**

In order to meet the site requirement and in line with monthly plan and review format (F-14), Contractor has to mobilise their T&Ps and make it available at site for required activities.

If contractor fails, due to the cases mentioned hereunder, BHEL shall be entitled to impose penalty on Contractor till any alternate arrangement is made by 'Contractor' OR 'BHEL (on cost recovery basis)'.

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**Case 1:** Contractor fails to mobilize the Crane within the mobilization period of 30 days from the date of intimation by BHEL.

OR

**Case 2:** After mobilization of a particular Crane at site, the work is getting hampered due to non-availability of that Crane for more than 5 days cumulatively in a month.

In both the cases, Penalty shall be levied at the rate of 50% X “daily rate\*” for total no. of days eligible for penalty.

**For Case 1:** Number of days eligible for Penalty = Difference of (date of availability of Crane by Contractor) - (Minus) (30 days from the Date of intimation).

In above case if bidder fails to mobilize referred T&Ps, BHEL may mobilize the same and in that case aforementioned ‘date of availability of ‘Crane’ shall be reckoned from the date T&P is made available by BHEL.

**For Case 2:** Number of days eligible for Penalty = (Number of days in a month, in which work is getting hampered, due to non-availability the crane) – (Minus) (05 days)

**Daily Rate\* = Monthly hire Charge /30.**

**NOTE:**

- For calculation no. Of days in a calendar month is taken as 30.
- Monthly crane charges as derived in the “schedule of rates & quantities”.
- Monthly charges shall not be payable for the period of breakdown of crane.

**4.2.8** All the T&Ps deployed by the bidders shall have valid test certificates, fitness certificates, registration certificate, insurance etc. The documentary proof shall be submitted to BHEL engineer along with applicable valid certificates.

**4.2.9** Crane log sheet for each of the crane on daily basis is to be certified by the BHEL engineer. Contractor shall submit the monthly running account bills along with duly certified log sheets.

**4.2.10** Any or part or all of the T & Ps of the contractor identified for the tendered package shall not be engaged for any works other than that of the works intended in this tender. However, BHEL reserves the rights to engage those T&Ps for which separate monthly rates are being paid as per finalized SOQR “SCHEDULE OF RATES & QUANTITIES” within the project premises for its own works other than that of the works intended in this tender during the period of contract. In such cases fuel will be provided by BHEL. However, operator for the same shall be provided by the contractor.

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4.2.11 During the extended period of framework agreement contract (beyond 48 month), services of T&Ps shall be provided by the contractor as per the instruction of BHEL engineer. The monthly charges towards deployment of the particular T&Ps beyond the specified quantity in BOQ shall be paid at the following rate:

Rate of 90 % of monthly awarded rates upto 25% of BOQ quantity.

Rate of 85 % of monthly awarded rates upto 50% of BOQ quantity.

Beyond 50% of BOQ quantity, the rate shall be mutually agreed upon.

4.2.12 The wooden sleepers shall be taken back by the contractor (if no separate payment made by the BHEL for the wooden sleepers) on as is where is basis after completion of work. No claim on account of damage /loss shall be payable by BHEL. If BHEL has made the separate payment of the wooden sleepers then same shall be return to the BHEL store.

4.2.13 25% of wooden sleepers shall be mobilized by the contractor in the first month of contract and balance as per BHEL instruction.

4.2.14 Quantities of Tarpaulin (fire proof and waterproof) as indicated shall be mobilized by the contractor as directed by BHEL.

4.2.15 Contractor shall ensure that the pressure parts (panels as well as loose tubes) received at site, are covered with plastic caps/plugs at both ends. Contractor shall install such plastic caps/plugs for pressure part pipes/tubes/panels. Any requirement of plastic caps/plugs, shall be arranged by BHEL.

4.2.16 Duration for deployment of T&Ps for which separate monthly hiring rates will be paid as per finalised "SCHEDULE OF RATES & QUANTITIES" is tentative and may change as per requirement.

4.2.17 Mobilisation and demobilisation of all T&Ps shall strictly be done as per the instructions from BHEL. BHEL also reserves the right to direct the contractor to dis-continue/ demobilise any/all of these cranes within the contract period/extended contract period with 30 days (minimum) advance written notice without assigning any reason. No payment shall be made after, 'the notified date of demobilization/discontinuance by BHEL in its notice' or 'the actual date of demobilisation/discontinuance by contractor', whichever is earlier.

4.2.18 No payment shall be made for mobilisation and demobilisation of Cranes/ T&Ps, other than for which rate is specifically mentioned in BOQ.

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## Chapter-V T&Ps to be deployed by BHEL on sharing basis

<b>5.0</b>	<b>LIST OF T&amp;P TO BE PROVIDED BY BHEL ON HIRE CHARGES BASIS AND ON SHARING BASIS:</b>
<b>5.2</b>	<p>Note:</p> <ol style="list-style-type: none"><li>1. The cranes may be BHEL owned or BHEL Hired crane may be obtained on hiring basis including operating and maintenance crew.</li><li>2. Operator and O&amp;M for hired crane will be provided by the hiring agency.</li><li>3. Contractor shall provide the fuel for BHEL (Hired/owned) provided cranes for his use.</li><li>4. Above crane will be provided by BHEL for unloading of only major Heavy consignment where contractor's crane or combination of cranes are not capable of doing the mentioned scope of work.</li><li>5. BHEL reserved the rights to not arranged the cranes &amp; T&amp;P as mentioned above for any reason for the execution of the material handling work.</li></ol>
<b>5.3</b>	<p>Cranes provided by BHEL will be on sharing basis with other agencies / contractors of BHEL. The allocation of cranes shall be the discretion of BHEL engineer, which shall be binding on the contractor. Cranes will be deployed at appropriate time as decided by BHEL for suitable duration and intended purpose.</p>

## Chapter– VI: TIME SCHEDULE

### 6.0 Time Schedule and Mobilization:

#### 6.1 Initial Mobilization

After issue of LOA (email) the contractor shall report to the Construction Manager/Site In-Charge of BHEL at site within seven (07) days from date of LOA and submit detailed mobilization plan to start work within 15 days from date of LOA; unless otherwise instructed by BHEL in writing.

The date of “START OF CONTRACT PERIOD” shall be mutually agreed date between bidder and BHEL engineer in charge.

#### 6.2 Augmentation of Mobilization

Contractor shall subsequently augment his resources in such a manner that daily errands/activities shall be completed on daily basis and the entire work is completed within the time schedule/contract period. Mobilization of contractor’s resources shall be made and augmented from time to time in such a manner that the work in scope is carried out in an uninterrupted manner.

6.3 The framework Agreement contract period for completion of entire work under scope shall be 48 (Forty-Five) months from the “START OF CONTRACT PERIOD”.

If work is not completed with-in the FA contract period, the contract may be extended at the discretion of BHEL.

6.4 Overall project schedule for this Project shall be as mutually agreed between BHEL & Contractor.

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

### 6.6 CONTRACT PERIOD:

The FA contract period for completion of entire work under the FA scope shall be 48 (Forty-eight) months from the —COMMENCEMENT OF CONTRACT PERIOD as specified earlier for completion of the entire work under this package. For First LOA under FA shall be for 24 months. Other subsequent LOAs/WOs quantity and period shall be placed as per site requirement.

### **6.7 GUARANTEE PERIOD**

BHEL Engineer shall certify to the contractor the date on which the work is completed and the date thereof for commencement of Guarantee Period for good workmanship and contractor shall rectify free of cost all defects due to faulty work under their scope during the guarantee period. Guarantee Period shall be as given in GCC.

### **6.8 PROTECTION OF WORK**

The contractor shall have total responsibility for protecting his works until it is taken over by the Employer. No claim will be entertained by the Employer or the representative of the Employer for any damage or loss to the Contractor's works and the Contractor shall be responsible for complete restoration of the damaged works to original conditions to comply with the specification and drawings. Should any such damage to the Contractor's Works occur because of other party not being under his supervision or control, the Contractor shall make his claim directly with the party concerned.

If disagreement, conflict, or dispute develops between the Contractor and the other party or parties concerned regarding the responsibility for damage to the Contractor's Works the same shall be rectified. The Contractor shall not cause any delay in the repair of such damaged Works because of any delay in the resolution of such disputes. The Contractor shall proceed to repair the Work immediately and no cause thereof will be assigned pending resolution of such disputes.

### **Chapter-VII: MATERIAL HANDLING & MATERIAL MANAGEMENT OF MATERIAL RECEIVED AT SITE.**

- 7.1 Majority of consignments shall reach site directly for delivery. However, a few number consignments shall be booked on Godown delivery basis or door delivery against consignee copy basis, the procedure of material collection shall be adopted as detailed in relevant chapter.
- 7.2 It will be responsibility of the contractor to keep in touch with officials of BHEL regarding advance information about arrival of consignments. The contractor shall collect lorry way bills or other such dispatch documents.
- 7.3 The contractor shall remain in regular contact with the concerned transporters or based on the dispatch details obtained as stated above and make all necessary arrangements for collection / receipt of the consignment as applicable. Contractor shall take advance action to deploy all necessary resources for local transportation, handling and unloading of the anticipated consignments so as to ensure no loss of time upon arrival of the consignments.
- 7.4 Payment of demurrage/ wharfage etc., which result due to contractor's fault, shall be the responsibility of contractor and to his account. If BHEL has to make payment of such demurrage/ wharfage together with freight (payment of freight alone is in BHEL scope), the amounts so paid as demurrage/wharfage for the reasons stated above shall be paid to BHEL by the contractor forthwith or shall be recovered from the bill payments due to the contractor.

If it is found that handling and unloading of the consignment are delayed deliberately by contractor (i.e. delay is fully attributable to contractor), which may result in to long queuing of Lorries, penalty shall be imposed as per following:

<b>No. of Days of Deliberate Delay</b>	<b>Rate of penalty in each case</b>
03 to 05 days	@Rs. 500 per day per truck/ lorry/ trailer
06 to 10 days	@Rs. 1000 per day per truck/ lorry/ trailer
More than 10 days	@Rs. 2000 per day per truck/ lorry/ trailer

- 7.5 It would be the responsibility of the contractor to examine the packages, consignments etc. Immediately on arrival and bring to the notice of BHEL authorities regarding loss/damage/shortage/discrepancy, if any, observed in the consignments before taking delivery of the same.
- 7.6 Any discrepancy/shortage/damage found in the consignment after taking clean delivery from the carriers shall be the responsibility of contractor and the resultant loss to BHEL on such account shall be recoverable from the contractor due to negligence/ carelessness on the part of the contractor.

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- 7.7 Consignments are expected to arrive during any time of the day, and count down for detention/demurrage/wharfage charges is liable to start immediately. Unloading of such consignments may be necessitated even in the night or round the clock. Contractor shall arrange to deploy his resources immediately and continue round the clock on such occasions without any additional cost to BHEL. Contractor shall arrange all necessary resources including spot lighting for working at night. The contractor shall similarly unload consignments arriving on weekly off days and holidays.
- 7.8 Unloading at storage area/work site, stacking and restacking if necessity arises, of all materials including heavy/sophisticated equipments like tubed wall panels of boiler, heavy motors, heavy bearing pedestals, electrical panels and TG equipment like heavy turbine components, pumps, panels, etc. Shall be done as per storage and preservation manual of relevant equipment/components of BHEL and/or as per directions of BHEL engineer.
- 7.9 The contractor shall verify the consignments in detail **within 12 days of receipt and report the discrepancies in prescribed formats not later than 14th day**. Any loss on account of delayed reporting shall be recoverable from contractor's bill/any payment due. Contractor shall arrange all facilities to open packages – where required in the presence of BHEL engineer, verify the contents, repack wherever and whenever called for and properly stack them as per storage manual or/and as may be directed by BHEL.
- 7.10 The material shall be so stacked that it should facilitate easy identification, retrieval and handling for issue as and when need arises.
- 7.11 Pre-defined identification system of the locations of open storage yard, semi-closed shed, covered stores as well as storage racks has to be designed/prepared by the contractor with the approval of BHEL. Contractor shall put up prominent identification boards of segmental locations (for open and closed stores) or inscription (on the storage racks) with clear visibility from a distance. Contractor shall also arrange to display plot plan at regular intervals in the covered/semi-closed/open storage. The contractor shall arrange proper displays/signs for various requirements as per instructions of BHEL.
- The display boards shall be made with structural steel & M.S. plates and shall be painted with synthetic enamel paint. Contractor shall have to periodically repeat such exercise as the original displays may get lost / damaged / deteriorate with time. All materials and consumables for this purpose shall be arranged by the contractor. Contractor shall have to make his own arrangements including supply of materials for displaying the proper identification tags, boards, marking, inscription etc. As scope of work.
- 7.12 The contractor shall execute the work in a professional manner. The stores shall be handled with due care and diligence. The contractor at his own cost shall make good, any loss to BHEL due to contractor's lapse.

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7.13 For all consignments, observations regarding loss/damage/shortage/ discrepancy is to be recorded in appropriate document and informed to BHEL. In case it becomes necessary to take 'OPEN DELIVERY' from the authorities, contractor shall make all arrangements for taking open deliveries. All expenses connected therewith shall be to the account of contractor. Any loss that accrues to BHEL on account of such failures shall be debited to the contractor and recovery effected from his running bills.

7.14 **HANDLING HEAVIER CONSIGNMENTS:** Contractor shall submit procedure with sketches of handling of all heavy components to BHEL well in advance and obtain prior approval before unloading and stacking.

7.15 Since this contract is intended to be a complete package from material receipt through issue/transactions right up to material reconciliation, full responsibility w.r.t the proper upkeep of facilities e.g. computers, stationary items; ensuring befitting discipline among the store assistants/staff under its control and accounting of materials on stock shall rest with the contractor at all times.

In the remote possibility of any untraceable material, customarily BHEL has to process the insurance claim. To kick off such claim, the contractor shall render all necessary assistance including augmentation of documents (FIR etc) within the quoted price as may be required for realization of the insurance claim.

7.16 The contractor under this contract shall complete induction of following categories of resources within the quoted item rates, to ensure establishment of proper materials management at the project site.

- a) Computers and printers with latest up-gradation, memory and compatible with BHEL computers/LAN equipment to be installed/used within BHEL site office – **Computer – 03 sets & printer cum scanner – 1sets, Photocopier machine-1No. & Hard disk – 02 no** (for monthly backup of records). Computers and printers are envisaged for various Material Management activities such as record keeping/data entry done by bidder's staff.

These resources (i.e. computer/ printer cum scanner/ photocopier machine/ hard disk) shall remain contractor's property/ownership for all legal/technical purposes. The resources as mentioned above shall remain at BHEL offices during the contract period/ extended period (if any). These shall be taken back by the contractor after completion of job or when requirement is over, as certified by BHEL Engineer, whichever is earlier.

This facility has to be provided as directed by BHEL till completion of job or as decided by BHEL, as mentioned above. If contractor fails to provide mentioned resources as per requirement, for a continuous period of fifteen days or more, BHEL shall have the right to purchase it on behalf of contractor and recover the expenses incurred from the dues payable to contractor. Recoveries shall be actual expenses incurred plus 5% overheads.

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NOTE: The contractor shall provide above resources for carrying out functions/operations as stated above. The no. of resources indicated above is tentative and actual deployment may vary based on work load and site requirement. The requirement schedule shall be finalized in the beginning of the contract period/extension period with Engineer Incharge. Contractor shall ensure availability of resources during extension period as well. This does not absolve the contractor from his responsibility towards the satisfactory execution of the job.

- b)
- c) Contractor shall ensure availability of sufficient manpower, supervisor and T&Ps to execute the awarded work, to meet the site requirements. During peak stage no. of vehicle, pending for unloading, may go up to 20 nos. or above Per day.

### **7.17 RESPONSIBILITIES OF THE CONTRACTOR –**

#### **7.17.1 RECEIPT & ISSUE Scope includes execution of various activities as follows:**

- a) Receipt, unloading, carrying out receipt inspection, detailed verification, stacking and regular stock verification of materials at site.
- b) Preparing various reports at appropriate stages and reporting damage/loss during receipt as well as storage and any other associated responsibility as assigned by BHEL from time to time. Responsibility shall include the following activities.
  - Examination of incoming consignments to detect any loss or shortage or outward damage and recording it on the LR/LWB before making acknowledgement of it's receipt from the transporter and simultaneously obtaining endorsement of the vehicle driver on the same.
  - Reporting such discrepancy to BHEL immediately on receipt of the consignment.
  - Assisting BHEL in lodging insurance claims in respect of loss/damage as stated above.
- c) Issue of materials to BHEL's erection contractors, preservation of stacked materials, restacking/re-handling as necessary, progressive and final reconciliation with BHEL's erection agencies and preparation of necessary document/ record in respect of these activities.
- d) Return of excess/defective materials by various erection contractors of BHEL
- e) **LOADING AND DISPATCH OF OUTGOING MATERIALS.**
- f) **EXPECTED MINIMUM QUALITY OF SERVICE**

Contractor shall render the services by ensuring deployment of requisite personnel with adequate educational qualification having thorough experience in related field to enable understanding the intricacies of and special requirements involved in handling of project materials, inconsistencies and uncertainties associated with in/out flow of materials, project activities at odd hours & holidays and irregular working hours. Contractor shall ensure prompt and timely availability of such services.

### 7.17.2 **PRESERVATION OF COMPONENTS**

Contractor shall arrange for preservation of components as per BHEL's storage and preservation manual and/or as per instructions of BHEL engineers.

one or more of following methods shall be adopted for preservation.

- 1) Coating with preservative paints/lubricant/inhibitors
- 2) Capping/wrapping/covering
- 3) Filling/immersion in oil/chemicals etc.
- 4) Periodic checks/maintaining required nitrogen pressure in tanks of transformers; BHEL will provide the nitrogen gas for the same. However, contractor shall handle the cylinders at stores, transport to point of use, fitup refills and return empty cylinders to BHEL stores.
- 5) HT motors

For preservation of HT motors, space heaters have to be kept energized to avoid ingress of moisture. Insulation resistance has to be measured and recorded at specified intervals till these are issued for erection. BHEL will provide necessary cables, switches etc. For this, however contractor shall install, operate and maintain the same.

In the process the identification marks, component/material codes, match marks may have to be repainted. This work after preservation components are to be stacked properly, periodical reports on the preservation carried out should be submitted to BHEL in the prescribed formats.

### 7.17.3 **RECORD KEEPING –**

Contractor shall prepare, maintain and update various MM records, associated with materials management operation of BHEL at project site. Two systems of record keeping/capturing information & data at various stages are in vogue viz.

- i. Manual ledgers & records.

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- ii. Computerized database application as available/develop that captures all the data in the entire chain of transactions starting with master list of project materials, records of dispatch, receipt, inspection, issue, return, consumption etc.

Some of these records are master shipping/packing list, LR/RR register, daybook register, stock register, records of issues to & return of materials in respect of various erection subcontractors, insurance claim records, periodical status reports in various formats covering desired aspects and output information as per BHEL/CLIENT'S requirement.

Contractor will provide necessary hardware, software & stationary etc. And shall take utmost care to ensure that these properties and records are protected from any damage or loss. BHEL will recover the cost of such property / expenses of restoration from the contractor with overhead charges in case of any loss/damage attributable to negligence/failure on contractor's part.

### 7.18 **RESPONSIBILITIES OF THE CONTRACTOR** –

CONTRACTOR HAS TO MOBILIZE BELOW MENTIONED MANPOWER, OTHER THAN SECRETERIAL AND MIENIAL SERVICES MANPOWER MENTIONED, ELSE WHERE IN THIS CONTRACT.

Providing below mentioned manpower is included in the scope of work of Contractor and there shall not be any separate payment for this, under PART-C of rate schedule.

SL NO	ACTIVITY/DESCRIPTION	TENTATIVE NO. OF PERSONS	REMARKS
1	MATERIAL RECEIPT/ UNLOADING, COLLECTION/ BOOKINGS/ DETAILED VERIFICATION & PRESERVATION	2	To be deployed from the start of contract OR as per instruction of BHEL Engineer
2	MATERIAL ISSUE, RECORD KEEPING (BOILER, TG, ELEC, C&I, MRC, ASSISTANCE IN INSURANCE CLAIMS, AND T&Ps ETC.)	2	
3	SAFETY OFFICER	To be deployed as per HSE Manual	

**NOTE:** The contractor shall deploy skilled people (preferably diploma holders) for carrying out functions/operations stated above. The no. of persons indicated above is tentative and actual deployment may vary based on work load and site requirement. **The manpower requirement shall be finalised in the beginning of the contract period/extension period with Engineer In-charge.** Contractor shall ensure availability

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of manpower during extension period as well. This does not absolve the contractor from his responsibility towards the satisfactory execution of the job.

In case the contractor does not deploy or delays deployment of above said manpower with reference to specific instructions from BHEL, BHEL will recover non-refundable penalty per man- day @ Rs 500/-

## **Chapter-VIII- RE-SHIFTING AND RESTACKING**

8.1 Owing to several project requirements, many components may have to be shifted from originally stacked locations to elsewhere within the project premises for better management. This may involve loading of such material onto a vehicle moving to a new location and unloading/stacking including proper inscription of identification marks if needed. List of items duly certified by BHEL official, shifted, updated stock records about change in location etc shall be prepared/submitted along with the monthly bills.

Transportation of counter weight/structure from one location to other location (within project premises) for load testing of crane/EOT is in the scope of contractor. The said work shall be treated as re-shifting of material.

Separate item rate is available for re-shifting and restacking of stacked materials and the payment will be regulated on pro-rata basis on the accepted unit rate calculated as per finalized “SCHEDULE OF RATES & QUANTITIES”.

### **8.2 Re-stacking/re-arranging**

Over a period of time, restacking/rearranging of the materials stacked earlier may arise due to various reasons. The handling of such items will also be in the scope of this contract. The restacking/ re-handling may be necessitated for any equipment/ materials covered within this work specification. Contractor shall deploy necessary resources like manpower, T&P, equipments etc to carry out this exercise including proper inscription of identification marks if needed. List of items duly certified by BHEL official, restacked, updated stock records about change in location etc shall be prepared/submitted along with the monthly bills.

Restacking/re-arranging shall be applicable for materials returned by BHEL’s erection contractors as well.

Separate item rate is available for re-shifting and restacking of stacked materials and the payment will be regulated on pro-rata basis on the accepted unit rate calculated as per “schedule of rates & quantities”

## **Chapter-IX- Outgoing materials/dispatches**

For varying reasons many a times, project materials/BHEL assets/scraps materials are to be dispatched to other BHEL sites/mfg. Units/other locations.

Contractor shall identify, tag, pack and prepare gate passes for the materials to be dispatched. Materials shall be loaded onto the outgoing vehicles with due care and handed over to the transporter with clear goods receipt which shall be submitted with BHEL promptly. BHEL shall make arrangement for the transport vehicles at its own cost.

Payment will be regulated on pro-rata basis on the accepted unit rate as per finalized “SCHEDULE OF RATES & QUANTITIES”.

## **Chapter X- General Terms**

- 1. General terms are as hereunder.**
2. All the work shall be carried out as per the instructions of BHEL engineer. BHEL engineer's decision regarding the correctness of the work and method of working shall be final and binding on the Bidder.
3. The Bidder shall at his cost perform any services, tests etc, although not specified but nevertheless required for the completion of work.
4. If any portion of the work is found to be defective in workmanship or not conforming to BHEL requirements, the Contractor shall re-do the work at his cost failing which the work will be got done by BHEL at the cost and risk of the contractor.
5. All tools and tackles, fixtures, equipment, materials, manpower, supervisors/ engineers, consumables etc. required for this scope of work shall be provided by the Contractor. All expenditure including taxes and incidentals in this connection will have to be borne by him unless otherwise specified in the relevant clause.
6. The contractor shall make adequate security arrangements including employment of security personnel and ensure protection from theft, fire, pilferage, damage and loss of materials/equipment kept under bidder custody.

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7. All equipment shall be handled very carefully to prevent any damage or loss. No bare wire ropes, slings etc, shall be used for handling of the equipment without the specific permission of the engineer.
8. Contractor shall ensure proper housekeeping and remove all scrap materials periodically from various work area covered in the scope and deposit the same at the place earmarked for this purpose. In case of contractor's failure to do the same, BHEL reserves the right to remove scrap at contractor's cost and risk.
9. Access to site for inspection by BHEL and customer engineers shall be made available by the contractor at all times.
10. Contractor shall mobilize sufficient quantity of sleepers for stacking of materials in his custody.
11. Site Inspection: The owner/employer / BHEL or his authorized agents may inspect various stages of work during the period of contract awarded to him. The contractor shall make necessary arrangements for such inspection and carryout the rectification pointed out by the owner/employer without any extra cost. No cost whatsoever for such duplication of inspection/work will be entertained.
12. The contractor agrees to indemnify the company against all claims and losses arising as a liability under the Payment of Wages Act, Employees Provident Fund & Miscellaneous Provisions Act, Industrial Disputes Act, Employees State Insurance Act, Contract Labour (Regulation and Abolition) Act, Workmen's Compensation Act, Arbitration Act, Minimum Wages Act, Inter State Migration Act, etc. or criminal law in force so far as they relate to security personnel employed by the contractor for the company.
13. With regard to the interpretation of the terms and conditions of this contract, the decision of the Head of the Region/BHEL PE&SD shall be final.
14. Any addition/ deletion on the scope of work and terms and conditions under this contract shall be implemented based on mutual discussions between the "company" and the "contractor".
15. Contractor shall provide FIRST AID / emergency medical facilities and maintain these facilities throughout the contract period & extension period (if any) as scope of work.
16. Dewatering inside material storing area for equipment is contractor scope.
17. The contractor shall return all parts, materials & consumables of BHEL remaining unused & extra material in their custody. In case of any misuse or use over actual requirement,

## Technical Conditions of Contract (TCC)

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BHEL reserves the right to recover the cost of parts/materials used in excess or misused, with departmental charges.

18. No BHEL crane will be available under this tender specification for handling of equipment. Contractor shall take specific note of this aspect and shall arrange all necessary T&P and lifting/handling/transportation arrangements.
19. For any class of work for which no specifications have been laid down in these specifications, work shall be executed as per the instructions of BHEL & suit the site requirement.
20. The contractor shall perform all required services which may not be specified herein but nevertheless required for the completion of work within quoted rates.
21. The contractor shall take due precaution during Materials Handling of equipment/works under these specifications to avoid deface, injure, damages, destruction by contractor or his workmen or servants to any pipelines, railway lines, roads, canals, cables, culverts, drains, sewer, telephone lines, water mains, dykes, poles, pillars, fences, wires, supports and embedment's and other underground or over ground works, Structural or constructions whatsoever and shall at his own cost and initiative forthwith restore and repair any damage thereto the entire satisfaction of customer/BHEL at his own expense or in default, the customer/ BHEL site engineer may cause the same to be made good by other agency or by other means and deduct the expense with BHEL overhead (of which the site engineer's decision is final) from any sums that may be then or at any time thereafter become due to the contractor or from his security deposit or any other money due.
22. As such, the marine cover and erection all risk cover insurance for the project for permanent incorporation of materials and services at site lies with customer/BHEL. The contractor shall have to take necessary all risk insurance policy (motor vehicles act, worker's compensation act, fatal accidents act, personal injuries insurance act, emergency risk insurance act and/or other industrial legislation from time to time with Indian insurance company(ies) approved by owner for his manpower and his employees deployed at site under work compensation act including but not limited to third party insurance at the project along with his T&Ps before starting of the work and shall submit the necessary document/policy in support of above to BHEL/customer at site. The insurance policy taken shall be kept in-force till completion of contract. The workmen's compensation insurance and third-party insurance liability limits shall be as customer specification. Contractor shall indemnify the customer/ BHEL harmless against such losses, which are on account of contractor.
23. Recoveries will be made from contractor's bills for any liability accrued to BHEL/ Customer for the accidents and refund of the same shall be considered later, after the claim is fully settled by insurance authorities.

## Technical Conditions of Contract (TCC)

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24. Customer/BHEL has taken the marine cover and all risk cover insurance for the project for permanent incorporation of materials and services at site. However, contractor shall take all due precautions, arrange & follow the safety & security requirements/regulations for materials issued to him & works under his execution and shall be responsible for safety & security of these materials & works for any loss or damages. For any damage / loss to the material during inland transportation, storage etc., contractor shall intimate promptly to BHEL/customer and shall prepare & submit the necessary detailed report / documents / information, facilitating inspection / discussions by the officials / surveyors deputed by insurer with all expenditure on contractor's account. Contractor shall take care for timely information for conducting survey, submission of monetary estimate & furnish the requisite documents to surveyors/insurer, taking necessary precautions so that the loss/damage is not aggravated further, protecting damaged goods etc. As part of scope of work.
25. Contractor shall promptly make repair / rectify/replace and make good any damage or loss to Customer /BHEL materials and works on above account as per instructions of BHEL engineer in charge at site without any delay & waiting for settlement of insurance claim from insurer. Contractor's claim (if any) for such works will be settled as per applicable item rate of contract after settlement of claim from insurer / customer & after ascertaining / establishing that contractor is not responsible for such loss or damages. The contractor's claim for such repair / replacement shall not be more than the payment settled by insurer / customer and in such case the contractor's payment will be limited to seventy percent of settled amount by insurer/customer against claim amount.
26. The contractor shall submit survey report/performance report of the tools and plants deployed by him and being utilized on the work under the scope. These survey reports/performance reports are to be obtained by contractor from the customer of BHEL/insurance authorities and submitted to BHEL at no extra cost.
27. Contractor shall deploy & maintain, the separate exclusive workforce / manpower arrangements and T&Ps resources including the heavy lift equipment /arrangements for Material Handling scope of works.
28. The wooden pallet provided for packing itself can be retained for raised platform to protect equipment from ground damp, sinking into around and to circulate air under the stored equipment. This shall also help in lifting the packing with forklift truck.
29. Periodic inspection of silica gel placed inside the equipment is necessary. It has to be replaced when decolorization takes place or regenerated.
30. Due care should be taken to ensure that the equipment is not exposed to fumes gases etc. which can affect electrical contacts of relays and terminal boards.

## Technical Conditions of Contract (TCC)

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31. The storage room and the equipment should be checked at regular interval of every week to ensure protection from termites, mold growth, condensation of water etc. which can damage the equipment.
32. All panels, electrical equipment's, and other materials kept in the store room should be identified and registered in a book. Inspection report should be recorded. Any discrepancy observed should be communicated to Site In-charge.
33. Packing material shall be retained if the cubicle to be repacked after inspection.
34. Cables shall be stored separately and preserved above the wooden supports.
35. **Sub-Assemblies**
  - All sub-assemblies should be kept in a separate place where it is easily accessible.
  - Sub-assemblies should have a protective cover in case it is stored without wooden packing/case to prevent accumulation of dust. Silica gel packets should also be kept along with it.
  - Sub-assemblies should not be stacked one above the other.
36. **Loose items (wherever applicable):** -The loose items supplied for the main equipment falling into various categories like tools, cables, recorders and display units, cable glands, frames etc. are to be categorized and stored separately.
37. The Site In charge shall be present at site during all normal working hours and his contact address after normal working hours shall be made available to BHEL so that if any emergency arises, the presence of the contractor's site Representative at site can be called for.
38. All instructions from BHEL/Customer shall be directed to the contractor through the Site in-charge and he shall be responsible for all the contractor's activities at site. The contractor shall name his authorized representative prior to or immediately on commencement of operations at site.
39. The contractor shall not change the site Representative without the consent of BHEL. Should BHEL require the replacement of the contractor's site Representative for justifiable reasons (including inadequate progress of work) the contractor shall ensure that replacement is made as soon as possible and work is not allowed to suffer delay on this account.
40. The contractor shall provide to the satisfaction of BHEL sufficient and qualified staff for the execution of works. If and whenever any of the contractor's staff is found guilty of any misconduct or be incompetent or insufficiently qualified in the performance of his duties the contractor shall remove them from site as directed by Site Engineer.
41. The contractor shall ensure that replacement for such persons removed from site is provided immediately and the work is not allowed to suffer delay on that account.

## Technical Conditions of Contract (TCC)

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42. It is the responsibility of the contractor to provide all relevant information on a regular basis regarding progress, labour availability, equipment deployment, testing, etc.
43. The contractor shall submit daily, weekly and monthly progress reports, manpower reports, material reports, and equipment reports etc. as per formats specified by BHEL. The progress reports shall indicate the progress achieved against plan, indicating reasons for delays, if any. The report shall also give remedial actions which the contractor intends to make good the slippage or lost time so that further works can proceed as per the original plan the slippages do not accumulate and affect the overall Programme.
44. The contractor to reflect actual progress achieved during the month and shall be submitted to BHEL, so that slippages can be observed and necessary action taken in order to ensure that the situation does not get out of control shall update the construction schedule forming part of this contract each month.
45. If required by BHEL, the contractor shall change the sequence of his operation so that work on priority sectors can be completed within the projects schedule. The contractor shall afford maximum assistance to BHEL in this connection without causing delay to agreed completion date.
46. In addition, a weekly / fortnightly progress meeting shall be held at BHEL site office for coordinating job progress and all agreements reached there at shall be maintained.
47. Wherever sequences are furnished by BHEL, the contractor shall follow the same sequence.
48. The manpower reports shall clearly indicate the manpower deployed, category wise specifying also the activities in which they are engaged.
49. During the course of Material handling, if the progress is found unsatisfactory, or if the target dates fixed from time to time for every milestone are to be advanced, or in the opinion of BHEL, if it is found that the skilled/unskilled workmen like rigger, helper, slinger, operators, other staffs employed are not sufficient, BHEL may induct required additional workmen to improve the progress and recover all charges incurred on this account including all expenses together with BHEL overheads from contractor's bill.

## Technical Conditions of Contract (TCC)

### Chapter XI-Supply Installation, Commissioning, operation & maintenance ,dismantling after contract completion and removal from site of CCTV Camera system in storage area.

- i. Supply & installation of CCTV system for storage areas, geofenced with fixed camera around the boundary and covering of entire inside area of storage (both open yards and covered sheds) with cameras such that there should not be any dark patch. Surveillance camera should have a backup of at least two months. All hardware and software required to meet above intent shall be in the scope of bidder.
- ii. Comprehensive maintenance of the CCTV system including all components of the original supply scope as well as accessories, required for keeping the CCTV system operational.
- iii. The scope of spares and consumables as may be required is included in the scope of Contractor at no extra cost to BHEL.
- iv. Contractor shall monitor the operations of CCTV in store yard. Contractor shall immediately inform BHEL in writing, in case any CCTV camera/ necessary component is found non-operational. The faulty component shall be restored within three days from the date of intimation by BHEL/Contactor. BHEL shall be informed in writing about the daily status of material handling activities carried out in the area where CCTV surveillance not being carried out.
- v. The contractor shall provide the following components (**Annexure-1**) for the surveillance system of the storage space. The quantity mentioned is tentative and may be changed to suit project requirement as decided by BHEL Engineer.

#### **Annexure-1**

SL No.	Item Name	Quantity	Unit
1	08ch Full HD high resolution machine with all channel audio supported (Make-Hikvision or any equivalent reputed make)	2	Pcs
2	High resolution 40mtr colour outdoor bullet camera with audio	4	Pcs
3	High resolution 20mtr night vision colour bullet outdoor camera with audio	10	Pcs
4	2000GB storage HDD surveillance	2	Pcs
5	20amp supplier	2	Pcs
6	Connectors BNC	42	Pcs
7	Junction BOX for camera mounting	14	Pcs
8	Full HD copper 3+1 outdoor cable	1000	Mtr
9	Mobile 5G access point for online view	2	Pcs
10	Full HD 43-inch display	2	Pcs
11	Installation, machine configuration & online setup	14	Pcs

# Technical Conditions of Contract (TCC)

## Chapter-XII: Supply, E&C & O&M of Power feeder Pillar for site Project work.

**Scope of the work: -Supply, installation, testing, commissioning, O&M, dismantling after contract completion and removal from site of "415V 63A Feeder Pillar, 415V 125A Feeder Pillar and 415V 250A Feeder Pillar" on monthly hire basis as per technical specifications and approved drawings (Including all cabling, connections with customer compact sub-station, civil & structural Works).**

### Technical specification for Electrical Works

#### CONTENTS

CLAUSE NO.	DESCRIPTION
1.0	Intent of Specification
2.0	Site Conditions
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5.0	Codes and Standards
6.0	Order of Priority
7.0	General Requirements
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10.0	Documentation
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13.0	Special Conditions
14.0	List of Sub-Vendors
15.0	Price Format
16.0	Deviation Schedule
17.0	Check List for Bid Submission

#### ANNEXURES

SL. NO.	ANNEXURE NO.	DESCRIPTION
1.0	Annexure-I	Construction Power Supply Arrangement SLD, Dwg.

# Technical Conditions of Contract (TCC)

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## 1) INTENT OF SPECIFICATION:

This specification covers the design, manufacture, assembly, testing at manufacturer's works, packing and transportation to site of Feeder Pillars Package for Construction Power, complete with all accessories, for efficient and trouble-free safe operation.

It is not the intent to specify completely herein all details of the equipment; nevertheless, the equipment shall be complete and operative in all respects and shall confirm to the highest standard of engineering, design and workmanship.

## 2) Void

## 3) PURPOSE:

3.1 The Feeder Pillars under this enquiry are envisaged as part of construction power supply system of above project. The purpose of Feeder Pillars is distribution of power supply to various construction equipments required to carry out erection and commissioning of the above project.

3.2 Typical electrical loads that may be connected to the Feeder Pillars are grinding machines, welding machines, bending machines, drilling machines, dewatering pump sets, lighting etc.

## 4) SCOPE OF SUPPLY:

4.1 **Supply of Feeder Pillars.**

4.2 **Supply of Incoming side Power Cables for each Feeder Pillar.**

4.3 **Supply of Cable Glands and Lugs for Feeder Pillar end for all Incoming side Power Cables.**

4.4 **Supply of Above Ground Earthing Materials.**

4.5 **Other material as required to complete the work.**

## 5) CODES AND STANDARDS:

5.1 The equipment to be furnished under this specification shall be in accordance with the applicable section of the latest version of the following BIS standards unless otherwise specified:

<i>Standard</i>	<i>Description</i>
<b>IS 60947</b>	LV Switchgear and control gear

## Technical Conditions of Contract (TCC)

<b>IS 60529</b>	Degree of protection
<b>IS 8623, IS 61439</b>	Factory built assemblies of switchgear & control gear for voltages up to & including 1000 V AC & 1200 V DC
<b>IS 10118</b>	Code of practice for installation & maintenance of switchgear
<b>IS 5578 &amp; 11353</b>	Guide for uniform system of marking and identification of conductors and apparatus terminals
<b>IS 13703</b>	HRC cartridge fuses
<b>IS 4237</b>	General Requirements for Switchgear and Control gear for Voltages not exceeding 1000 V
<b>IS 5</b>	Colors for ready mixed Paints and Enamels
<b>IS 6875</b>	Switches and Push Buttons
<b>IS 8828</b>	Miniature circuit breaker
<b>IS 2705</b>	Current transformers
<b>IS 3231</b>	Relays
<b>IS 1248</b>	Indicating instruments
<b>IS 8530</b>	AC electricity meters
<b>IS 3202</b>	Climate proofing of electrical equipment
<b>IS 6005</b>	Code of practice for Phosphating iron & steel
<b>IS 5082</b>	Wrought aluminium & aluminium alloys for electrical purposes
<b>IS 694</b>	PVC insulated cables for working voltages up to and including 1100 V
<b>IS</b>	

5.2 The equipment shall also confirm to the provisions of Indian Electricity Rules and other statutory regulations currently in force in the country.

# Technical Conditions of Contract (TCC)

5.3 In case Indian Standards are not available for any equipment, Standards issued by the IEC/ BS/ VDE/ IEEE/ NEMA or equivalent agency shall be applicable.

## 6) ORDER OF PRIORITY:

6.1 In case of any contradictions between various referred Standards/ Specifications/ Data Sheets/ Statutory regulations/ enclosed annexures, the following sequence shall be followed as order of priority:

1. Statutory regulations
2. This specification
3. Codes and Standards

6.2 In case of further contradiction among above documents, it is bidder's responsibility to highlight the same during bid stage itself. Else, BHEL's decision shall be final during execution. The same shall be complied without any time/ cost implication to BHEL.

### *a* GENERAL REQUIREMENTS:

*b* The offered equipment shall be brand new with state of art technology and proven field track record. No prototype equipment shall be offered.

*c* Only major relays, meters and controls are indicated in the SLD. Any auxiliary relays, timers, switches, contactors, contacts, indications etc. as required while developing the control schematics and felt necessary for safe operation, even if these are not specifically mentioned, shall be supplied without any time and price implications.

7) Void

## 8) TECHNICAL REQUIREMENTS:

8.1 void

### 8.2 Operating Conditions:

<i>Sl. No.</i>	<i>Description</i>	<i>Data</i>
<i>1</i>	Voltage	415V $\pm$ 10%
<i>2</i>	No. of Phases	3-phase
<i>3</i>	Frequency	50Hz $\pm$ 5 %
<i>4</i>	Fault Level	As specified in SLD
<i>5</i>	System Earthing	Solidly Earthed

## Technical Conditions of Contract (TCC)

6	Auxiliary Supply	240V $\pm$ 10%, 1-ph, 50Hz AC
7	Control Supply	240V AC for Indication Lamps, ELR and other Control Circuit

### 8.3 Feeder Pillars:

- i The Feeder Pillars of following ratings shall be supplied:

415V 63A Feeder Pillar - 1 no.  
415V 125A Feeder Pillar - 1 no.  
415V 250A Feeder Pillar - 1 no.

Feeder details are as per attached Annexure-III i.e. Construction Power Supply Arrangement SLD, Dwg

- ii The Feeder Pillars shall be **Weatherproof** suitable for installation and satisfactory operation in **outdoor area**. The service conditions shall be considered as typical of a refinery/ petrochemical plant within a coastal environment. The atmosphere is to be considered saliferous, sulphurous and dusty.
- iii All the equipment described in this specification is intended for continuous duty at the specified ratings under the specified ambient conditions.
- iv The equipment design shall be suitable to render satisfactory operation under the conditions prevailing at site, and the equipment shall operate satisfactorily under normal load and voltage variations. The design shall further include all necessary provisions ensuring the safety of the operating and maintenance personnel.
- v All equipments shall be capable of carrying their full load currents without undue heating.
- vi Minimum degree of enclosure protection shall be **IP 55** for the Feeder Pillars. Additionally, GI/ FRP canopy shall be provided.
- vii **The Feeder Pillars shall be of non-compartmentalized design.**
- viii The doors and enclosure shall be made from 2.0 mm thick CRCA sheet steel while the gland plate shall be made from 3.0 mm thick CRCA sheet steel.
- ix The Feeder Pillars shall be suitable for mounting on brick/ RCC pedestal and necessary hardware shall be provided for mounting.
- x Operating height for any component shall not exceed 1600 mm.
- xi Continuous lifting angle or lifting hooks shall be provided to facilitate installation.

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- xii** Close fitting, gasketed, hinged, lift-off doors shall be provided. The doors shall be provided with integral lock and master key.
- xiii** The Feeder Pillars shall be vermin proof.
- xiv** All potential free contacts including unused contacts shall be duly wired to the terminal block.
- xv** All incoming and outgoing connections will be by cables entering from bottom.
- xvi** Removable gland plates shall be provided and adequate working clearance shall be ensured for the termination of cables.
- xvii** The Feeder Pillar shall be provided with door switched lighting fixture, single phase 5/15A socket for power outlet and space heater with thermostatic control.
- xviii** Bus bar conductors/ links shall be made of Aluminium. All connections shall be in accordance with the best modern practice.

Adequate provisions must be made for the expansion and contraction of the bus bars conductors/ links and other bus bar connections with variation in temperature.

Electrical clearances shall conform to applicable standards and shall not require cutting away of adjacent framework.

- xix** Ground bus with 50 x 6 mm Al shall be provided extending throughout the length. All metallic parts not forming part of the live circuits, all instrument transformer terminals to be earthed and other earthing terminals as well as all cable screens shall be connected to the earthing bar. Doors and movable parts shall be connected to the earth bus with flexible copper connections.

Each end of this bus shall be drilled and provided with suitable bolts and nuts for connection to 50x6 GI strip.

- xx** Clearances in air of live parts shall be at least 25.4 mm between live conductors and 19.4mm for phase-to-earth. However, clearances between terminals at components shall be as per applicable individual standards for components.
- xxi** All instruments, control knobs and indicating lamps shall be flush mounted on the front side.

The meters shall be of standard size (at least 72 x 72 mm). The front glasses shall be non-reflecting anti-glare type.

All instruments shall be dust and moisture-proof.

## Technical Conditions of Contract (TCC)

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AC ammeters and voltmeters shall be analogue / digital type of not less than 1.5 accuracy class.

- xxii** Moulded Case Circuit Breakers: MCCBs shall be of single break type having one pole per phase. These shall be of 2 or 3-pole type as required having adjustable thermal magnetic release for overload and short circuit protection, with "On-Trip-Off", indicating/ operating mechanism.

MCCBs shall be manually operated and shunt trip type.

- xxiii** CBCT and ELR: The CBCT and ELR shall be provided for earth fault currents of range 30mA30A.

- xxiv** Terminal Blocks: All terminal blocks shall be mounted in an accessible position with the spacing between adjacent blocks not less than 100 mm and space between the bottom blocks and the cable gland plate being a minimum of 200 mm.

Sufficient terminals shall be provided to allow for the connection of all incoming and outgoing cables of sizes as mentioned in the attached SLD.

Terminal blocks shall be provided with mounting identification numbers and/or letters.

Terminals shall be of the channel mounting type and shall comprise a system of individual terminals so that terminal blocks can be formed for easy and convenient cabling.

Not more than two conductors shall be connected under one terminal clamp.

The live terminals shall be shrouded to avoid accidental contact.

Current transformer terminal blocks shall have provisions for short-circuiting and disconnecting.

Control circuits and power circuits shall be completely separated by use of divided or separate terminal blocks.

At least 10% spare terminals shall be provided.

8.4 Wiring: All secondary and control wiring shall be stranded copper; PVC insulated and shall not be smaller than 1.5 sq. mm with voltage rating 1.1 kV. For current and potential transformer secondary circuits, the minimum cross section of the conductors shall not be less than 2.5 sq. mm with voltage rating 1.1 kV. Larger size wiring shall be used where needed for the current carrying capacity requirements. All connections shall be made with solder less lugs.

## Technical Conditions of Contract (TCC)

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8.5 Wiring shall terminate at terminal blocks at one side only. Where tap connections are required, they shall be made on terminal blocks. Splices or tee connections between terminal points are not acceptable. Wire runs shall be neatly dressed inside the panels or in wiring troughs.

8.6 Indicating and Signalling Lamps: Indication Lamps shall be of Clustered LED Type. Each indicating and signalling lamp shall have a removable cap, which can be inscribed with wording and shall not be affected with the heat of the lamp. Light bulbs shall be replaceable from the front of the panel.

8.7 Name Plates: The Feeder Pillars shall be provided with suitable nameplates, identifying the name of the panel. Each feeder shall be clearly identified with suitably located nameplates. Nameplates shall also be furnished for all feeder components, instruments, lamps etc. Warning/ Danger labels shall be provided outside and inside the Feeder Pillars.

8.8 The Feeder Pillars shall be provided with epoxy based powder coated painting as per manufacturer standard. Paint shade shall be 632 of IS-5.

### 8.9 Cables:

- a) **Incoming side Power Cables for each Feeder Pillar shall be supplied** as per sizes mentioned in attached SLD. The length requirement is mentioned below:

**4C x 50sq. mm Al XLPE Armoured Cable: 300 m**

**4C x 95sq. mm Al XLPE Armoured Cable: 300 m**

**4C x 120 sq. mm Al XLPE Armoured Cable: 600m**

Above cable quantity is tentative. BOQ may vary by  $\pm 20\%$  during detailed engineering. Same shall be confirmed during drawings approval.

- b) Cable shall be XLPE insulated. Armour shall be GI strip wire. Inner and outer sheath of the cables shall be of PVC FRLSH compound conforming to the requirements of type ST 2 compound of IS 5831.

8.10 **Outgoing Power Cables are not in the scope of this enquiry.**

### 8.11 Cable Glands and Lugs:

- a) Cable Glands and Lugs shall be supplied for Feeder Pillar end for **incoming side power cables**.
- b) Cable sizes for incoming side power cables shall be considered as mentioned in attached SLD.
- c) Cable glands for 3-core cables shall be weatherproof double compression nickel plated brass type and Cable lugs shall be of tinned heavy duty copper/ aluminium.

### 8.12 Above Ground Earthing Materials:

- a) 50 x 6 GI Strip - 120 m /As required (For above ground earthing of 63A, 125A, 250A feeder pillars to nearby riser).

### 9) INSPECTION, TESTING AND ACCEPTANCE:

- 9.1. The Manufacturer has to supply the equipments of best quality. The Manufacturer has to maintain quality control during manufacturing of equipments as per the approved Quality Assurance Plan.
- 9.2. Before raising inspection call, manufacturer shall submit all the internal test reports/ certificates for the equipment.
- 9.3. Inspection shall be as per the approved manufacturing quality assurance plan.
- 9.4. All routine and acceptance tests as per relevant IS/IEC standards and as per approved Quality Assurance Plan shall be carried out at manufacturer's works under his care and expense.
- 9.5. All equipments supplied by vendor shall have proven design and shall comply with the requirements of type tests prescribed in the relevant IEC/IS standard. For Feeder Pillars, suitable valid type test certificate for IP Class made on equipment of similar type and capacity shall be submitted during technical bid submission and these type test certificates shall not be older than 5 years from the date of bid submission. In case valid type test certificates are not available or are older than 5 years, vendor shall conduct these tests free of cost and submit the certificates before dispatch without any time and price implications to BHEL.

### 10) DOCUMENTATION:

#### 10.1 Documents to be submitted along with the technical bid/ offer:

- a) Deviation schedule
- b) Feeder Pillar-wise GA, dimensions and weights
- c) Type test certificate for Feeder Pillars as per relevant standards not older than 5 years for IP Class made on equipment of similar type and capacity.
- d) Check List for Bid submission

Technical offer of the bidder will be evaluated only on the basis of deviation schedule and Price Format. Nature of Deviations shall only be of Design/ Manufacturing constraints and non availability of items/ components/ makes in market.

Panel dimensions are for fixing Purchaser's tentative area layout.

## Technical Conditions of Contract (TCC)

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Un-priced price format consists of various items required in this enquiry. All fields shall be quoted in this format only.

**Note:** No price implications shall be entertained for deviations withdrawn during the technical scrutiny. If any deviations are accepted by BHEL during technical scrutiny then also there will be no price implication. Hence, in no case there will be consideration of price implications.

### 10.2 Offer is liable for rejection when

1. The offer is incomplete with respect to above clauses.
2. The above documents are not submitted in BHEL's formats.
3. Any field is left blank in the Price format.
4. Discrepancy is observed between Un-priced and Priced bid.

### 10.3 Documents to be submitted after award of contract:

- GA, SLD, BoM and Schematic Drawings of Feeder Pillars
- Power Cable Data Sheets
- Cable Glands and Lugs BoM
- Quality Plan
- Catalogues/ O&M Manuals
- Inspection Test Reports
- Packing List

#### *a* GUARANTEE:

*b* The supplier shall be fully responsible in respect of design, selection of components, manufacture, and quality of workmanship and operation of all the equipments, accessories etc. supplied under this scope of contract up to the Guarantee period.

*c* Guarantee period shall be as per the commercial terms and conditions of the NIT.

### 11) PACKING AND DISPATCH:

- 11.0** The equipment shall be properly packed for selected mode of transportation i.e. by ship/ rail or trailer. The panels shall be wrapped in polyethylene sheets before being placed in wooden cases to prevent damage to the finish. Cases shall have skid bottoms for handling. Cases shall be suitable for lifting by cranes. Special precaution notations such as Fragile, This side up, center of gravity, weight, Owner's particulars, Purchase order number etc. shall be clearly marked on the package together with other details as per purchase order.

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- 11.1** The detailed packing list shall be furnished for BHEL's review and acceptance before seeking dispatch clearance. Vendor shall dispatch the Feeder Pillars generally with all components mounted. If, for reason of preventing transit damage or for any other reasons, the components/ items have to be packed separately and dispatched then such loose items have also to be listed in the packing list. The list shall have references duly tracing them to the respective packing box/ crate. If such loose items are not declared then it shall be deemed that there are no such loose items.
- 11.2** The equipment may be stored outdoors for long periods before installation. The packing should be suitable for outdoor storage in areas with heavy rains and high ambient temperature unless otherwise agreed.
- 12) SPECIAL CONDITIONS:**
- 12.0** Bidder should confirm that “after-sales service” facilities will be made available free of cost for proper commissioning/ maintenance of equipments offered. The vendor should depute their Technician/ Engineer at their cost for rectification of any defects during guarantee/ warranty period.
- 13) Void**
- 14) LIST OF SUB-VENDORS:**

<i>Sl. No.</i>	<i>Item</i>	<i>Make/ Sub-Vendor</i>
<b>1</b>	Auxiliary Relays	ABB/ Alstom T&D/ Areva (now Schneider Electric)/ Easun Reyrolle/ Schneider Electric/ Jyoti/ Omran
<b>2</b>	Control Switches/ Selector Switches	Alstom T&D/ Hotline Switchgear & Controls/ Kaycee Industries/ L&T/ Reliable Electronic Components/ Siemens/ Switron Devices
<b>3</b>	Fuses	Cooper Bussman/ GE/ Havells/ L&T/ Novateur Electrical & Digital Systems/ Siemens
<b>4</b>	CT & PT	Controls & Switchgear/ Gilbert & Maxwell Electricals/ Kalpa/ Kappa/ L&T/ Narayan Powertech/ Pragati/ Precise/ Silkaans Electricals
<b>5</b>	MCB	ABB/ C&S Electric/ Havells/ Novateur Electrical & Digital Systems/ Indiana Current Control/ Legrand/ Siemens/ Standard Electricals/ Schneider Electric
<b>6</b>	MCCB	GE/ L&T/ Siemens/ Schneider Electric/ ABB/ Havells
<b>7</b>	Push Button & Indicating Lamps	C&S Electric/ Essen Deinki/ Hotline Switchgear & Controls/ L&T/ Precifine Products/ Schneider Electric/ Shri Tulsi Switchgears/ Siemens/ Teknik
<b>8</b>	Protection Relays	ABB/ Alstom/ Easun Reyrolle/ GE/ Schneider Electric/ Siemens

## Technical Conditions of Contract (TCC)

<b>9</b>	Power Cables	Govind Cable Industries/ Gupta Power Infrastructure Ltd./ Zenium Cables Limited/ Apar Industries Limited/ Elkay Telelinks Limited/ Suyog Electricals Ltd./ Torrent Power Limited (Cable Unit)/ Polycab India Limited/ Gemscab Industries Ltd./ Special Cables Pvt. Ltd./ Paramount Communications Ltd./ Delton Cables Limited/ KEI Industries Limited/ CMI Limited/ Cords Cable Industries Ltd./ KEC International Limited/ Thermo Cables Limited/ Universal Cables Ltd.
<b>10</b>	Cable Glands	Flexpro Electricals Pvt. Ltd./ FCG Power Industries/ Kaysons Techno Equipments Pvt. Ltd./ Metal Craft Industries/ Prompt Engineering Works, Mumbai/ Flameproof Equipments Pvt. Ltd./ FCG Flameproof Control Gears/ Electromac Industries/ Braco Electricals India Pvt. Ltd./ Sigma Instruments Company
<b>11</b>	Cable Lugs	Automic Electric & Refrigeration Co/ Chetna Engineering Co./ Electromac Industries/ Braco Electricals India Pvt. Ltd./ Forward Engineering Industries/ Dowells Elektro Werke, Mumbai
<b>12</b>	Earthing Material	Industrial Perforation (I) Pvt. Ltd./ Unitech Fabricators & Engineers/ Ratan Projects & Engg./ India Electricals Syndicate/ Premier Power Products/ Saral Industries/ Rajasthan Metal Smelting Co./ Anil Steels Pvt. Ltd./ Patny Systems Pvt. Ltd./ Reputed Make

15) **DEVIATION SCHEDULE for this part of the scope:**

**ENQUIRY**

**NO.** \_\_\_\_\_ **NAME OF BIDDER** \_\_\_\_\_

**ITEM** \_\_\_\_\_ **OFFER REF. NO.** \_\_\_\_\_

<b>Sl. No.</b>	<b>Clause No. &amp; Spec. No.</b>	<b>Description as per Specification</b>	<b>Deviation Taken</b>	<b>Nature of Deviation</b>	<b>Remarks</b>
<b>1</b>					
<b>2</b>					
<b>3</b>					
<b>4</b>					

## Technical Conditions of Contract (TCC)

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16) **NOTES:**

- a) Deviations, if any, shall be clearly brought out only in this format. Deviations mentioned/taken elsewhere or in any other format will be ignored.
- b) Additional sheets in the same format can be attached by the vendor, if necessary.
- c) Nature of Deviations shall only be of Design/ Manufacturing constraints and non-availability of items/ components/ makes in market.
- d) No price implications shall be entertained for deviations withdrawn during the technical scrutiny. If any deviations are accepted by BHEL during technical scrutiny then also there will be no price implication. Hence, in no case there will be consideration of price implications.
- e) Reasons for the deviations shall be specified in the Remarks column.
- f) Only the accepted deviations in conjunction with the original tender shall constitute the contract document for the award of job to the bidder.

## Technical Conditions of Contract (TCC)

### Chapter-XIII: Payment terms

- 18.1 WORK OF RECEIPT, UNLOADING, VERIFYING, SHIFTING, STACKING, PRESERVATION, HANDLING AND HANDING OVER OF COMPONENTS OF BOILER WITH AUXILIARIES, ESP WITH AUXILIARIES, STEAM TURBINE & AUXILIARIES; TURBO-GENERATOR & AUXILIARIES; PUMPS WITH AUX., ROTATING MACHINES, VESSELS, COMPLETE ELECTRICAL, CONTROLS AND INSTRUMENTATION EQUIPMENTS, PANELS, CABLES / CABLE TRAYS, AND OTHER RELATED ITEMS INCLUDING ITEMS OF BOILER, TG & BOP'S PACKAGES; HP&LP PIPING; REFRACTORY & INSULATION WITH CLADDING MATERIALS; BHEL T&P; COMPONENTS & EQUIPMENT OF VARIOUS OTHER SYSTEMS, STRUCTURES, AND PROVIDING SERVICES FOR MATERIALS MANAGEMENT AT 3X150 MW BTG.

#### Schedule of the Quantity/Bill of the quantity

ITEM NO	DESCRIPTION OF ACTIVITY	UNIT	QTY	Weightage %
<b>Part-A</b>	<b><i>Material Handling &amp; Management Services (As per TCC)</i></b>	<b>MT</b>		
A1	Unloading, Shifting to Open/Covered Stores.	MT	45000	5.73596
A2	Stacking and Verification & Updation of Receipt details in store Material Registers/Computerised MM Package system.	MT	45000	5.73596
A3	Updation of Verification details in Material stock registers, Submission of reports as per specified formats for shortage/open delivery, lodging of police reports if required, documents for insurance claims Etc, and preparation of material receipt certificates in prescribed formats where ever applicable.	MT	45000	4.77996
A4	Identification of material in ready to lift position for issue to BHEL/ Erection agency, and updation of issue details in stores Records.	MT	45000	2.29438
A5	Completion of contractual obligations as per TCC, clause SL. No. 18.2 .	MT	45000	0.57360
A6	Material reshifting, Restacking & Dispatch of Plant Material within project premises.	MT	900	0.34342
A7	Despatch/outgoing materials	MT	150	0.05196
A8	Receipt, unloading, verifying, shifting, stacking, preservation, handling and re-handling and handing over to respective agencies of consignment ( as listed in respective clauses of TCC) requiring lifting by crane of capacity more	MT	2400	14.05775

## Technical Conditions of Contract (TCC)

	than 40 MTs all complete as per instruction and direction of BHEL Engineer-in-charge.			
<b>PART-B: Crane service (As per TCC)</b>				
1	Pick and Carry Crane 40MT or more. Note-Hydra not allowed.	Months	42	<b>15.59257</b>
2	Pick & carry type tyre mounted mobile crane (Farana)- 23 MT or more. Note-Hydra not allowed.	Months	48	<b>13.12688</b>
3	Forklift 5T capacity with 3M lift.	Months	48	<b>5.65004</b>
4	Tractor with trolley unit integrated with a hydraulically operated trolley/trailer, designed for material handling. minimum capacity 10 MT	Months	44	<b>7.34619</b>
5	20 MT trailer to be deployed on day/days basis as per instruction of BHEL Engineer.	Days	216	<b>2.66311</b>
<b>PART-C</b>	<b>Manpower Services (As per TCC)</b>			<b>Rate per man-month</b>
1	Secretarial Services (Skilled)	Man Months	268	<b>20,666.92</b>
2	Menial Services (Unskilled)	Man Months	268	<b>16,989.53</b>
3	Menial Services (Unskilled) - for Grass cutting/housekeeping/upkeep of storage yards etc.	Man Months	144	<b>16,989.53</b>
4	Watch and ward /Security Guards.	Man Months	480	<b>20,666.92</b>
<b>PART-D</b>	<b>Miscellaneous Services (As per TCC)</b>			
1	Supply, installation, testing, commissioning, O&M, dismantling after contract completion and removal from site of "415V 63A Feeder Pillar, 415V 125A Feeder Pillar and 415V 250A Feeder Pillar" on monthly hire basis as per technical specifications and approved drawings (Including all cabling, connections with customer compact sub-station, civil & structural Works).	Month	48	<b>8.62537</b>
2	Supply ,Installation ,Commissioning ,Operation and maintenance,dismantling after contract completion and removal from site of 14 Nos of High resolution night vision CCTV cameras along with accessories along with JB's Security Box, full HD 43 inch Display, Mobile 5G accesspoint for online view,all mountings and associated cables as per approved layout and design by BHEL Engineer Incharge. Complete scope as per TCC.	Months	48	<b>2.46139</b>

## Technical Conditions of Contract (TCC)

3	Supply and installation of Tarpaulin Sheet Waterproof with Eyelets (300 GSM) - Virgin Material, UV Resistant, Durable Tarpaulin for Construction use, Roof & Outdoor Use ( of different assorted size like-30ftX20ft, 18ft x 100ft or 30ftx40ft or as directed by site incharge, color-Black/yellow/Red/green).	Square feet	300000	<b>5.27200</b>
4	Supply and installation of Polypropylene Rope (5 mm to 8 mm diameter) Durable, Strong & Weather Resistant for Outdoor & Indoor Use, shall be provided, as required, for fixing and securing tarpaulin covers over the stored items at site.	Meter	3000	<b>0.04589</b>
5	Supply and installation New (unused) WOODEN SLEEPERS (pine wood, hardwood or similar) Assorted sizes-(3' ft x 6'' x 6'' or as desired at site) during storing of the equipment/items at site. NOTE-The wooden sleepers should be durable and able to withstand the material handling equipment load.	Cubic feet	600	<b>0.89593</b>
PART -E	Safety compliance			<b>4.74764</b>

### 18.2 OTHER Payment Terms & Condition.

18.2	% From every RA Bill to be paid only after satisfactory completion otherwise forfeited	Remark
a)	Housekeeping & cleaning of all closed sheds including removal of grass/weeds in store area.	1%
b)	Preservation planned for the month as per Form 14	0.5%
c)	Safe working at the place of work and temporary illumination at working area where materials are handled	0.5%
d)	Implementation of E-stores for records/data	1%
	<b>TOTAL</b>	<b>3%</b>

**Note-1: The aforementioned payment of 3% is within the 100% payment as mentioned in above payments terms within the total SOQR items.**

**Note-2: Payment of the monthly amount attributable to the Safety Compliance items detailed in the SOQ (Part-E) shall be subject to the Contractor's performance being in full compliance with all applicable safety requirements, to the sole satisfaction of BHEL and the Customer. Non-compliance in any month will lead to forfeiture of that month's safety**

**payment and the imposition of penalties under Clause 18.2 of the TCC and elsewhere mentioned in the tender documents.**

### 18.3 **Cranes (For Part-B)**

Payment for Cranes shall be made on monthly basis on actual deployment basis as per the awarded monthly rate against each crane.

No other payment shall be paid for the other T & Ps deployed for carrying out the work as per the scope of this tender. One Month for Part-B shall be 30 days of working.

**Price variation compensation and Overrun compensation will not be applicable for items in Part-B.**

### 18.4 **Menial, Secretarial & Grass Cutting Services etc and Security watch and ward Manpower services: (For Part-C)**

Secretarial (Skilled) manpower will be used for BHEL Offices, stores, site offices, establishments etc. as decided by BHEL. (Computer operator-1 no., HR-2 nos., Gate pass of vehicle/manpower-2 nos., other secretarial job-1 no.) (Total 6 nos. of Persons are considered; however, deployment/non-deployment shall be progressively as per BHEL RCM instruction).

Menial (Unskilled) manpower will be used for BHEL Offices, stores, site offices, establishments etc. as decided by BHEL. (Total 6 nos. of Persons are considered; however, deployment shall be progressively as per BHEL RCM instruction).

Menial (Unskilled) manpower for Grass cutting/housekeeping/upkeep of storage yards and other works as assigned as per BHEL site engineer). (Total 3 nos. of Persons are considered; however, deployment/non-deployment shall be progressively as per BHEL RCM instruction).

Watch and ward /Security Guards will be used for the security of the BHEL stores/Material and establishment etc. (Total 10 nos. of Persons are considered; however, deployment/non-deployment shall be progressively as per BHEL RCM instruction).

Payment for Menial, Secretarial & Grass Cutting Services etc. and Security Manpower shall be made on monthly basis on actual deployment as per the awarded monthly rate against each head.

Payment for the same shall be made as per the service-month rate fixed in item no 1 to 4 of rate schedule Part-C. in Terms of Payment, on pro-rata basis as at actuals.

The actual requirement of manpower shall be discussed and finalized with engineer in-charge before start of the works.

However, rates are fixed on the basis of total minimum wages on the basis of circular issued by “office of the Labour commissioner Odisha Bhubaneswar Notification no-8584/LC,Bhubaneswar, dated 21.11.2025” at the time of NIT, and the same shall be revised at times when it is changed by the office of the Labour commissioner Odisha Bhubaneswar.

## Technical Conditions of Contract (TCC)

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**Therefore, price variation compensation and overrun compensation will not be applicable for items in Part-C.**

Payment against items in PART-C of “Schedule of Rates and Quantities” shall be calculated & paid in following manner;

• **Per service month rate= 1.41 x minimum wages per month (rounded to next higher fifty value)**

Minimum wages per month = Daily Rate Minimum Wage per day (rounded value) x 26 Days. During the extended period of contract, above services, for BHEL office and stores, site offices, establishments etc. shall be provided by the contractor as per the instruction of BHEL site incharge. Rates during extended period shall be followed as above.

Note: BHEL at its sole discretion reserves the right to re-shuffle the work allocation of the personnel deployed for menial and secretarial services.

In case the contractor does not deploy or delays deployment of above said manpower with reference to specific instructions from BHEL, BHEL **will levy penalty for delay** in the following manner:

A. Supervision/secretarial services @ Rs100 per service-day.

B. Menial services for BHEL office and stores etc. @ Rs 100 per service-day.

C. Menial services for Grass Cutting/House keeping @ Rs 100 per service-day.

### 18.5 ***Part-D: Miscellaneous Services (As per TCC) & Part-E: Safety Compliances***

Price variation compensation and Overrun compensation will not be applicable for items in Part-D & Part-E of SOQ.

### 18.6 ***Part-A: Material Handling & Management Services (As per TCC).***

Price variation shall be applicable as per GCC clause no. GCC Clause no.2.17, PERCENTAGE COMPONENT ('K') shall be of "Electrical, C&I, Material Management/Handling and other labour oriented packages"

Overrun compensation will not be applicable

### 18.7 **Instructions to the bidders regarding Price Bid (Schedule of Rates & Quantities) and its Calculations:**

a) Schedule of Rates and Quantities consist of the followings:

- i Part-A: Material Handling & Management (Item No.-A1 to A8)
- ii Part-B: Crane service. (Item No.-1 to 6).
- iii Part-C: Manpower Services (Item No.-1 to 4). **(pre-fixed Prices by BHEL).**
- iv Part-D: Miscellaneous works & Services. (Item No.1 to 5).
- v Part-E: Safety compliance (as per TCC).

## Technical Conditions of Contract (TCC)

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- b) Bidder has to quote for Total price excluding GST i.e. for Part-A, B, C, D & E in PRICE BID at BHEL E-procurement Portal.
- c) Price for Section- A, B, D & E shall be derived by subtracting “Part-C total price Rs.2,24,58,543.99 (Pre-fixed Prices by BHEL at NIT stage) from Total quoted price quoted by bidder in NIC portal.
- d) BHEL has fixed Weightage Factors for individual items falling under Part-A, B, D & E of above schedule of the quantity/SOQ.
- e) These item wise Weightage Factors and Quantities allocations are as detailed in above Table/SOQ or unpriced bid format.
- f) Item Price for each item falling under these Part-A, B, D & E are derived by Multiplying Weightage Factors/percentage with the Price arrived in note Sl.no.c above.
- g) Further to calculate Unit Item Rate of Part-A, B, D & E, the item price arrived at Sl.no.f above, shall be divided by respective quantities of that item.
- h) Final value of framework agreement shall be total of Part-A, B, C, D & E shall be considered. Which shall be equal to the finalized L1 (Finalized Lowest bid price) bidder price.
- i) Bidders to note that this is an ‘Item rate contract’. Payment shall be made for the actual quantities of work executed at the Unit rate arrived.

### **Chapter XIV-Obligations of the Contractors**

1.1 The contractor shall fully comply with the following enactments:

- a) Contract Labor (R & A) Act, 1970 and rules formed therein under Central Rules.
- b) Minimum Wages Act 1948.
- c) Payment of Wages Act.
- d) ESI Act, 1948
- e) EPF Act, 1952
- f) Employees’ Compensation Act, 1923.
- g) Provisions of Factories Act 1948 & Rules thereof
- h) The inter-state migrant workmen (regulation of employment and conditions of service) Act, 1979
- i) Payment of Bonus Act, 1965
- j) Payment of Gratuity Act, 1972

## Technical Conditions of Contract (TCC)

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- a The contractor shall obtain License from the Assistant Labour Commissioner (Central), or appropriate government if he engages twenty or more workmen.
- b The Contractor shall produce the following Registers and forms before commencement of work, for verification by the Executing Officer.
  - 1 Form XII - Register of contractors
  - 2 Form XIII - Register of workmen employed by contractor (Rule 75)
  - 3 Form XIV - Employment card issued by contractor (Rule 76)
  - 4 Form XVI - Muster Roll (Rule 78(1)(a)(i))
  - 5 Form XVII - Register of wages (Rule 78(1)(a)(i))
  - 6 Form XVIII - Register of wages-cum Muster Roll (in case of weekly payment)
  - 7 Form XIX - Wage Slip (Rule 78(b))
  - 8 Form XX - Register of deduction for damages or loss (Rule 78(1)(a)(ii))
  - 9 Form XXI - Register of files (Rule 78(1)(a)(ii))
  - 10 Form XXII - Register of advances (Rule 78(1)(a)(ii))
  - 11 Form XXIII - Register of overtime (Rule 78(1)(a)(iii))
  - 12 Form XXIV - Return to be sent by the contractor to licensing officer (Rule 82(1))
- a The contractor shall make himself or his representative (supervisor) available at the work spot every day during execution of work, for effective supervision.
- b The contractor shall attend to all inspections notified/conducted by the Human Resource department, Labour department, P.F. authorities, Inspector of Factories, ESI inspectors, or any other such authorities.
- c Non-compliance of any provisions under the act/rule/instructions/guidelines shall make the contractor liable for penal action including termination of contract.
- d Contractor shall furnish in a separate letter his place of residence and postal address. The delivery at the above named place or posting in a Post Box regularly maintained by the Post and Telegraph Department or sending letters registered for acknowledgement of any notice, letter or other communication to the contractor shall be deemed sufficient service there upon he contractor. Change in address shall come into force at any time by an instrument executed by the contractor and delivered to the BHEL official who has signed the contract.
- e The contractor must satisfy himself by personal study thoroughly the scope of proposed work in detail and all conditions affecting the work before entering into the contract. There shall not be at any time, dispute/complaint of any nature regarding scope of work and interpretation of specifications or any misunderstanding with regard to nature or omission of the work to be done nor shall any application for compensation in terms of time and money shall be accepted by BHEL regarding the above.

## Technical Conditions of Contract (TCC)

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- f Contractor shall in his absence keep competent agent constantly on the works and any directions or explanations given by the "Contract Executing Officer" or his representative to such agent shall be held to have been given to the contractor himself.
- g Contractor on the advice of BHEL officials shall immediately remove any person employed by him, who may in the opinion of the BHEL official, is incompetent or involves himself in misconduct. Such persons shall not be again employed on the works without written permission of the BHEL official.
- h The contractor shall give all notices required by the Acts, regulation, bye laws, Legal Acts and pay all fees in connection therewith unless and otherwise arranged and decided in writing with BHEL. He shall also ensure that no attachments are made against materials or work forming part of or for the use of the contractor. In all such cases, contractor shall protect and indemnify BHEL against any claim or liability arising from or based on the violation of any such laws, ordinances, regulations, orders, decrees or attachment either by himself or by his employees.
- i It shall be contractor's sole responsibility to protect the public and his employees against accident from any cause and provide required safety equipment and shall indemnify BHEL against any claims for damages for injury to the person or property resulting from any such accidents and shall, where the provisions of the Employees Compensation Act and Public Liability Act as applicable, take steps to properly insure against any claims thereunder.
- j In the event of any accident in respect of which compensation may become payable under the Employees Compensation Act, VIII of 1923 whether by the contractor or by BHEL as Principal Employer, it shall be lawful for BHEL to retain out of monies due and payable to the contractor such sum or sums of money as may, in the opinion of BHEL shall be final in regard to all matter arising in this clause.
- k No work shall be done on Sundays or on other declared Holidays of BHEL without the written permission of BHEL officer in charge of the work. The contractor shall comply with the provisions of the Factories Act 1948 if the same are applicable. No contract labour shall be engaged on any National Holidays.
- l The contractor shall keep his work place clean and safe to avoid injuries to men and damage to finished products / equipment.
- m On the occurrence of an accident, which results in the death of any of the workmen employed by the contractor or which is so serious as to be likely to result in the death of any such workmen, the contractor shall within 24 hours of the happening of such an accident intimate in writing to the BHEL official in charge of the work.
- n The contractor shall indemnify BHEL against all losses or damages sustained by BHEL resulting directly or indirectly from his failure to give intimation in the manner aforesaid including the penalties or dues if any and become payable by BHEL, as a

## Technical Conditions of Contract (TCC)

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- consequence of failure, BHEL to give notice under the Employees Compensation Act 1923 or otherwise confirm to the provisions of the said Act in regard to such accident.
- o The contractor shall ensure adherence to all statutory requirements applicable to BHEL.
  - p The contractor shall ensure abidance by all the labour laws especially including Contract labour (R&A) Act 1970, Payment of Wages Act 1936, Employees Compensation Act 1923, Minimum Wages Act 1948, ESI Act 1948, Payment of Bonus Act 1965, and Provident Fund Misc. Prov. Act 1952, as amended from time to time.
  - q The contractor shall comply with provisions of Provident Fund Misc. Prov. Act 1952 through PF code allotted to him / her.
  - r Notwithstanding the above clause, in case of any financial loss incurred by company on account of contravention of the Provident Fund regulations or any regulations of rule touching the same by the contractor, the contractor shall submit an undertaking to indemnify the company to the extent of the loss incurred by the company.
  - s The contractor should engage only those laborers whose age is 18 (eighteen) years or more.
  - t The contractor shall not resort to subcontracting under any circumstances without prior permission of BHEL. If found sub-contracting at a later date, BHEL reserves the right to take whatever action it deems fit, including cancellation of the Contract.
  - u The contractor shall provide the required safety equipment to the labors engaged by him / her.
  - v Contractor shall issue "Employment Card" as per statute to all labour and supervisors covered under the job work contract.
  - w The contractor shall be responsible to settle any grievances of the labour deployed by him / her within two weeks.

## **Chapter XV-Statutory Regulation**

### **INTER-STATE MIGRANT WORKMEN ACT, 1979 (IN CASE BIDDER ENGAGE MANPOWER FROM OTHER STATE)**

In case any portion of work involves inter-state migrant workers, then compliance to the above titled Acts as applicable shall be ensured by the contractor and contractor shall obtain license and deposit the cess under the Act. In the circumstances, it may be ensured as under:-

It shall be the sole responsibility of the contractor in the capacity of employer to forthwith (within a period of 15 days from the award of work) apply for a license to the Competent Authority under ISMW Act as applicable and obtain proper certificate thereof by specifying the scope of its work. It shall also be responsibility of the contractor to furnish a copy of such certificate of license / permission to BHEL within a period of one month from the date of award of contract.

It shall be the sole responsibility of the contractor as employer to ensure compliance of all the statutory obligations under these acts and rules including that of payment / deposit of cess as per the applicability under above referred Acts within a period of one month from the receipt of payment.

It shall be the responsibility of the sub-contractor to furnish the receipts / challans towards deposit of the cess together with the number, name and other details of beneficiaries (building/Inter-state Migrant workmen) engaged by the sub-contractor during the preceding month.

It shall be the absolute responsibility of the sub-contractor to make payment of all statutory payments & compensations to its workers including that is provided under the Workmen's Compensation Act, 1923.

## **Chapter XVI: HSE (Health, Safety, Environment) and PPE (personal Protective Equipment) Guidelines**

- 1 Contractor shall follow all the HSE guidelines as mentioned chapter IX off SCC.
- 2 In case of any dispute/ contradiction, Hindalco Industries Limited HSE rules and guidelines shall prevail.

### **Chapter-XVII: Modalities of Ordering/execution against Framework Agreement (FA) BOQ.**

**The following shall be the salient feature of the framework agreement (FA); bidder to note while submitting their offers:**

1. After acceptance of the L-1 bidder's bid by the competent authority, "Letter of Intent" will be placed by BHEL for entering into the framework agreement after submission of security deposit @ 5% of the total FA value and for "Total FA BOQ" (Attached as Annexure A). Clause no. 1.10 of GCC shall be applicable for submission of Security Deposit.
2. BHEL after issue of LOI shall place "Work order/LOA" on the successful L-1 bidder (as per clause no. 1 as above) for BOQ-1 quantities (Attached as Annexure- A1) with contract period of 24 months. "General Conditions of Contract (GCC)", "Special Conditions of Contract (SCC)", "Forms & Procedures" shall be applicable for this "Work Order/LOA" as well as subsequent "Work Orders/LOAs" which shall be placed by BHEL during the validity period of FA and extended period, if any depending on the requirement.
3. Each "Work Order/LOA" shall be treated as separate contract with their corresponding contract period. The terms & conditions of each of these contracts shall be governed by "GCC", "SCC", "TCC", "NIT" except of clause no. 1.10 of GCC.
4. QUANTITY VARIATION/COMPENSATION IN FRAMEWORK AGREEMENT (FA):

The quantities given in the FA contract are tentative and may change to any extent (both in plus side and minus side). No compensation becomes payable in case the variation of the final executed contract value of all work orders put together after completion of FA Period is within the limits of Minus (-) 50% of total awarded FA contract value. Also, no compensation becomes payable in case the FA contract gets partially executed/ short closed/ terminated/ work withdrawn under Rights of BHEL mentioned in Clause 2.7 of GCC. In case of work terminated/ short closed under clause 2.7.4 of GCC, compensation may be considered only if BHEL receives compensation from customer.

Compensation due to variation of final executed contract value in excess of the limits defined in clause above, shall be as follows:

- i) In the event the finally executed contract value reduces below the lower limit of awarded FA Contract Value due to quantity variation specified above, the Contractor will be eligible for compensation @ 15% of the difference between the lower limit of the awarded FA contract value and the actual FA executed contract value.
- ii) In the event the finally executed contract value increases above the awarded FA Contract Value due to quantity variation, the Contractor is not eligible for any compensation.

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5. Overrun Compensation clauses are not applicable for the orders placed during FA period or extended period if any.
6. Total Quantity of FA mentioned in the tender are indicative.
7. The individual WO/LOA placed by BHEL based on this Framework Agreement are not subject to any Minimum Order Quantity (MOQ) limitation.

### **Chapter-XVIII- Annexures of TCC.**

- 1) Annexure-A1: BOQ for 24 Months LOA/WO.
- 2) Annexure-A: BOQ for 48 months framework agreement.
- 3) Other annexures of the TCC (If any).