

VOLUME - IA

TECHNICAL CONDITIONS OF CONTRACT (TCC)

RECEIPT, UNLOADING, VERIFYING, SHIFTING, STACKING, PRESERVATION, HANDLING AND HANDING OVER OF COMPONENTS OF BOILER WITH AUXILIARIES INCLUDING MILLS & FEEDERS ETC.; ESP WITH AUXILIARIES, STEAM TURBINE & AUXILIARIES; TURBO-GENERATOR & AUXILIARIES; PUMPS WITH AUX., ROTATING MACHINES, TANKS & 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, PRE-FABRICATED STRUCTURES, STRUCTURAL & REINFORCEMENT STEEL, CEMENT, SUPPLY INSTALLATION AND MAINTENANCE OF CCTV CAMERA AND PROVIDING SERVICES FOR MATERIALS MANAGEMENT AT 2x660 MW MAHAGENCO KORADI PROJECT, NAGPUR DISTRICT, MAHARASHTRA, INDIA.



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Chapter - I: PROJECT INFORMATION

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Chapter - I: PROJECT INFORMATION

Sl. No.	Description	Details
1	Project Title	2X660MW UNITS-11 & 12, KORADI THERMAL POWER STATION
2	Customer	MAHARASHTRA STATE POWER GENERATION CO. LTD (MAHAGENCO)
3	Location	KORADI, NAGPUR DISTRICT, MAHARASHTRA
4	Nearest Airport	NAGPUR AIRPORT
5	Access by Road/Major Cities	FROM NAGPUR- BHOPAL NATIONAL HIGHWAY (NH-69)
6	Ambient Temperature	47.8°C (High) 3.9°C (Low)
7	Seismic Zone	II
8	Wind Speed	44m/s
1.0	INSTRUCTIONS TO BIDDERS	
1.1	The Bidder shall visit project sites and acquire full knowledge and information about conditions prevailing at site and in & around the plant premises, together with site conditions, transportation routes, various distances, all the statutory, obligatory, mandatory requirements of various authorities and all information that may be necessary for preparing the bid and entering into the Contract. All costs for and associated with site visits shall be borne by the bidder.	
1.2	Other contractors would be working in this area and their structures are to be protected. The material brought and stacked for construction should not make hindrance to other contractors.	
1.3	The information given herein is for general guidance and shall not be contractually binding on BHEL/Owner. All relevant site data /information as may be necessary shall have to be obtained /collected by the Bidder.	
1.4	The contractor, in the event of this work awarded to him, shall establish an office at site and keep posted an authorized, responsible officer with valid Power of Attorney for the purpose of the contract. Any order or instructions of the 'Engineer' or his duly authorized representative, communicated to the contractor's representative at site office will be deemed to have been communicated to the contractor at his legal address.	

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1.5	No claim will be entertained by BHEL on ground of lack of knowledge and the contractor's rates shall be deemed to have taken this into account.	
1.6	Bidders may fix up their site visit in consultation with below mentioned contact person:	
	Name:	Mr. Rohit Agrawal Mr. Kirshan Kumar Mishra
	Designation:	Sr. Manager Sr. Engineer
	Location:	PSWR, Nagpur PSWR Nagpur
	Email:	rohitagr@bhel.in kkm@bhel.in
	Ph. No.	9974066147 9561130762

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Chapter – II: SCOPE OF WORKS

2.1	Scope of Works:
2.1.1	RECEIPT, UNLOADING, VERIFYING, SHIFTING, STACKING, PRESERVATION, HANDLING AND HANDING OVER OF COMPONENTS OF BOILER WITH AUXILIARIES INCLUDING MILLS & FEEDERS ETC.; ESP WITH AUXILIARIES, STEAM TURBINE & AUXILIARIES; TURBO-GENERATOR & AUXILIARIES; PUMPS WITH AUX., ROTATING MACHINES, TANKS & 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, PRE-FABRICATED STRUCTURES, STRUCTURAL & REINFORCEMENT STEEL, CEMENT, SUPPLY INSTALLATION AND MAINTENANCE OF CCTV CAMERA AND PROVIDING SERVICES FOR MATERIALS MANAGEMENT AT 2x660 MW MAHAGENCO KORADI PROJECT, NAGPUR DISTRICT, MAHARASHTRA, INDIA.
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 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 <u>all types of structural & reinforcement steel and plant equipment's Including heavy consignments and/or over-dimensional consignments</u> (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	Receipt of materials dispatched by road transport on door delivery basis at the BHEL stores and unloading thereof.
2.1.6	Collection of materials dispatched by road transport on go-down delivery basis from transporters' go-downs, loading at transporters go-down, local transport up to BHEL stores / storage yard 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	Supply and installation of CCTV system around the storage boundary and inside entire storage space.

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2.1.9	Maintenance of the CCTV system during the contract execution period including extension period (if any).
2.1.10	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.
2.1.11	Stacking and storing at BHEL open storage yard / covered stores / closed & semi-closed sheds and submission of stacking / storing records.
2.1.12	Preservation of the materials in accordance with BHEL preservation manual and as per BHEL instructions.
2.1.13	General cleaning, grass cutting and upkeep of storage yard, covered and semi-closed stores sheds shall be in the scope of contractor. However, Services of Grass cutting shall be payable as per BOQ for menial services (for Grass Cutting). 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.
2.1.14	Providing Materials Management Services.
2.1.15	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.
2.1.16	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.
2.1.17	Lodging of complaint with local authorities for any theft / damage of received/ stored material.
2.1.18	Record keeping (receipt & issue) of: i) Cement received through trucks/trailers in bulkers/bags at project Site (Where unloading of Cement is not in scope of MM agency) & ii) Reinforcement Steel/ Structural Steel (raw) received at project Site (Where unloading of Reinforcement/Structural steel is in scope of Civil agency).

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2.1.19	Handing over of records and materials to another agency.
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: <ul style="list-style-type: none">• Boiler & Auxiliaries (Structures, Pressure Parts, Fans, Air pre-heaters, Fuel systems, ducts & dampers)• Mill Bunker Buildings structure, Transfer points, conveyor galleries and its supporting trestles.• Electrostatic Precipitator with HV Rectifier Transformers and auxiliaries.• Coal Mills & Feeders with associated auxiliaries (Pulverised Fuel system).• Complete Insulation, Refractory, Lining, Ancillary and cladding materials.• 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.• Power cycle pumps with auxiliaries, Tanks & Vessels.• Controls & Instrumentation Systems for Boiler, ESP and their auxiliaries• STG & Aux controls and instrumentation and accessories including cables, trays etc.• Power cycle piping, valves, Hangers & Supports including HP & LP bypass systems.• Low Pressure piping system.• Circulating water pipes, filter, plate type heat exchanger, CW booster pumps with drives, DM cooling water system and drives, and aux cooling water pumps.• Generator relay protection panels and auxiliaries• LT switch gears, Electrical and pneumatic actuators and motors.• Boiler piping and TG cycle piping, tanks, vessels etc.• Electrical Panels, cables, cable trays and accessories.• PEM supplied items• HP & LP Chemical dosing system.• Thermal insulation & cladding.• Other BHEL supplied (manufactured/bought out items).• BOP Package items• Misc. Cranes & hoist.

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- Cable & cable trays etc.
- Tanks
- Fabricated Structures
- Structural steel items, Reinforcement.
- Cement (bag and bulkers, as specified elsewhere)
- Construction equipments (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.
- Materials and consumables required for erection & commissioning of plant.

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	Ceiling Girder – Heaviest Piece (height 7M, width 1.5 M, length 13 M)	70 MT
2	HP Turbine (L-6745 X W-3790 X H-3495)	128 MT
3	LP Rotor (L-8174 X W-4500 X H-4456)	110 MT
4	Generator Stator (L-10160 X W-4404 X H-4260)	312 MT
5	HP Heater #7A/B, L 13200 x W 2400 x H 2900	90 MT
6	HP Heater #8A/B, L 12000 x W 2400 x H 2900	77 MT
7	Cabins/Crawlers/counter weight of BHEL Cranes	Up to 65 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.

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	<p>* Note: Unloading of Generator Stator weighing 312 MT with dimension L-10160 X W-4404 X H-4260 is currently not envisaged in the scope of this work. However, on the direction of BHEL engineer the agency shall carry out the unloading of the Generator stator. The decision of BHEL engineer is binding on the agency. A lumpsum amount of Rs ₹ 4,29,764/- shall be paid to the agency for generator stator unloading which shall be inclusive of charges of T&Ps required for the work except for saddle which shall be provided to agency free of cost.</p>		
2.2.3	Major Unloading quantities:		
	Total Approx. Weight of Project material to be unloaded:	164452 MT	
	Total Approx. Weight of Structural steel & TMT to be unloaded:	18579 MT	
	Total Approx. Weight of Cement, TMT, Structural Steel to be managed:	138456 MT	
2.2.4	<p>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.</p>		
2.2.5	<p>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.</p>		
2.2.6	<p>The contractor shall perform all required services which may not be specified herein but nevertheless required for the completion of work within quoted rates.</p>		
2.2.7	<p>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.</p>		
2.2.8	<p>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.</p>		
2.2.9	<p>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.</p>		

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Chapter – II: SCOPE OF WORKS

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	Calibration and day to day operation and maintenance of BHEL owned weighbridge/s is included in the scope of this work. Payment shall be made to contractor as per relevant BOQ item rate.																		
2.2.12	SUPPLY INSTALLATION AND MAINTENANCE OF CCTV CAMERA IN STORAGE AREA																		
2.2.13	Supply & installation of IP based 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.																		
2.2.14	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.																		
2.2.15	The scope of spares and consumables as may be required is included in the scope of Contractor at no extra cost to BHEL.																		
2.2.16	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.																		
2.2.17	The agency shall handover all CCTV camera and related accessories including hardware and software to BHEL after completion.																		
2.2.18	The contractor shall provide the following components 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.																		
	<table><tr><th>Sl. No.</th><th>Name of Item</th><th>Quantity</th></tr><tr><td>1</td><td>IP based PTZ dome camera along with p2p/ PMP Outdoor CPE Antenna for wireless communication. <Server based architecture with licenses></td><td>5 nos. (tentatively)</td></tr><tr><td>2</td><td>IP based Fixed bullet camera along with p2p/PMP Outdoor CPE Antenna for wireless communication. <Server based architecture with licenses></td><td>50 nos. (tentatively)</td></tr><tr><td>3</td><td>CCTV camera database redundant server with speaker (Shall work in redundant mode, one primary and another secondary server) & Video Management Software</td><td>1 set. (2 nos. server)</td></tr><tr><td>4</td><td>LED Display Screen – Min. 50”</td><td>2 No.</td></tr><tr><td>5</td><td>All hardware/software including network switches, other mounting & electrical accessories including cables, adapters, Fiber Optic, patch cord, housing, connectors, junction boxes, etc.</td><td>As required.</td></tr></table>	Sl. No.	Name of Item	Quantity	1	IP based PTZ dome camera along with p2p/ PMP Outdoor CPE Antenna for wireless communication. <Server based architecture with licenses>	5 nos. (tentatively)	2	IP based Fixed bullet camera along with p2p/PMP Outdoor CPE Antenna for wireless communication. <Server based architecture with licenses>	50 nos. (tentatively)	3	CCTV camera database redundant server with speaker (Shall work in redundant mode, one primary and another secondary server) & Video Management Software	1 set. (2 nos. server)	4	LED Display Screen – Min. 50”	2 No.	5	All hardware/software including network switches, other mounting & electrical accessories including cables, adapters, Fiber Optic, patch cord, housing, connectors, junction boxes, etc.	As required.
	Sl. No.	Name of Item	Quantity																
	1	IP based PTZ dome camera along with p2p/ PMP Outdoor CPE Antenna for wireless communication. <Server based architecture with licenses>	5 nos. (tentatively)																
	2	IP based Fixed bullet camera along with p2p/PMP Outdoor CPE Antenna for wireless communication. <Server based architecture with licenses>	50 nos. (tentatively)																
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4	LED Display Screen – Min. 50”	2 No.																	
5	All hardware/software including network switches, other mounting & electrical accessories including cables, adapters, Fiber Optic, patch cord, housing, connectors, junction boxes, etc.	As required.																	

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2.3	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.
2.4	As far as possible unskilled labour shall be engaged from the area in the vicinity of the site by the contractor. The contractor shall at all times have due regard to the local religious festivals & customs.

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

Sl. No.	Description	SCOPE		REMARKS
		BHEL	BIDDER	
3.1	Establishment:			
3.1.1	For Construction Purpose:			
a	Open space for office (as per availability within project premises)	Yes		Location will be finalized after joint survey with owner.
b	Space for storage (as per availability within/nearby project premises)	Yes		Location will be finalized after joint survey with owner. Note: There can be more than one location of open storage yard, closed shed/ Semi Closed shed. 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 equipments, office / store / canteen consumables		Yes	
e	Canteen facilities for the bidder's staff, supervisors and engineers etc.		Yes	
f	Firefighting equipment like buckets, extinguishers etc.		Yes	
g	Fencing of storage area, office, canteen etc of the bidder		Yes	
3.1.2	For living purpose of the bidder:			
a	Open space for labour colony		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.
3.2	Electricity:			
3.2.1	Electricity for construction purposes (for Site/Project works only) 3 Phase 415/440 V within project premises.			Free
a	Single point source (free)	Yes	Yes	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

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

Sl. No.	Description	SCOPE		REMARKS
		BHEL	BIDDER	
				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	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	Electricity for office, stores, canteen etc. of the bidder within project premises			Chargeable Basis
a	Single point source (Chargeable)	Yes	Yes	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	Further distribution including all materials, Energy Meter, Protection devices and its service		Yes	
c	Duties and deposits including statutory clearances if applicable		Yes	
3.2.3	Electricity for living accommodation of the bidder's staff, engineers, supervisors, labour Hutment etc.			Contractor has to make his own arrangements
a	Single point source		Yes	
b	Further distribution including all materials, Energy Meter, Protection devices and its service		Yes	
c	Payment/Duties and deposits including statutory clearances if applicable		Yes	
3.3	Water Supply:			
3.3.1	For construction purposes:			
a	Making the water available at single point	Yes	Yes	BHEL shall provide water supply free of cost (at single point source) for construction purpose as and when made

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

Sl. No.	Description	SCOPE		REMARKS
		BHEL	BIDDER	
				available by customer tentatively 03 months from the date of start of work. However, contractor may initially make his own arrangement for water supply till source is obtained from Customer.
b	Further distribution as per the requirement of work including supply of materials and execution.		Yes	
3.3.2	For construction, bidder's office, stores, canteen purposes:			
a	Making the water available at single point	Yes	Yes	Chargeable basis.
b	Further distribution and treatment as per the requirement of work including supply of materials and execution		Yes	
3.3.3	Water supply for Living Purpose			Contractor has to make his own arrangement
a	Making the water available at single point		Yes	
b	Further distribution and treatment as per the requirement of work including supply of materials and execution		Yes	
3.4	Lighting			
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	
3.5	Communication facilities for site operations of the bidder			
a	Téléphone, internet, intranet, e-mail etc		Yes	
3.6	Demobilization of all the above facilities		Yes	
3.7	Execution facilities and Site Construction Management:			
a	Preparation of site execution schedules and other input requirements as per Form-14.	Yes	Yes	In consultation with BHEL

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

Sl. No.	Description	SCOPE		REMARKS
		BHEL	BIDDER	
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

1. Note:
2. There can be more than one location of open storage yard, Closed shed/ Semi Closed shed, bidder shall make his establishment accordingly for Material Handling and MM services.
3. Bidder has to make his own arrangement at his cost till the construction power by BHEL is established.
4. 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.
5. 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.

3.8	Land/Open Space:-
3.8.1	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.
3.9	Labour and Staff Colony: Following are in the Bidder's scope of work for labour & staff colony:
3.9.1	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.
3.9.2	Land for labor colony shall be arranged by Contractor at their own cost as per availability outside project area within 5Km, 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 (MAHAGENCO) 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 MAHAGENCO for such land, if applicable. 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.
3.9.3	Development of Bidder's temporary staff colony and labour colony having adequate no. of rest rooms along with toilets & fencing etc.
3.9.4	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.

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

3.9.5	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.
3.9.6	Development and maintenance of above facilities for construction workers deployed by the Contractor shall solely rest with the Contractor.
3.10	<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"> i. Labour rest sheds near work spot. ii. Canteen facility creation / arrangement. iii. Drinking water facility. iv. Labour Bio toilets near work spot in sufficient nos. with regular cleaning & maintenance arrangement. v. Labour colony should have all hygienic condition, dining hall, toilets, proper sewerage system, good drinking water arrangements. vi. Regular fogging in the work place and labour colony to avoid mosquitoes. vii. Statutory documents shall be submitted along with RA Bills for processing of Bills.
3.11	Construction Power:
3.11.1	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.
3.11.2	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.
3.11.3	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.
3.11.4	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.
3.11.5	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.
3.12	Construction water:

TECHNICAL CONDITIONS OF CONTRACT (TCC)

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

3.12.1	Construction Water may be provided at single point on free of charge basis as and when made available at site (tentatively 03 months), 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.
3.12.2	The Contractor should make arrangements for storage of sufficient quantity of water required for work. The agency should also construct sumps (if required) of suitable size for storage of construction water as per their requirement for use in batching plant and construction purposes.
3.12.3	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.

TECHNICAL CONDITIONS OF CONTRACT (TCC)

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

4.0	LIST OF TOOL & PLANTS TO BE DEPLOYED BY THE CONTRACTOR					
4.1	Numbers of T&Ps to be deployed at site shall be decided with respect to Monthly plan and review formats (F-14) based on site requirement. Below given Quantities of T&Ps/ Equipment are tentative and for initial planning purposes by the bidder.					
	4.1.1 List of Major Tools and Plants					
	SN	DESCRIPTION OF EQUIPMENTS	Deployment period			
			Tentative Deployment	Tentative Duration	QUANTITY	
	1.	Crawler Crane/Mobile Crane (Telescopic boom, hydraulically operated with Turret Function)- 40 MT	1 st Month	44 Months	01	To be deployed as per instruction of BHEL Engineer.
	2.	75/80 MT Basic Capacity Hydraulic Crawler Crane	6 th Month	28 Months	01	To be deployed as per instruction of BHEL Engineer.
	3.	Crane - Forklift 5 Ton capacity with 3M lift Double mast type	8th Month	24 Months	01	To be deployed as per instruction of BHEL Engineer.
	4.1.2 List of Other Tools and Plants:					
	SN	Description of Equipment	Deployment period			Remarks
			Tentative Deployment	Tentative Duration	Tentative Quantity	
1.	Pick & carry type tyre mounted mobile crane (Farana)- 14/12 MT Note: Hydra is not allowed.	1 st Month	49 Months	01	To be deployed as per instruction of BHEL Engineer.	
2.	Pick & carry type tyre mounted mobile crane (Farana)- 14/12 MT	4 th Month	46 Months	01	To be deployed as per instruction of BHEL Engineer.	

TECHNICAL CONDITIONS OF CONTRACT (TCC)

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

		Note: Hydra is not allowed.				
	3.	Pick & carry type tyre mounted mobile crane (Farana)- 23MT Note: Hydra is not allowed.	4th Month	46 Months	01	To be deployed as per instruction of BHEL Engineer.
	4.	TRAILER WITH PRIME MOVER-40T or above	4th Month	AS REQUIRED	02	To be deployed as per instruction of BHEL Engineer.
	5.	TRACTOR TRAILER-15/20MT	AS REQUIRED	AS REQUIRED		To be deployed as per instruction of BHEL Engineer.
	6.	TRUCK-ADEQUATE CAPACITY	AS REQUIRED	AS REQUIRED		To be deployed as per instruction of BHEL Engineer.
	7.	WOODEN SLEEPERS(*)- Assorted sizes (3' ft x 6" x 6")	Assorted sizes (3' ft x 6" x 6")	2000 Nos		25% BY FIRST MONTH AND BALANCE WITHIN 3 rd MONTH.
	8.	SLINGS, 'D'- SHACKLES, MAX PULLER.- 01 MT TO 10MT	01 MT TO 10MT	30 PAIRS		To be deployed as per instruction of BHEL Engineer.
	9.	SLINGS, 'D'- SHACKLES, MAX PULLER, PULLEY BLOCKS, HYDRAULIC JACKS, ETC ABOVE 10 MT.	AS REQUIRED	AS REQUIRED		To be deployed as per instruction of BHEL Engineer, WITH TEST REPORTS
	10.	SPANNER SETS RING/D	UP TO 56 MM	TWO SET.		To be deployed as per instruction of BHEL Engineer.

TECHNICAL CONDITIONS OF CONTRACT (TCC)

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

	11.	Tarpaulin (Fire Proof) 400 Gram/sq meter (GSM)	Assorted Size	50 nos./25000 SQ FT	Mentioned quantities to be deployed as per Instruction of BHEL Engineer within the quoted rate. Beyond the mentioned Quantities Tarpaulins shall be procured & provided by BHEL. Size to be decided at Site in consultation with BHEL Engineer.
	12.	Void			
	13.	Grease for preservation of BHEL's equipment. (EP-2 or equivalent)	As per requirement	600 Kg	600 Kg to be supplied within the quoted rate. Additional, BHEL will supply.
<p>Only for items/ T&Ps mentioned in BOQ, payment shall be made by BHEL. Other T&Ps/items as indicated above shall be provided by Contractors within the quoted rates.</p> <p>Note: Contractor shall provide Operator, Fuel, consumables etc. (i.e. 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.</p> <p>End cap of various coils, pipes etc. if required, to be re- installed, the same shall be installed by the contractor within the scope of this tender. End cap will be provided by BHEL.</p> <p>MEASURING AND MONITORING DEVICES (MMD): AS PER REQUIREMENT TO BE FINALISED AT SITE, CONTRACTOR SHALL MEET THE REQUIREMENTS AS PER FQP/MANUAL ETC.</p>					
4.2	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 of the contractor deployed Heavy Equipment, at the time of deployment, as indicated above should be preferably less than 15 years. In case of old age cranes (i.e. age of crane is more than 15 years), the deployment and usage of crane shall be subject to acceptance of BHEL/customer, meeting fitness standards. Contractor has to provide documentary evidence/ proof for age of the crane at the time of deployment to BHEL Engineer.				

TECHNICAL CONDITIONS OF CONTRACT (TCC)

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

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	VOID
4.2.6	<p>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”.</p> <p>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.</p>
4.2.7	IF ABOVE MENTIONED T&P ARE NOT DEPLOYED IN SPECIFIED TIME BHEL SHALL RESERVE RIGHT TO LEVY PENALTY ON CONTRACTOR.
4.2.8	<p>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.</p> <p>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)’.</p> <p>Case 1: Contractor fails to mobilise the Crane within the mobilisation period of 30 days from the date of intimation by BHEL.</p> <p style="text-align: center;">OR</p> <p>Case 2: After mobilisation 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.</p> <p>In both the cases, Penalty shall be levied at the rate of 50% X “daily rate*” for total no. of days eligible for penalty.</p> <p>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).</p> <p>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.</p>

TECHNICAL CONDITIONS OF CONTRACT (TCC)

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

	<p>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)</p> <p>Daily Rate*= Monthly hire Charge /30.</p> <p>NOTE:</p> <p>I) FOR CALCULATION NO. OF DAYS IN A CALENDAR MONTH IS TAKEN AS 30.</p> <p>II) MONTHLY CRANE CHARGES AS DERIVED IN THE “Table for Weightages/ Factors and BOQ of Chapter XIV SCHEDULE OF RATES & QUANTITIES”.</p> <p>III) Monthly charges shall not be payable for the period of breakdown of crane.</p>
4.2.9	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.
4.2.10	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
4.2.11	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 “TABLE FOR WEIGHTAGES/ FACTORS AND BOQ OF CHAPTER XIV 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.
4.2.12	<p>During the extended period of contract, 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:</p> <ul style="list-style-type: none"> I. Rate of 90 % of monthly awarded rates upto 25% of BOQ quantity. II. Rate of 85 % of monthly awarded rates upto 50% of BOQ quantity III. Beyond 50% of BOQ quantity, the rate shall be mutually agreed upon
4.2.13	The wooden sleepers shall be taken back by the contractor on as is where is basis after completion of work. No claim on account of damage /loss shall be payable by BHEL.
4.2.14	Concrete sleepers shall be arranged by BHEL and shall be issued to Contractor free of cost on returnable basis. It shall be responsibility of bidder to collect the concrete sleepers from the designated places within the plant boundary as intimated by BHEL site. No payment shall be made on account of this. Any damage to concrete sleeper for reasons not attributable to vendor, shall be duly considered during reconciliation.
4.2.15	25% of wooden sleepers shall be mobilized by the contractor in the first month of contract and balance within 3rd month of contract.
4.2.16	Quantities of Tarpaulin (fire proof) as indicated in scope of contractor shall be mobilized by the contractor in the first month of contract or as directed by BHEL. Additional quantities shall be supplied by BHEL.
4.2.17	The Tarpaulin supplied by the contractor shall be taken back by the contractor on as is where is basis after completion of work. No claim on account of damage /loss shall be payable by BHEL.

TECHNICAL CONDITIONS OF CONTRACT (TCC)

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

4.2.18	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.
4.2.19	Duration for deployment of T&Ps for which separate monthly hiring rates will be paid AS PER “Table for Weightages/ Factors and BOQ of Chapter XIV SCHEDULE OF RATES & QUANTITIES” is tentative and may change as per requirement.
4.2.20	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/ de-mobilise 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.
4.2.21	Void
4.2.22	Void
4.2.23	Medical/first aid centre/medicine purchased for emergency/doctor purpose along with ambulance services with fuel and operator (round the clock) shall be arranged by BHEL for handling medical emergencies. Cost against these facilities shall be distributed/shared among the vendors working in Koradi (2x660MW) project Site proportionately based on contract value.
4.2.24	void
4.2.25	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 & MMEs to be deployed by BHEL on sharing basis

5.0	LIST OF T&P TO BE PROVIDED BY BHEL FREE OF HIRE CHARGES ON SHARING BASIS:			
5.1	SN	DESCRIPTION	QUANTITY	REMARKS
	1	CRAWLER/MOBILE CRANE OF ANY CAPACITY.	As per requirement	BASED ON WORK REQUIREMENT BHEL SHALL DEPLOY CRANE OVER AND ABOVE VENDOR DEPLOYED CRANES W.R.T. 4.1.1 OF TCC.
5.2	<p>Note:</p> <ol style="list-style-type: none"> The cranes may be BHEL owned or may be obtained on hiring basis including operating and maintenance crew. Operator and O&M for BHEL owned crane will be provided by BHEL. Operator and O&M for hired crane will be provided by the hiring agency. Contractor shall provide the fuel for BHEL (Hired/owned) provided cranes for his use. Contractor shall provide necessary manpower assistance for initial and final assembly & dismantling and for subsequent operations of boom extension and reduction during execution of work. Contractor shall also make necessary arrangements like laying of special sleeper beds and steel plates (material shall be provided by BHEL) for movement and operation of the crane. Above crane will be provided by BHEL for unloading of only major ODC or Heavy consignment where contractor's crane or combination of cranes are not capable of doing the mentioned scope of work. 			
5.3	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. Augmentation of BHEL T & P under special circumstances shall be discretion of BHEL.			

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Chapter– VI: TIME SCHEDULE

6.0	Time Schedule and Mobilization:
6.1	Initial Mobilization After issue of LOA (though Fax/courier/email) the contractor shall report to the Construction Manager/Site In-Charge of BHEL at site within seven (07) days from date of LOA and submit detailed mobilization plan to start work within 15 days from date of LOA; unless 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 MOBILISATION 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	CONTRACT PERIOD The contract period for completion of entire work under scope shall be 51 (Fifty-One) months from the “START OF CONTRACT PERIOD”. If work is not completed with-in the contract period, the contract may be extended at the discretion of BHEL.
6.4	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.

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter– VII: Terms of Payment

7.0	Terms of Payment:																																																							
7.1	WORK OF RECEIPT, UNLOADING, VERIFYING, SHIFTING, STACKING, PRESERVATION, HANDLING AND HANDING OVER OF COMPONENTS OF BOILER WITH AUXILIARIES INCLUDING MILLS & FEEDERS ETC.; ESP WITH AUXILIARIES, STEAM TURBINE & AUXILIARIES; TURBO-GENERATOR & AUXILIARIES; PUMPS WITH AUX., ROTATING MACHINES, TANKS & 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, PRE-FABRICATED STRUCTURES, STRUCTURAL & REINFORCEMENT STEEL, CEMENT SUPPLY INSTALLATION AND MAINTENANCE OF CCTV CAMERA AND PROVIDING SERVICES FOR MATERIALS MANAGEMENT AT 2x660 MW MAHAGENCO KORADI PROJECT, NAGPUR DISTRICT, MAHARASHTRA, INDIA.																																																							
	<table><tr><th>ITEM NO</th><th>DESCRIPTION OF ACTIVITY</th><th>UNIT</th><th>QTY</th><th>% BREAK UP</th></tr><tr><td colspan="5">Section A1</td></tr><tr><td>A1.1</td><td>Material Handling and Material Management for Materials received through Trucks/Trailers at Project Site.</td><td>MT</td><td>162452</td><td>100%</td></tr><tr><td>1</td><td>Unloading, Shifting to Open/Covered Stores.</td><td>MT</td><td>162452</td><td>30%</td></tr><tr><td>2</td><td>Updation of Receipt details, in store Material Registers/BHEL MM Package system.</td><td>MT</td><td>162452</td><td>15%</td></tr><tr><td>3</td><td>Stacking and Verification.</td><td>MT</td><td>162452</td><td>15%</td></tr><tr><td>4</td><td>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 (MRC) in prescribed formats where ever applicable.</td><td>MT</td><td>162452</td><td>25%</td></tr><tr><td>5</td><td>Identification of material in ready to lift position for issue to BHEL/ Erection agency, and updation of issue details in stores Records.</td><td>MT</td><td>162452</td><td>12%</td></tr><tr><td>6</td><td>Completion of contractual obligations as Serial No. 7.5 (7.5.1, 7.5.2, 7.5.3 and 7.5.4)</td><td>MT</td><td>162452</td><td>3%</td></tr><tr><td></td><td></td><td></td><td></td><td></td></tr><tr><td>A1.2</td><td>Material Handling and Material Management for Materials received through Railway Wagons at Railway Siding/Station/Godown.</td><td>MT</td><td>1000</td><td>100%</td></tr></table>	ITEM NO	DESCRIPTION OF ACTIVITY	UNIT	QTY	% BREAK UP	Section A1					A1.1	Material Handling and Material Management for Materials received through Trucks/Trailers at Project Site.	MT	162452	100%	1	Unloading, Shifting to Open/Covered Stores.	MT	162452	30%	2	Updation of Receipt details, in store Material Registers/BHEL MM Package system.	MT	162452	15%	3	Stacking and Verification.	MT	162452	15%	4	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 (MRC) in prescribed formats where ever applicable.	MT	162452	25%	5	Identification of material in ready to lift position for issue to BHEL/ Erection agency, and updation of issue details in stores Records.	MT	162452	12%	6	Completion of contractual obligations as Serial No. 7.5 (7.5.1, 7.5.2, 7.5.3 and 7.5.4)	MT	162452	3%						A1.2	Material Handling and Material Management for Materials received through Railway Wagons at Railway Siding/Station/Godown.	MT	1000	100%
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TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter– VII: Terms of Payment

1	Unloading from Railway wagons or collection from godowns, Re-loading, transportation to site and unloading	MT	1000	30%
2	Updation of Receipt details, in store Material Registers/BHEL MM Package system	MT	1000	15%
3	Stacking and Verification	MT	1000	15%
4	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 (MRC) in prescribed formats where ever applicable	MT	1000	25%
5	Identification of material in ready to lift position for issue to BHEL/ Erection agency, and updation of issue details in stores Records	MT	1000	12%
6	Completion of contractual obligations as Serial No. 7.5 (7.5.1, 7.5.2, 7.5.3 and 7.5.4)	MT	1000	3%
A1.3	<i>Material Handling and Material Management for Materials received at Transporters Godowns within a radius of 50 KM from Project Site</i>	MT	1000	100%
1	Unloading /Collection from Godowns, Re-loading, transportation to site and unloading	MT	1000	30%
2	Updation of Receipt details, in store Material Registers/BHEL MM Package system	MT	1000	15%
3	Stacking and Verification	MT	1000	15%
4	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 (MRC) in prescribed formats where ever applicable	MT	1000	25%
5	Identification of material in ready to lift position for issue to BHEL/ Erection agency, and updation of issue details in stores Records	MT	1000	12%
6	Completion of contractual obligations as Serial No. 7.5 (7.5.1, 7.5.2, 7.5.3 and 7.5.4)	MT	1000	3%

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Chapter– VII: Terms of Payment

	A1.4	<i>Material Handling and Material Management for Structural steel*, Deck sheet, Cladding sheet and Reinforcement steel received through trucks/trailers at project Site</i>	MT	18579	100%
	1	Unloading, Shifting to Open/Covered Stores	MT	18579	30%
	2	Updation of Receipt details, in store Material Registers/BHEL MM Package system	MT	18579	15%
	3	Stacking and Verification	MT	18579	15%
	4	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 (MRC) in prescribed formats where ever applicable	MT	18579	25%
	5	Identification of material in ready to lift position for issue to BHEL/ Erection agency, and updation of issue details in stores Records	MT	18579	12%
	6	Completion of contractual obligations as Serial No. 7.5 (7.5.1, 7.5.2, 7.5.3 and 7.5.4)	MT	18579	3%
	A1.5	<i>Material (other than Cement) re-shifting and re stacking within project premises</i>	MT	10000	100%
	1	Material Re-shifting Stacking	MT	10000	85%
	2	Updation of store material register / BHEL MM package system	MT	10000	12%
	3	Completion of contractual obligations as Serial No. 7.5 (7.5.1, 7.5.2, 7.5.3 and 7.5.4)	MT	10000	3%
	A1.6	<i>Despatch/Outgoing materials (other than Cement)</i>	MT	4000	100%
	1	Identification of Material, Tagging, Packing if required, Preparation of Gate passes etc.	MT	4000	40%

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2	Loading of materials, including T&P of BHEL, into trucks/Carriers at site stores/ erection site for onward transportation to other destinations (Transportation by other agencies)	MT	4000	45%
3	Updation of store material register / BHEL MM package system	MT	4000	12%
4	Completion of contractual obligations as Serial No. 7.5 (7.5.1, 7.5.2, 7.5.3 and 7.5.4)	MT	4000	3%
Section A2				
A2.1	Material Management for: i) Cement received through trucks/trailers in bulkers/bags at project Site (Where unloading of Cement is not in scope of MM agency) ii) Reinforcement Steel / Structural steel (raw) received at project Site (Where unloading of Reinforcement/ Structural steel is in scope of Civil agency)	MT	138456	100%
1	Updation of Receipt details, in store Material Registers/BHEL MM Package system	MT	138456	50%
2	Verification	MT	138456	20%
3	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 (MRC) in prescribed formats where ever applicable	MT	138456	27%
4	Completion of contractual obligations as Serial No. 7.5 (7.5.1, 7.5.2, 7.5.3 and 7.5.4)	MT	138456	3%
Section A2.1(a)				
A2.1(a)	<i>Material Handling and Material Management for Cement received through trucks/trailers in bags at project Site</i>	MT	1000	100%
1	Unloading, Shifting to Covered Stores	MT	1000	30%

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2	Updation of Receipt details, in store Material Registers/BHEL MM Package system	MT	1000	15%
3	Stacking and Verification	MT	1000	15%
4	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 (MRC) in prescribed formats where ever applicable	MT	1000	25%
5	Identification of material in ready to lift position for issue to BHEL/ Erection agency, and updation of issue details in stores Records	MT	1000	12%
6	Completion of contractual obligations as Serial No. 7.5 (7.5.1, 7.5.2, 7.5.3 and 7.5.4)	MT	1000	3%
A2.2	Material re-shifting and re-stacking for Cement within project premises	MT	500	100%
1	Material Re-shifting Stacking	MT	500	85%
2	Updation of store material register / BHEL MM package system	MT	500	12%
3	Completion of contractual obligations as Serial No. 7.5 (7.5.1, 7.5.2, 7.5.3 and 7.5.4)	MT	500	3%
A2.3	Despatch/Outgoing for Cement bag materials	MT	100	100%
1	Identification of Material, Tagging, packing if required, Preparation of Gate passes etc.	MT	100	40%
2	Loading of Cement bags/materials into trucks/Carriers at site stores/ erection site for onward transportation to other destinations (Transportation by other agencies)	MT	100	45%
3	Updation of store material register / BHEL MM package system	MT	100	12%
4	Completion of contractual obligations as Serial No. 7.5 (7.5.1, 7.5.2, 7.5.3 and 7.5.4)	MT	100	3%
Section A.3	Operation and maintenance of weighbridge	Unit	Duration	

TECHNICAL CONDITIONS OF CONTRACT (TCC)

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A.3.1	For 100 MT capacity (New)	Months	48
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Section B: Cranes

SN	Crane description	Unit	Duration
B.1	Pick and Carry Crane 12/14 MT (in Months)	Months	95
B.2	Pick and Carry Crane 23 MT (In Months)	Months	46
B.3	Pick & Carry Crane 40 MT (In Months)	Months	44
B.4	Forklift 5 Ton capacity with 3M lift (In Months)	Months	24
B.5	(a) 75MT/80 MT Basic Capacity Hydraulic Crawler Crane	Months	28
	(b) One Time Mobilisation and Demobilisation charges of above mentioned 75MT/ 80MT Crane	1 LOT	One Time

Section C: Menial and Secretarial Services (Unit Rate Fixed as per GOI minimum wages circular (Vide GOI Order, Dated: 25.09.2024)

SN	Description	Unit	Duration	Unit Rate	Total Amount (In Rs)
C.1	Menial Services (unskilled)	Man-Months	288	₹ 28,082	₹ 8,087,616
C.2	Secretarial Services (Skilled)	Man-Months	480	₹ 29,012	₹ 13,925,760
C.3	Menial Services (Unskilled) - for Grass cutting	Man Months	85	₹ 28,082	₹ 2,386,970

ITEM NO	DESCRIPTION OF ACTIVITY	UNIT	QTY	% BREAK UP
Section D: Supply and installation of CCTV system for storage space				
D.1	Supply and Installation of all hardware and software of the IP based PTZ dome camera along with p2p/PMP Outdoor CPE Antenna for wireless communication surveillance system including for storage space.	Nos.	5	100
1	Completion of supply of all hardware required for the entire contract and acceptance by BHEL official	Nos.	5	70%
2	Completion of installation of the entire CCTV system including display unit with demonstration to BHEL	Nos.	5	30%
D.2	Supply and Installation of all hardware and software of the IP based Fixed bullet camera along with p2p/PMP Outdoor CPE Antenna for wireless communication surveillance system including for storage space.	Nos.	50	100%

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1	Completion of supply of all hardware required for the entire contract and acceptance by BHEL official	Nos.	50	70%
2	Completion of installation of the entire CCTV system including display unit with demonstration to BHEL	Nos.	50	30%
D.3	<i>Supply and Installation of LED Display Screen – Min. 50" with integration capabilities with CCTV system</i>	Nos.	2	100%
1	Completion of supply of all hardware required for the entire contract and acceptance by BHEL official	Nos.	2	70%
2	Completion of installation of the entire CCTV system including display unit with demonstration to BHEL	Nos.	2	30%
<i>Section E: Comprehensive maintenance of the CCTV system for storage space</i>				
E.1	<i>Comprehensive maintenance of the CCTV system</i>	Months	48	100%

Note: The quantities mentioned above are tentative in nature and may vary to any extent.

7.2 VOID

7.3 VOID

7.4 VOID

7.5 Other payment terms & condition

7.5	OTHER payment terms & condition	
	% from every RA Bill to be paid only after satisfactory completion otherwise forfeited	
7.5.1	HOUSEKEEPING & CLEANING OF ALL CLOSED SHEDS	1%
7.5.2	PRESERVATION PLANNED FOR THE MONTH	0.5%
7.5.3	Safe working at the place of work	0.5%
7.5.4	Implementation of E-stores for records/data	1%
	TOTAL	3%

Note: The aforementioned payment of 3% is within the 100% payment as mentioned in clause 7.1 above.

Structural Steel* - Payment terms for materials supplied by BHEL Manufacturing Unit & Shop Fabricated Structure shall be covered under Item no A1.1 whereas Item A1.4. shall be applicable for supplies of material other than BHEL Manufacturing Units/ Shop fabricated Structure.

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7.6	<p>Cranes (For Section B)</p> <p>Payment for Cranes shall be made on monthly basis on actual deployment basis as per the awarded monthly rate against each crane. For “75MT/80 MT Basic Capacity Hydraulic Crawler Crane”, <i>One Time Mobilisation and Demobilisation charges shall be paid</i>. Payment towards mobilization and de-mobilisation of 75MT/80 MT crane shall be made in the manner as specified below:</p> <p>(a) First 50% of the specified amount for mobilization and demobilization will be paid after deployment of the crane complete in all respects including all assemblies, sub-assemblies, accessories & components, assembly of crane as required by BHEL and BHEL’s acceptance of load test of assembled crane at site.</p> <p>(b) Remaining 50% of the specified amount for mobilization and demobilization will be paid after removing the crane from the project site and clearing the site premises in all respect pertaining to the T&P.</p> <p>No other payment shall be paid for the other T & Ps deployed for carrying out the work as per the scope of this tender. Price variation compensation and Overrun compensation will not be applicable for items in Sec-B. One Month for Section-B shall be 30 days of working.</p>
7.7	<p>Menial, Secretarial & Grass Cutting Services: (For Section C)</p> <p>Payment for Menial, Secretarial & Grass Cutting Services shall be made on monthly basis on actual deployment as per the awarded monthly rate against each head. These services may be used for BHEL Offices, stores, site offices, establishments etc. as decided by BHEL.</p> <p>Payment for the same shall be made as per the service-month rate fixed in item no C.1 to C.3 of rate schedule Section -C Terms of Payment, on pro-rata basis as at actuals.</p> <p>The actual requirement of manpower shall be discussed and finalized with engineer in-charge before start of the works.</p> <p>Presently, rates fixed are on the basis of total minimum wages circular dated 15-03-2025 by Customer (MAHAGENCO) at the time of NIT and the same shall be revised at times when it is changed by the Government / MAHAGENCO. As such, during execution of the job the rates against Menial and secretarial services shall be regulated as per applicable wages circular issued by Customer from time to time.</p> <p>Therefore, price variation compensation and overrun compensation will not be applicable for items in Sec-C.</p> <p>Payment against items in Section C of Chapter-XIV Schedule of Rates and Quantities shall be calculated & paid in following manner;</p> <ul style="list-style-type: none">• Per service month rate (for Unskilled Services) = Factor (G) x minimum wages per month (rounded to next higher fifty value)• Per service month rate (for Skilled Services) = Factor (G) x minimum wages per month (rounded to next higher fifty value) <p>Minimum wages per month = Daily Rate Minimum Wage per day (rounded value) x 26 Days.</p>

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	<p>In case the monthly minimum wage (considering 26 days in a month) is less than Rs.21,000/- (or the limit as per extant guideline) the Factor (G) shall be 1.41, however, if the monthly minimum wage (considering 26 days in a month) is equal to or more than Rs. 21,000/- (or the limit as per extant guideline) the Factor (G) shall be reduced by 0.12 (For non-applicability of ESI – 0.036 & for non-applicability of Bonus – 0.084), Accordingly the Factor (G) shall be 1.29.</p> <p>Factor (G), for Unskilled Manpower and Skilled Manpower has been calculated taking in to account applicable statutory benefits such as PF, ESI, Bonus, Uniform, Leave pay, Overhead & Profit. In case of any change in wages/ guidelines, extant applicable guidelines shall be followed while calculating the factors (G).</p> <p>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-in-charge. Rates during extended period shall be followed as above.</p> <p>Note: BHEL at its sole discretion reserves the right to re-shuffle the work allocation of the personnel deployed for menial and secretarial services.</p> <p>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:</p> <p>A. Supervision/secretarial services @ Rs100 per service-day.</p> <p>B. Menial services for BHEL office and stores etc. @ Rs 100 per service-day.</p> <p>C. Menial services for Grass Cutting @ Rs 100 per service-day.</p>
7.8	<p>Section A.3-Operation and maintenance of weighbridge</p> <p>It may be noted that BHEL shall install 01 no. of Weighbridges of 100MT. Payment for Operation and maintenance of weighbridges shall be made on monthly basis on actuals as per the awarded monthly rate.</p> <p>BHEL shall install and calibrate the weighbridge (one time only) and spares of all major repairs shall be in BHEL scope. Further, Preventive maintenance, further calibration and manpower for repairs shall be in Contractor's scope. Contractor shall provide One Computer Operator/ Supervisor in control room for weighbridges for two shifts (i.e. one for Morning and other for evening).</p>
7.9	<p>Supply and installation of CCTV system (For Section -D)</p> <p>The supply and installation of entire component of the CCTV system shall be completed within the Three month from start of work. CCTV system shall include all the necessary hardware and software required for the cameras as mentioned in clause no. 2.2.18 and Chapter XIII or elsewhere in TCC. Price variation compensation and Overrun compensation will not be applicable for items in Sec-D.</p>

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7.10	Comprehensive maintenance of CCTV system (For Section -E) Price variation compensation and Overrun compensation will not be applicable for items in Sec-E.
7.11	Progressive Payment/ Final Payment: The payments for works under the scope of this contract shall be as per Clause 16.10 of TCC and clause no 2.6; 2.22; 2.23 of General Conditions of Contract. <i>All documents like HR Clearance, Quality and Safety Compliances, etc. required for processing the RA Bills should be submitted along with RA Bills.</i>
7.11.1	<u>Documents required for RA Bill:</u> GST Complied Invoice of the work done as per approved BBU. WAM -6 for RA Bill. Jointly signed Measurement sheet. Power of Attorney before submission of Bill. Validity of Bank Guarantees as applicable under the contract. HR/IR compliance documents: i. Wages payment sheet as per applicable minimum wages. ii. Proof of PF contribution submission. iii. Proof of ESI/ WC contribution submission iv. Proof of Bonus payment as per Bonus Act if applicable. v. Proof of EL payment if applicable. vi. Any other statutory document if applicable.
7.11.2	<u>Documents required for Final Bill:</u> The final bill is drawn as soon as the entire work is completed. From the final amount due, all amounts already claimed up to the previous running account bill will be deducted. It should be ensured that in the final bill the following additional particulars have been provided: <ul style="list-style-type: none"> • Final Bill in WAM-7 Format. • 'No claim' certificate from the contractor. • Clearance certificates where ever applicable viz. Clearance Certificates from Customer, various Statutory Authorities like Labour department, PF Authorities, Commercial Tax department etc. • Final Material re-conciliation statement duly approved by BHEL. • Indemnity Bond as per prescribed format. • Deviation statement showing the difference between the actuals and as per the contract. • Final Delay Analysis.
7.12	SECURED RECOVERABLE ADVANCES: Interest Free Secured Mobilization Advance as per GCC Clause No.2.13.1: Interest Free Mobilization Advance shall be disbursed in following mentioned stages of major resource mobilization as specified hereunder: <ol style="list-style-type: none"> 1. For Mobilization and installation of Site Infrastructure by contractor i.e. site office, stores etc-2%

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2. For Mobilization of required T&Ps at site to start the work - 2%
3. For Mobilization of other resources and consumables - 1%

Note:

1. BHEL Site-CM shall be the certifying authority for assessing the admissibility of advance to contractor.

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Chapter– VIII: Taxes & Duties

8.0	TAXES & DUTIES
8.1	<p>The contractor shall pay all (save the specific exclusions as enumerated in this clause) taxes, fees, license, charges, deposits, duties, tools, royalty, commissions, other charges, etc. which may be levied on the input goods & services consumed and output goods & services delivered in course of his operations in executing the contract. In case BHEL is forced to pay any of such taxes/duties, BHEL shall have the right to recover the same from his bills or otherwise as deemed fit.</p> <p>However, provisions regarding GST on output supply (goods/service) and TDS/TCS as per Income Tax Act shall be as per following clauses.</p>
8.2	GST (Goods and Services Tax)
8.2.1	<p>GST as applicable on output supply (goods/services) are excluded from contractor's scope; therefore, contractor's price/rates shall be exclusive of GST. Reimbursement of GST is subject to compliance of following terms and conditions. BHEL shall have the right to deny payment of GST and to recover any loss to BHEL on account of tax, interest, penalty etc. for non-compliance of any of the following condition.</p>
8.2.2	<p>The admissibility of GST, taxes and duties referred in this chapter or elsewhere in the contract shall be limited to direct transactions between BHEL & its Contractor. BHEL shall not consider GST on any transaction other than the direct transaction between BHEL & its Contractor.</p>
8.2.3	<p>Contractor shall obtain prior written consent of BHEL before billing the amount towards such taxes. Where the GST laws permit more than one option or methodology for discharging the liability of tax/levy/duty, BHEL shall have the right to adopt the appropriate one considering the amount of tax liability on BHEL/Client as well as procedural simplicity with regard to assessment of the liability. The option chosen by BHEL shall be binding on the Contractor for discharging the obligation of BHEL in respect of the tax liability to the Contractor.</p>
8.2.4	<p>Contractor has to submit GST registration certificate of the concerned state. Contractor also needs to ensure that the submitted GST registration certificate should be in active status during the entire contract period.</p>
8.2.5	<p>Contractor/Vendor has to issue Invoice/Debit Note/Credit Note indicating HSN/SAC code, Description, Value, Rate, applicable tax and other particulars in compliance with the provisions of relevant GST Act and Rules made thereunder.</p>
8.2.6	<p>Vendor has to submit GST compliant invoice within the due date of invoice as per GST Law. In case of delay, BHEL reserves the right of denial of GST payment if there occurs any hardship to BHEL in claiming the input thereof. In case of goods, vendor has to provide scan copy of invoice & GR/LR/RR to BHEL before movement of goods starts to enable BHEL to meet its GST related compliances. Special care should be taken in case of month end transactions.</p>
8.2.7	<p>Vendor has to ensure that invoice in respect of such services which have been provided/completed on or before end of the month should not bear the date later than last working day of the month in which services are performed.</p>
8.2.8	<p>Subject to other provisions of the contract, GST amount claimed in the invoice shall be released on fulfilment of all the following conditions by the Contractor: -</p> <ol style="list-style-type: none">Supply of goods and/or services have been received by BHEL.Original Tax Invoice has been submitted to BHEL.Contractor/ Vendor has submitted all the documents required for processing of bill as per contract/ purchase order/ work order.In cases where e-invoicing provision is applicable, vendor/contractor is required to submit invoice in compliance with e-invoicing provisions of GST Act and Rules made thereunder.

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	<p>e. Contractor has filed all the relevant GST return (e.g. GSTR-1, GSTR-3B, etc.) pertaining to the invoice submitted and submit the proof of such return along with immediate subsequent invoice. In case of final invoice/ bill, contractor has to submit proof of such return within fifteen days from the due date of relevant return.</p> <p>f. Respective invoice has appeared in BHEL's GSTR – 2A for the month corresponding to the month of invoice and in GSTR-2B of the month in which such invoices has been reported by the contractor along with status of ITC availability as "YES" in GSTR-2B. Alternatively, BG of appropriate value may be furnished which shall be valid at least one month beyond the due date of confirmation of relevant payment of GST on GSTN portal or sufficient security is available to adjust the financial impact in case of any default by the contractor.</p> <p>g. Contractor has to submit an undertaking confirming the payment of all due GST in respect of invoices pertaining to BHEL.</p>
8.2.9	Any financial loss arises to BHEL on account of failure or delay in submission of any document as per contract/purchase order/work order at the time of submission of Tax invoice to BHEL, shall be deducted from contractor's bill or otherwise as deemed fit.
8.2.10	TDS as applicable under GST law shall be deducted from contractor's bill.
8.2.11	Contractor shall comply with the provisions of e-way bill wherever applicable. Further wherever provisions of GST Act permits, all the e-way bills, road permits etc. required for transportation of goods needs to be arranged by the contractor.
8.2.12	Contractor shall be solely responsible for discharging his GST liability according to the provisions of GST Law and BHEL will not entertain any claim of GST/interest/penalty or any other liability on account of failure of contractor in complying the provisions of GST Law or discharging the GST liability in a manner laid down thereunder.
8.2.13	In case declaration of any invoice is delayed by the vendor in his GST return or any invoice is subsequently amended/alterd/deleted on GSTN portal which results in any adverse financial implication on BHEL, the financial impact thereof including interest/penalty shall be recovered from the Contactor's due payment.
8.2.14	Any denial of input credit to BHEL or arising of any tax liability on BHEL due to non-compliance of GST Law by the Contractor in any manner, will be recovered along with liability on account of interest and penalty (if any) from the payments due to the Contactor.
8.2.15	In the event of any ambiguity in GST law with respect to availability of input credit of GST charged on the invoice raised by the contractor or with respect to any other matter having impact on BHEL, BHEL's decision shall be final and binding on the contractor.
8.2.16	<p><u>Variation in Taxes & Duties:</u></p> <p>Any upward variation in GST shall be considered for reimbursement provided supply of goods and services are made within schedule date stipulated in the contract or approved extended schedule for the reason solely attributable to BHEL. However downward variation shall be subject to adjustment as per actual GST applicability.</p> <p>In case the Government imposes any new levy/tax on the output service/goods after price bid opening, the same shall be reimbursed by BHEL at actual. The reimbursement under this clause is restricted to the direct transaction between BHEL and its contactor only and within the contractual delivery period only.</p> <p>In case any new tax/levy/duty etc. becomes applicable after the date of Bidder's offer but before opening of the price Bid, the Bidder/Contractor must convey its impact on his price duly substantiated by documentary evidence in support of the same before opening of price bid. Claim</p>

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	for any such impact after opening the price bid will not be considered by BHEL for reimbursement of tax or reassessment of offer.
8.3	<u>Income Tax:</u> TDS/TCS as applicable under Income Tax Act, 1961 or rules made thereunder shall be deducted/collected from contractor's bill.

8.4 BOCW Act & Cess Act

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

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

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7.	It shall be sole responsibility of the contractor as employer to provide notice of poisoning or occupation notifiable diseases, to report of accident and dangerous occurrences to the concerned authorities under the Building and other Construction Workers' (Regulation of Employment and Conditions of Service) Act, 1996 and the rules made thereunder and to make payment of all statutory payments & compensation under the Employees' Compensation Act, 1923.
8.	It shall be the responsibility of the sub-contractor as employer to make payment/deposit of applicable cess amount on the extent of work involving building or construction workers engaged by the sub-contractor within a period of one month from the receipt of payment. It shall also be responsibility of the Contractor to furnish BHEL on monthly basis, Receipts/ Challans towards Deposit of the Cess under the Building and other Construction Workers' Welfare Cess Act, 1996 and the rules made thereunder along with following statistics: (i) Number of Building Workers employed during preceding one month. (ii) Number of Building workers registered as Beneficiary during preceding one month. (iii) Disbursement of Wages made to the Building Workers for preceding wage month. (iv) Remittance of Contribution of Beneficiaries made during the preceding month
9.	BHEL shall reimburse the contractor the Cess amount deposited for the purposes of the Building and other Construction Workers' (Regulation of Employment and Conditions of Service) Act, 1996 under the Building and other Construction Workers' Welfare Cess Act, 1996 and the rules made thereunder. However, BHEL shall not reimburse the Fee paid towards the registration of establishment, fees paid towards registration of Beneficiaries and Contribution of Beneficiaries remitted.
10.	It shall be responsibility of the Building Worker engaged by the Contractor and registered as a beneficiary under the Building and other Construction Workers' (Regulation of Employment and Conditions of Service) Act, 1996 to contribute to the Fund at such rate per mensem as may be specified by the State government by notification in the Official Gazette. Where such beneficiary authorizes the contractor being his employer to deduct his contribution from his monthly wages and to remit the same, the contractor shall remit such contribution to the Building and other construction Workers' Welfare Board in such manner as may be directed by the Board , within the fifteen days from such deduction.
11.	Bidders may please note that though the quoted price is exclusive of BOCW (which will be reimbursed by BHEL as per sub-clause 9 above) , however, If at any point of time during the contract period, non-compliance of the provisions of the Building and other Construction Workers' (Regulation of Employment and Conditions of Service) Act, 1996 and the Building and other Construction Workers' Welfare Cess Act, 1996 and the rules made thereunder is observed, BHEL reserves the right to deduct the applicable cess (1%) on the contract value and penalty (if any, imposed by Cess Authorities) from the payables on account of non-compliance.
12.	The contractor shall declare to undertake any liability or claim arising out of employment of building workers and shall indemnify BHEL from all consequences / liabilities / penalties in case of non-compliance of the provisions of the Building and other Construction Workers' (Regulation

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	of Employment and Conditions of Service) Act, 1996 and the Building and other Construction Workers' Welfare Cess Act, 1996 and the rules made thereunder.
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Chapter-IX : MATERIAL HANDLING & MATERIAL MANAGEMENT OF MATERIAL RECEIVED BY ROAD

9.0	MATERIAL HANDLING & MATERIAL MANAGEMENT OF MATERIAL RECEIVED BY ROAD								
9.1	Majority of consignments shall reach site directly for delivery. However, a good number of 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.								
9.2	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.								
9.3	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								
9.4	<p>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.</p> <p>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:</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center;">No. of Days of Deliberate Delay</th><th style="text-align: center;">Rate of penalty in each case</th></tr> </thead> <tbody> <tr> <td style="text-align: center;">03 to 05 days</td><td style="text-align: center;">@Rs. 500 per day per truck/ lorry/ trailer</td></tr> <tr> <td style="text-align: center;">06 to 10 days</td><td style="text-align: center;">@Rs. 1000 per day per truck/ lorry/ trailer</td></tr> <tr> <td style="text-align: center;">More than 10 days</td><td style="text-align: center;">@Rs. 2000 per day per truck/ lorry/ trailer</td></tr> </tbody> </table>	No. of Days of Deliberate Delay	Rate of penalty in each case	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
No. of Days of Deliberate Delay	Rate of penalty in each case								
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								
9.5	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								
9.6	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.								
9.7	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.								

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9.8	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.
9.9	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.
9.10	The material shall be so stacked that it should facilitate easy identification, retrieval and handling for issue as and when need arises.
9.11	<p>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</p> <p>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.</p>
9.12	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.
9.13	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.
9.14	<p>HANDLING HEAVIER CONSIGNMENTS:</p> <p>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.</p>

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9.15	<p>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.</p> <p>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.</p>
9.16	<p>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</p>
9.16.1	<p>Computers and printers with latest up-gradation, memory and compatible with BHEL computers/LAN equipment to be installed/used within BHEL site office – Computer – 06 sets and Printer cum Scanner – 02 sets, Photocopier machine 1 No. & Hard disk – 02 no (for monthly backup of records).</p> <p>Computers and printers are envisaged for various Material Management activities such as record keeping/data entry done by bidder's staff.</p> <p>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.</p> <p>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.</p> <p>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 In-charge. 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.</p>

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9.16.2	Item rate obtained in the “ TABLE FOR WEIGHTAGES/ FACTORS AND BOQ OF CHAPTER XIV SCHEDULE OF RATES & QUANTITIES ” has specific mention of “materials management” with sole purpose to emphasize the requirement of sufficient no. Of adequately qualified manpower to ensure best obtainable quality of work. Accordingly, supervisors/manpower (apart from workmen on cranes and material handling purpose) as indicated against each activity in the table below, normally to work at (but not limited to) BHEL site office
9.16.3	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 80 nos. or above Per day.
9.17	RESPONSIBILITIES OF THE CONTRACTOR -
9.17.1	RECEIPT & ISSUE Scope includes execution of various activities as follows:
9.17.1.1	Receipt, unloading, carrying out receipt inspection, detailed verification, stacking and regular stock verification of materials at site.
9.17.1.2	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: <ul style="list-style-type: none"> i. 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. ii. Reporting such discrepancy to BHEL immediately on receipt of the consignment. iii. Assisting BHEL in lodging insurance claims in respect of loss/damage as stated above. iv. The Contractor shall actively assist and expedite the process of obtaining Material Receipt Certificates (MRCs) from the End Customer, i.e., MAHAGENCO, in timely manner. Any delay in the submission/verification of the MRCs shall entitle BHEL to initiate appropriate contractual remedies as deemed necessary.
9.17.1.3	Issue of materials to BHEL's erection contractors, preservation of stacked materials, re-stacking/re-handling as necessary, progressive and final reconciliation with BHEL's erection agencies and preparation of necessary document/ record in respect of these activities.
9.17.1.4	Return of excess/defective materials by various erection contractors of BHEL
9.17.1.5	LOADING AND DISPATCH OF OUTGOING MATERIALS.
9.17.1.6	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

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	<p>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.</p>
9.17.2	<p><u>PRESERVATION OF COMPONENTS</u></p> <p>Contractor shall arrange for preservation of components as per BHEL's storage and preservation manual and/or as per instructions of BHEL engineers.</p> <p>One or more of following methods shall be adopted for preservation.</p> <ol style="list-style-type: none"> 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, fit-up 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. <p>BHEL WILL PROVIDE FREE OF COST ALL PRESERVATIVES LIKE PRESERVATIVE OIL, LUBRICANTS, CHEMICALS, INHIBITORS ETC EXCEPT PRIMERS & PAINTS. CONTRACTOR SHALL PROVIDE RED OXIDE ZINC CHROMATE (ROZC) PRIMER CONFORMING TO IS: 2074 OF REPUTED MANUFACTURES (E.G. ASIAN PAINTS, BERGER, JENSON & NICHOLSON, BOMBAY PAINTS, SHALIMAR OR ANY OTHER BHEL APPROVED MANUFACTURER) REQUIRED FOR PRESERVATION SHALL BE PROVIDED BY THE CONTRACTOR AND USED FOR THIS PURPOSE.</p> <p>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.</p>
9.17.3	<p><u>RECORD KEEPING -</u></p> <p>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.</p>

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	<p>extension period as well. This does not absolve the contractor from his responsibility towards the satisfactory execution of the job.</p> <p>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/-</p>
9.19	VOID
9.20	<p>Weigh Bridge:</p> <ol style="list-style-type: none"> 1. It is envisaged to have 01 no. of weigh bridge of 100MT Capacity (New) 2. Contractor shall provide manpower (One computer operator/ Supervisor in two shifts i.e. one in Morning & other in Evening) for operation and maintenance of BHEL owned weighbridge in control room at the construction site. The scope of services shall include record keeping of all the entry through weighbridge, day to day operation and maintenance. The service shall be rendered to suit BHEL site requirement. 3. Contractor shall arrange and ensure periodical calibration of the weigh bridge with / from the Government authorized agency / Govt. Department with traceability to National Physical Laboratory of India. Also, all the relevant test as per IS and/or any other requirement shall be arranged by the contractor. The proof of all such calibrations and tests shall be furnished to BHEL. All fees, charges as applicable in this regard are in contractor's scope (01 calibration is envisaged per year). 4. Contractor shall arrange Inspection of weigh bridge by the Statutory Authorities during operational phase as applicable. Contractor shall pay all fees, charges etc as applicable (01 inspection is envisaged per year). 5. Regular repair, maintenance and upkeep of all installations & facilities of weigh bridge arising out of wear and tear during use particularly of ramps and platforms shall be maintained for satisfactory availability and operation of weigh bridge. All cost towards these incidental charges are in contractor's scope. 6. Contractor at all times during the currency of this contract shall possess necessary license, permits as applicable to the provision of the operation of weigh bridge and pay all fee and charges as may be applicable. BHEL shall in no way be held responsible for any of the lapse of the contractor. 7. Contractor has to ensure the availability of operational weigh bridge to the maximum as possible. All the breakdowns or operational/preventive maintenance are to be arrange by the contractor in consultation with the BHEL. Spares & other supplies of all major repairs shall be in BHEL scope. If contractor fails to maintain the weigh bridge operationality then BHEL reserves the right to take appropriate action for making the weigh bridge operational on cost recovery basis from Contractor plus 5% overheads. Any charges paid by BHEL towards operation & maintenance of weigh bridge shall be deducted from contractor's due bills.

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9.21	<p>The unloading/handling of cement received through bulker facility is not in the scope of work. However, the receipt and issue records of cement received through bulker/bag facility, directly issued to other civil agencies, shall be maintained by contractor as per the instruction of BHEL engineer.</p> <p>In case, cement bag is to be unloaded in BHEL storage yard, contractor has to execute the work along with its verification and record keeping etc.</p> <p>Also, the receipt and issue records of Reinforcement Steel/ Structural Steel (raw) which are directly issued to/unloaded by other civil agencies, shall be maintained by contractor as per the instruction of BHEL engineer.</p>
9.22	<p>Contractor shall ensure the availability of sufficient manpower (including issue supervisor) during extended hours to meet the project requirements at site.</p>

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Chapter-X : MATERIAL HANDLING AND MATERIAL MANAGEMENT OF MATERIALS RECEIPT BY RAIL

10.	MATERIAL HANDLING AND MATERIAL MANAGEMENT OF MATERIALS RECEIPT BY RAIL
10.1	All the consignments reaching the project site by rail shall be unloaded at the railway siding, followed by loading on truck/trailer, local transportation from railway siding to the storage yard/stores, unloading, verification and stacking and preservation as applicable to the consignments arriving by road. The approximate distance from main storage yard to railway siding will be 4-5 KM.
10.2	It will be responsibility of the contractor to keep in touch with officials of BHEL and railways regarding advance information about arrival of consignments. The contractor shall collect railway receipts or other such dispatch documents.
10.3	Contractor shall deploy his crane, trailers/trucks and all other T & P including additional T & P and manpower etc for handling of materials at such unloading bay/ location and transport to stores/ storage yard.
10.4	Contractor shall in his own interest arrange to release the railway wagons/racks with utmost alacrity to avoid any demurrage charges. Demurrage/ wharfage etc., which result due to contractor's fault, shall be recovered from the bill payment due to the contractor.
10.5	Contractor shall provide area lighting at railway siding for handling of materials during evening/ night.
10.6	All the responsibilities specified in the contractor's scope for the materials received by road shall also be applicable mutatis-mutandis for all the consignments received by rail at railway siding.
10.7	For the consignments received by rail the payment will be regulated on pro-rata basis on the accepted unit rate as per "TABLE FOR WEIGHTAGES/ FACTORS AND BOQ OF CHAPTER XIV SCHEDULE OF RATES & QUANTITIES". The above also includes all costs towards unloading from the wagon at the unloading siding in the plant and loading on the transport and the cost towards internal transportation to storage yard/ stores shed of BHEL/ client.
10.8	Quantum of work: one rake may contain approximately 1000 MTs in 45 wagons (approx.).
10.9	Adequate number of vehicles / handling equipment: It is the responsibility of the contractor to deploy suitable capacity and adequate number of cranes to lift a Consignment along with suitable number of crew members to cater to the tonnage received. For this purpose, the contractor has to work continuously after receipt of wagons at the siding without any break, so as to complete the work within the free time allowed by railway without demurrage and wharfage. The contractor has to deploy adequate number of cranes and trailers. Any demurrage and wharfage levied by railways will be to contractor's account.
10.10	void

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter-X : MATERIAL HANDLING AND MATERIAL MANAGEMENT OF MATERIALS RECEIPT BY RAIL

10.11	Prior notice time: Shipping dept of BHEL units will intimate the contractor well in advance (atleast 4 days in advance) regarding the arrival of consignment at the railway siding to enable the contractor for mobilizing the cranes & vehicles and working crew. It is suggested that the contractor has to trace the actual location of rake through online services to avoid last minute rush.
10.12	RAILWAY RECEIPT AND PREPARATION LR/GC WHILE INTERCARTING.
10.12.1	BHEL personnel will be deputed to witness/assist for the receipt of materials referred in RR and making appropriate dispatch documents like LR / GC note of the contractors to accompany consignments up to Project Site storage yard. The document prescribed by BHEL has to be maintained by the contractor for verification at any point of time for receipt, storage and inter-carted consignments.

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter-XI: RESHIFTING AND RESTACKING

11.	Re-shifting
11.1	<p>Owing to several project requirements, many components may have to be shifted from originally stacked locations to elsewhere within the project premises for the lead distance not exceeding 5 kms. 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.</p> <p>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.</p> <p>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 "TABLE FOR WEIGHTAGES/ FACTORS AND BOQ OF CHAPTER XIV SCHEDULE OF RATES & QUANTITIES".</p>
11.2	<p>Re-stacking/re-arranging</p> <p>Over a period of time, restacking/rearranging of the materials stacked earlier may arises 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.</p> <p>Restacking/re-arranging shall be applicable for materials returned by BHEL's erection contractors as well.</p> <p>Separate item rate is available for reshifting and restacking of stacked materials and the payment will be regulated on pro-rata basis on the accepted unit rate calculated as per "Table for weightages/ factors and BOQ of chapter XIV schedule of rates & quantities"</p>

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter-XII : Material Handling & Material Management of Material Collections/Dispatches

12.	Material Handling & Material Management of Material Collections/Dispatches
12.1	Incoming materials
12.1.1	Even though majority of consignments shall reach site directly for delivery. A good number of consignments shall be booked on Go-downs delivery/ door delivery basis against original consignee copy basis, the procedure of material collection shall be adopted as detailed here below:
12.1.2	Contractor shall keep in touch with officials of BHEL regarding advance information about arrival of consignments. The contractor shall collect original LRS/RRS/lorry way bills or other such dispatch documents
12.1.3	The contractor shall remain in regular contact with the concerned transporters or railways based on the dispatch documents 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. Loading at transporters Go-down, local transport up to BHEL/ client's stores/ site and unloading at stores/storage yard/site, verification and stacking shall also be in the scope of contract
12.1.4	Detention charges/ demurrage/ wharfage etc., which result due to contractor's fault, shall be recovered from the bill payment due to the contractor.
12.1.5	Payment will be regulated on pro-rata basis on the accepted unit rate as per "Table for weightages/ factors and BOQ of chapter XIV schedule of rates & quantities" . No other payment such as minimum charges for carrier etc will be made. All arrangements including transport, labour and other T&P etc is in contractor's scope. These godowns are expected to be located within a radius of 50 km approx. from the project site
12.1.6	All the responsibilities specified in the contractor's scope for the materials received by road shall also be applicable mutatis-mutandis for all the consignments (incoming smalls) received from transporters godown/s.
12.2	Outgoing materials/dispatches
12.2.1	For varying reasons many a times, project materials/BHEL assets/scraps materials are to be dispatched to other BHEL sites/mfg. Units/other locations.
12.2.2	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 "TABLE FOR WEIGHTAGES/ FACTORS AND BOQ OF CHAPTER XIV SCHEDULE OF RATES & QUANTITIES" .

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter-XII : Material Handling & Material Management of Material Collections/Dispatches

12.2.3	<p>Such materials which need to be brought to transporter's/railway godown for booking, arrangements shall be adopted as mentioned below:</p> <p>BHEL shall arrange suitable vehicle for transportation of materials from stores/storage yard/site to transporters godowns. Contractor shall identify, tag, pack and prepare gate passes for the materials to be dispatched. Materials shall be loaded onto the outgoing vehicle with due care and handed over to the transporter with clear goods receipt which shall be submitted with BHEL promptly within the quoted rates. Payment will be regulated on pro-rata basis on the accepted unit rate as per "TABLE FOR WEIGHTAGES/ FACTORS AND BOQ OF CHAPTER XIV SCHEDULE OF RATES & QUANTITIES".</p>
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TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter-XIII : Supply installation and maintenance of CCTV camera

13	Supply installation and maintenance of CCTV camera
13.1	The scope of work includes supply & installation of IP based CCTV system for storage areas, for the purpose of geo-fencing the boundaries with fixed cameras and covering entire inside area of storage (both open yards and covered sheds) with PTZ cameras such that there should not be any dark patch.
13.2	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.
13.3	CCTV camera database servers to be provided by the bidder should be latest available in the market with sufficient storage and memory configuration with 4K resolution graphics capability. The servers shall have redundant hot swappable power supply with minimum three no. redundant, hot-swappable hard disks following RAID 5 implementation. Necessary OS, software, antivirus licenses to be provided along with the server hardware for working of the CCTV system.
13.4	<p>The camera and database servers shall offer both video stream management, video stream storage management. These servers shall also manage and store configuration information/database for the whole system. Recording frame rate & resolution in respect of individual camera shall be programmable. It shall be possible to view and record at different resolutions and frame rates and this shall be individually programmable on every camera. The system shall ensure that all configuration information, video recordings, and user database etc, is suitably replicated on the standby camera/database server(s) so that in the event of failure of one server, the performance of the system is not affected. It shall be possible to take back-up of system configuration and database on removable media i.e. CD/DVD etc. and restoring the same if required.</p> <p><u>Other essential items / service under the scope of vendor</u></p> <ol style="list-style-type: none"> 1. Bidder shall provide One no Workstation of Intel Core i7, 32 GB DDR5 RAM, 4GB graphics, 1TB SSD/HDD, licensed O/S or better for Managing / configuring all CCTV facility. 2. All the camera / RF device / Device should be powered by UPS Power. Necessary quantity of Small UPS (0.6 KVA) or similar to consider with in their scope. 3. Any statutory compliance issued by GOI for CCTV system in between during the contract period to be comply by the vendor. 4. All software / hardware used for the project shall be licensed & legal 5. The VMS Server should be scalable in nature to accommodate additional 25 no's of camera on later date
13.5	<p>Smart Storage area/yard monitoring:</p> <p>Smart Storage/Yard Management shall involve entry of Truck/trailers/shipments, identification of unloading area and T&Ps, unloading of consignment, material verification, Record keeping, preservation and issue of material to executing agency. Storage area shall include the open yard area and covered sheds.</p>

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter-XIII : Supply installation and maintenance of CCTV camera

	<p>The storage area to be equipped with SSMS (smart storage monitoring system). SSMS shall include monitoring of yard management processes through CCTV cameras. Monitoring shall be done for material storage condition, water logging, excess vegetation and any intrusion inside storage yard.</p> <p>PTZ camera shall have auto tracking analytics to track any intruder inside the storage yard. Feed of all these cameras to be available in the Security Control room and BHEL office.</p>
13.5.1	All the aforementioned data to be available in the Security Control room and BHEL office for monitoring the project activities. The display of feed shall be through two no. of LED screens. The storage yard CCTV system shall have the provision to interconnect with the existing CCTV systems, so that feed of any camera can be seen from any of the CCTV system installed in the project. Detail towards interconnection, method of communication & network to be finalized at the time of installation.
13.5.2	The contractor shall depute one person round the clock (in shifts) to look after the operation of CCTV system. The payment of operator shall be considered under secretarial services as envisaged in Chapter VII of TCC.
13.6	General Requirements:
13.6.1	<p>All the cable trays, power packs, erection hardware, mounting arrangement (viz. junction boxes, mounting brackets, glands, housings, nut-bolts, conduits, etc.) are included in the bidder's scope.</p> <p>However, Poles/High mast for mounting CCTV shall be provided by BHEL.</p>
13.6.2	All network mounting racks, NVR (if required) and other required accessories are included in the bidder's scope.
13.6.3	The bidder shall guarantee satisfactory performance of the equipment under stipulated variations of voltage and frequency.
13.6.4	UPS of sufficient rating for the operation of CCTV system is to be provided by the agency.
13.6.5	The output of the CCTV system/camera feed shall be displayed to the LED video wall in the Security Control Room and BHEL/Customer office. The Necessary hardware/software/cables to be supplied by the agency for the same.
13.6.6	Any other equipment, module, software required for the safe and satisfactory operation, control, protection, monitoring, testing and maintenance of the system shall also be included by the bidder within the quoted price.
13.6.7	All equipment supplied shall meet the requirements of the applicable International codes and standards or their amendment. Camera certification has to be CE/FCC/UL or equivalent.
13.6.8	All the network switches shall be of high quality and shall be sized to meet the functional requirements as specified.
13.6.9	The CCTV system shall be designed as a standalone IP based network architecture with simultaneous recording of all video streams using H.264 or better compression technique. System shall ensure that once recorded, video cannot be altered.

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter-XIII : Supply installation and maintenance of CCTV camera

13.6.10	Camera shall be provided with sufficient storage space to store recordings (video & audio both) of all cameras at 25/30 FPS at 1920x1080 for a period of fifteen (15) days or more. All recordings shall have camera ID, location, date and time of recording.
13.6.11	Facility shall be provided to select a camera or a group of cameras in a zone for recording in CIF, 2CIF, 4 CIF, HD(720P) & Full HD(1080P) resolution.
13.6.12	It shall be possible to export selected portion of recording to portable media devices. The exported clip shall be in commonly used movie file formats e.g. mpg, avi, mp4, etc. and no special software shall be required to view the same.
13.6.13	Server software shall allow the clients seamless operation of all cameras regardless of the actual connection to different recording servers. Software shall allow client applications to interact with all the camera/database servers simultaneously and allow simultaneous display of live video/recorded video regardless of the zone in which the client is connected.
13.6.14	The system shall be able to accept potential free contacts from other system and use the same for predefined actions (like zoom/pan/tilt of cameras, bringing out predefined views on predefined monitors etc.) This feature shall be extensively used for linking fire related signals.
13.6.15	The system operation would be of covering the complete view of areas with pan/tilt zoom, propositioning of the cameras and with programmability to monitor any camera on any monitor either manually or automatically in a defined switching. The system shall be suitable for installation and shall be able to work in dust prone thermal power plant environment.
13.6.16	The camera and video management software shall be ONVIF compliant.
13.6.17	It is intended to listen the sound of the selected camera surroundings with minimum noise level along with the video. Any hardware/software required to meet this functionality shall be supplied.
13.6.18	Quantity variation is applicable for Fixed & PTZ cameras.
13.6.19	It is intended to listen the sound of the selected camera surroundings with minimum noise level along with the video. Any hardware/software required to meet this functionality shall be supplied.
13.6.20	For Technical Specifications for IP Camera Specification (Fixed / PTZ) refer Chapter XVII- Technical Specifications And Drawings.
13.6.21	INSTALLATION SCHEDULE:
13.6.21.1.	Supply and Installation of the system shall be done by the agency after obtaining clearance from BHEL engineer at site.
13.6.21.2.	Normally BHEL shall provide fronts (poles or masts for mounting CCTV cameras) progressively to Contractor for installation of CCTV camera. However, the common system with redundant servers and display system shall be made ready for integration in such a way that that the surveillance system with required specification is operational even if fronts for single camera is made available.
13.6.21.3.	BHEL shall instruct the contractor every month, to install number of cameras based on the availability of fronts. The contractor shall install every month all the cameras as instructed by BHEL and integrate with CCTV surveillance system to make it operational for monitoring of storage space and unloading activities.
13.6.21.4.	Installation schedule:

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter-XIII : Supply installation and maintenance of CCTV camera

	<p>Installation of CCTV common system with redundant servers and display system - within Three months from the date of intimation.</p> <p>Installation of Addl. CCTV camera as described in clause 13.6.21.3 - within 30 days from the date of intimation.</p>
13.6.21.5.	<p>If the installation of CCTV system gets delayed beyond 30 days from the scheduled mentioned in clause 13.6.21.4, BHEL shall reserve the right to procure and install the CCTV system and recover the cost thereof from the contractor as per actual purchase and installation charges + 5% overhead. In such case, the scope of comprehensive Maintenance Services of CCTV system shall be removed from the scope of work and no payment shall be made for the same.</p>
13.6.21.6.	<p>Delay in supply or installation & commissioning of the system may cause penalty as mentioned below:</p> <p>Case 1. If the installation of CCTV common system with redundant servers and display system is delayed beyond three months penal rate of Rs 1000/- per day shall apply.</p> <p>Case 2. If the installation of CCTV camera as described in clause 13.6.21.3 is delayed beyond 30 days from the date of intimation penal rate of Rs 400 per camera per day shall apply.</p> <p>The number of days for the purpose of calculating penalty shall be as follows: For Case 1: Days beyond Three months after intimation by BHEL, until date of completion of work or alternate arrangement by BHEL (on cost recovery basis).</p> <p>For Case 2: Days beyond 30 days after intimation by BHEL, until date of completion of work or alternate arrangement by BHEL (on cost recovery basis).</p>
13.6.22	Maintenance
13.6.22.1.	<p>Comprehensive Maintenance Services of CCTV system for storage yard is in the scope of contractor.</p>
13.6.22.2.	<p>Defective equipment/parts to be replaced by the contractor should be of the equivalent or higher configuration. Any equipment replaced/provided to BHEL during this contract shall be retained by BHEL at the end of contract and will be property of BHEL. No additional payment for spares shall be made by BHEL towards replacement of faulty equipment/parts</p>
13.6.22.3.	<p>All liabilities arising out of any fault /replacement of any part, shall be borne by the vendor, if not mentioned separately otherwise. Any damage or loss caused to the hardware/equipment or to their parts due to negligence, mishandling by resident engineer shall be made good by the vendor at the prevailing market price of that item's or provide a new one (from OEM) of the same make and equivalent or higher specifications. The decision of BHEL in this regard shall be final and binding on the vendor.</p>

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter-XIII : Supply installation and maintenance of CCTV camera

13.6.22.4.	Maintenance, installation, reinstallation/relocation, trouble shooting and other problems/issues related to CCTV system shall be provided by the vendor during the contract period.
13.6.22.5.	If any activity or component is required for the completeness or successful functioning of any item, the same shall be part of the scope of work.
13.6.22.6.	Additional manpower shall be deployed by the vendor (if required) for the completion of the CCTV system maintenance activity within stipulated timelines. No additional payment shall be made by BHEL for the same
13.6.22.7.	Maintenance service shall cover services, repairs and replacements necessary to keep the equipment in good working order on reasonable use of the equipment during the contract period.
13.6.22.8.	Preventive maintenance, wherever required, shall be carried out to keep the equipment in good working condition.
13.6.22.9.	Contractor shall monitor the operations of CCTV installed by BHEL 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 working days. BHEL shall be informed in writing about the daily status of material handling activities carried out in blind storage space during down-time.
13.6.22.10.	The contractor shall designate one (01) competent person who will be single point contact taking up issues related maintenance and operation of CCTV system.
13.6.22.11.	The contractor shall maintain a case sheet/logbook/record of all the complaints made by the users against the hardware/software/network etc. of the CCTV system that shall regularly be shared with BHEL for verification.
13.6.22.12.	Penalty for downtime of more than three days shall be Rs 400/- per camera per day.
13.6.23	Special Terms & Conditions:
13.6.24	Non-Disclosure Agreement: The selected bidder after placement of work order and prior to commencement of work must sign the Non-Disclosure Agreement (NDA) as per the format specified by BHEL or any other as mutually agreed.
13.6.25	Agency shall coordinate with various stakeholders including BHEL, its sub-agencies and Customer, wherever required to execute the contract.
13.6.26	All Statutory Compliance (as applicable) for execution of the scope of work, shall be in the scope of Agency. No Extra charges shall be made against any statutory compliance.
13.6.27	No extra payment shall be made for any work executed on Sunday/holidays or beyond official working hours.
13.6.28	All the software/license procurement, installation for connection/integration to BHEL/Customer's systems shall be in scope of agency.
13.6.29	For connecting the internal system of BHEL/Customer, suitable hardware / software for secured access is to be provided and configured by the agency in consultation with BHEL/Customer.
13.6.30	Watch and ward of resources deployed by the agency, at site shall be in the scope of the agency. No claim shall be entertained in case of any theft/damage of resources deployed by the agency.
13.6.31	All taxes, insurance charges, local law and order obligations (if any) will be complied with/borne by the Bidder

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter-XIII : Supply installation and maintenance of CCTV camera

13.6.32	Arranging requisite Gate passes (Temporary/permanent/ Sunday / holiday / Night pass) for entering inside the plant area is Agency's responsibility.
13.6.33	Compliance of all statutory laws, legal obligations, in vogue shall be the responsibility of the owner
13.6.34	No compensation shall be payable on account of drone accidental damage, idling due to reasons / conditions beyond the control of BHEL.
13.6.35	Training and demonstration of the system to the concerned officials shall be in the scope of the agency
13.6.36	The CCTV system shall be designed for visibility in all weather conditions, suitable for day and night to facilitate 24x7 operation for high availability
13.6.37	Transportation and Installation charges to be included in the price quoted.

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter-XIV : Schedule of rates & quantities

14.1 Schedule of rates & quantities				
Section A: Material Handling and Management				
ITEM NO	DESCRIPTION OF ACTIVITY	UNIT	QTY	Weightage Factor for item Price w.r.t total amount quoted by bidder
Section A1				
A1.1	Material Handling and Material Management for Materials received through Trucks/Trailers at Project Site	MT	162452	0.390806304
A1.2	Material Handling and Material Management for Materials received through Railway Wagons at Railway Siding/Station/Godown	MT	1000	0.005439578
A1.3	Material Handling and Material Management for Materials received at Transporters Godowns within a radius of 50 KM from Project Site	MT	1000	0.006098456
A1.4	Material Handling and Material Management for Structural steel, Deck sheet, Cladding sheet and Reinforcement steel received through trucks/trailers at project Site	MT	18579	0.036154545
A1.5	Material (other than Cement) reshifting and re stacking within project premises	MT	10000	0.021758312
A1.6	Despatch/Outgoing materials (other than Cement)	MT	4000	0.007845250
Section A2				
A2.1	Material Management for: i) Cement received through trucks/trailers in bulkers/bags at project Site (Where unloading of Cement is not in scope of MM agency) ii) Reinforcement Steel / Structural steel (raw) received at project Site (Where unloading of Reinforcement/ Structural steel is in scope of Civil agency)	MT	138456	0.053038183
A2.1(a)	Material Handling and Material Management for Cement received through trucks/trailers in bags at project Site	MT	1000	0.001578244
A2.2	Material re-shifting and re-stacking for Cement within project premises	MT	500	0.000620572
A2.3	Despatch/Outgoing for Cement bag materials	MT	100	0.000128711
Section A3: Operation and maintenance of weighbridge				
A.3.1	For 100 MT capacity (New)	Months	48	0.041091950
Section B: Cranes				
B.1	Pick and Carry Crane 12/14 MT (in Months)	Months	95	0.101485821
B.2	Pick and Carry Crane 23 MT (In Months)	Months	46	0.071728021

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter-XIV : Schedule of rates & quantities

B.3	Pick & Carry Crane 40 MT	Months	44	0.092868519	
B.4	Forklift 5 Ton capacity with 3M lift	Months	24	0.016107647	
B.5	(a) 75MT/80 MT Basic Capacity Hydraulic Crawler Crane	Months	28	0.106284081	
	(b) One Time Mobilisation and Demobilisation charges of above mentioned 75MT/ 80MT Crane	1 LOT	One Time	0.019186326	
Section D : Supply and installation of CCTV system for storage space					
D.1	Supply and Installation of all hardware and software of the IP based PTZ dome camera along with p2p/PMP Outdoor CPE Antenna for wireless communication surveillance system including for storage space.	Nos.	5	0.002006668	
D.2	Supply and Installation of all hardware and software of the IP based Fixed bullet camera along with p2p/PMP Outdoor CPE Antenna for wireless communication surveillance system including for storage space.	Nos.	50	0.007595489	
D.3	Supply and Installation of LED Display Screen – Min. 50” with integration capabilities with CCTV system	Nos.	2	0.000804261	
Section E : Comprehensive maintenance of the CCTV system for storage space					
E.1	Comprehensive maintenance of the CCTV system for storage space	Month	48	0.017373062	
Section C: Menial and Secretarial Services (Unit Rate Fixed as per minimum wages circular by MAHAGENCO)					
SN	Description	Unit	Duration	Unit Rate	Total Amount (In Rs)
C.1	Menial Services (unskilled)	Man Months	288	₹ 28,082	₹ 8,087,616
C.2	Secretarial Services (Skilled)	Man Months	480	₹ 29,012	₹ 13,925,760
C.3	Menial Services (Unskilled) - for Grass cutting	Man Months	85	₹ 28,082	₹ 2,386,970

14.2	Instructions to the bidders regarding Price Bid (Schedule of Rates & Quantities) and its Calculations:
14.2.1	Schedule of Rates and Quantities consist of the followings: <ul style="list-style-type: none"> a. Section-A Material Handling and Management: Section-A1, A2 & A3 b. Section-B: Crane. c. Section-C: Menial and Secretarial Services (pre-fixed Prices by BHEL). d. Section-D: Supply and installation of CCTV system for storage space. e. Section-E: Comprehensive maintenance of the CCTV system for storage space.
14.2.2	Bidder has to quote for Total price i.e. for Section- A1, A2 & A3, Section-B, Section C, Section D & Section E in PRICE BID at BHEL E-procurement Portal
14.2.3	Offer evaluation shall be done as per Total price quoted by bidder as referred in Clause 14.2.2
14.2.4	Price for Section- A1, A2 & A3, Section-B, Section D and Section E shall be derived by subtracting “Section C price (Pre-fixed Prices by BHEL) from Total quoted price by bidder as referred in clause 14.2.2
14.2.5	BHEL has fixed Weightage Factors for individual items falling under Section A1, A2 & A3, Section B, Section D and Section E.

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter-XIV : Schedule of rates & quantities

14.2.6	These item wise Weightage Factors and Quantities allocations are as detailed in above Table.
14.2.7	Item Price for each item falling under these sections are derived by Multiplying Weightage Factors and Price arrived in Clause 14.2.4.
14.2.8	Further to calculate Unit Item Rate , the item price arrived at 14.2.7 shall be divided by respective quantities, rounding down to two decimal places.
14.2.9	Grand Total of Section-A, Section-B, Section D and Section E shall be derived by summing up the actual total amount individual items thus derived for (as per Cl 14.2.7 above), i.e. Section- A1, A2 & A3+ Section-B+ Section D +Section E rounding off to zero decimal places.
14.2.10	For Final awarded value, Total of Section A1, A2 & A3+ Section B + Section C+ Section D+ Section E shall be considered.
14.2.11	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 at as per serial no. 14.2.8 above.

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter-XV: General

15.0	General
15.1	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.
15.2	The work shall be executed under usual conditions affecting major thermal power projects in an existing power plant and in conjunction with numerous other operations at site. The contractor and his personnel shall cooperate with personnel of customer's contractors, coordinating his work with others and proceed in a manner that shall not delay or hinder the progress of work as a whole.
15.3	VOID
15.4	VOID
15.5	VOID
15.6	VOID
15.7	VOID
15.8	The distances indicated elsewhere in the tender are only approximate. However, the tenderers should assess the various distances and site conditions by visiting site before submitting their offer. No additional/extra claims for any variation in this regard will be entertained
15.9	Contractor shall arrange for cutting and removal of vegetation growth/grass etc. in the storage yard as and when called for by BHEL as incidental to work. Payment shall be made as indicated in BOQ.
15.10	Housekeeping of closed sheds are also included in the scope of work. Contractor shall carry out the housekeeping works on regular intervals (once a week).
15.11	The tools and tackles received from various BHEL units are to be handed over to customer after completion of work at site. It shall be the responsibility of contractor to handover tools and tackles to customer through BHEL and make necessary handing over protocols.
15.12	If the contractor or his workmen break, cable, deface, injures or destroy any part of building, road, kerbs, fence enclosures, water pipes, drains, electric/ telephone poles or wires, trees or any other property or damage any part of erected stores/equipment, stored components etc., within the project premises or outside, the contractor shall make the same good at his own expenses (of which BHEL site engineer's decision shall be final) failing which the site engineer shall get the same rectified by other agencies and recover the cost from the contractor and the same shall be deducted from the sums that may be due then or at any time thereafter become due to the contractor or even from his security deposit.
15.13	PLEASE NOTE: TANDEM OPERATION FOR MATERIALS HANDLING/ERECTION/LIFTING/ LOWERING FROM HEIGHTS NEEDS TO BE APPROVED BY BHEL/CUSTOMER.

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16.0.	SPECIAL CONDITION OF CONTRACT (Clauses mentioned in earlier Chapters of TCC will supercede in case of conflict with clauses mentioned in this chapter)
16.1.	INTENT OF THE SPECIFICATION
16.1.1.	The intent of this specification is to provide services for execution of the project according to most modern and proven techniques and codes. The omission of specific reference to any method, equipment or material necessary for the proper and efficient services, shall not relieve the contractor of the responsibility of providing such services / facilities to complete the work or portion of work awarded to him. The quoted / accepted rates / price shall deem to be inclusive of all such contingencies.
16.1.2.	The work shall conform to requirement given in various documents that will be provided during execution. If any portion of works is found to be defective in workmanship and not conforming to documents or other stipulations, the contractor shall dismantle and re-do the work duly replacing the defective materials at their own cost, failing which recoveries, as determined by BHEL, shall be affected from contractor's bills. In case, drawings/ instructions get revised in the course of execution, latest revision shall be applicable and work has to be executed accordingly. In case, drawings/ instructions get revised after completion, latest revision shall be applicable and rework has to be executed accordingly by vendor without any objection. Any extra work /rework shall be paid as per respective clauses in GCC.
16.1.3.	It is not the intent of this specification to specify herein all the details of execution. However, the system shall conform in all respects to high standards of quality and workmanship for performing the required duties in a manner acceptable to purchaser who will interpret the meaning of documents and specifications and shall be entitled to reject any work or material, which in his judgments is not in full accordance herewith.
16.1.4.	The omission of specific reference to any work or method, equipment or material necessary for proper and efficient working of the plant shall not relieve the tenderer of the responsibility of providing such facilities to complete the work at quoted rates. Any mismatch/ defect found due to mistake in workmanship shall have to be rectified by the vendor free of cost. Inspection by BHEL/Customer does not relieve vendor of his responsibility of executing quality work.
16.1.5.	The work covered under this specification is of highly sophisticated nature, requiring the best quality workmanship, supervision, engineering and construction management. The contractor should ensure proper planning and successful and timely completion of the work to meet the overall project schedule. The contractor must deploy adequate quantity of tools & plants, modern / latest construction aids etc. He must also deploy adequately trained, qualified and experienced supervisory staff and skilled personnel.

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16.1.6.	BHEL Engineer's decision regarding correctness of the work and method of working shall be final and binding on the contractor. No claims for extra payment from the contractor will be entertained on the ground of deviation from the methods / sequence adopted.
16.1.7.	Following shall be the minimum responsibility of contractor and have to be provided within finally accepted rates / prices:
16.1.8.	Provision as required of all types of labour, supervisors, engineers, watch and ward, tools & tackles, calibrated MMEs (Monitoring and Measuring Equipment) as specified and otherwise required for the work, consumables for erection, testing and commissioning-including material handling as applicable following safe erection methodology and BHEL HSE norms of HIRA (Hazard Identification and Risk assessment) / JSA(Job Safety analysis).
16.1.9.	Achieving Proper out-turn / Turn-over as per BHEL plan and commitment.
16.1.10.	Completion of work as per BHEL Schedule.
16.1.11.	Good quality and accurate workmanship.
16.1.12.	Repair and rectification.
16.1.13.	Preservation / Re-conservation of all components during custody/storage till handover.
16.2.	GENERAL SERVICES TO BE RENDERED BY THE BIDDER
16.2.1.	Deployment of all skilled and unskilled manpower required for execution, supervision, watch & ward, and other services to the rendered under this specification.
16.2.2.	Deployment of all erection tools & tackle, construction machinery, transportation vehicles and all other implements in adequate number and size, appropriate for the erection work to be handled under scope of this specification except otherwise specified.
16.2.3.	Supply of all consumables, e.g. cleaning agents, diesel oil, lubricant etc. as necessary for such erection work, unless specified otherwise.
16.2.4.	Providing support services for the contractor's execution staff e.g. construction of site offices, residential accommodation and transport to work site for executing personnel.
16.2.5.	Maintaining proper documentation of all the activities undertaken by the Contractor as per the proforma mutually agreed with BHEL, Submission of monthly progress reports with photographs /PPT and any such document as and when desired by BHEL/owner, taking approval of all statutory authorities i.e. Boiler Inspector, Factory Inspector etc., as applicable for respective portions of work fall under the jurisdiction of such statutes of laws.
16.2.6.	Any other service, although not specifically called for but required for a contract of the size and nature indicated in the specification.
16.3.	GENERAL TECHNICAL REQUIREMENTS

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16.3.1.	Except where otherwise specified, the plant/equipment shall comply with the appropriate Indian Standard or an agreed internationally accepted Standard Specification as mentioned elsewhere in contract specifications, each incorporating the latest revisions at the time of tendering. Where no internationally accepted standard is applicable, the Bidder shall give all particulars and details as necessary, to enable BHEL to identify all of the plant/equipment in the same detail as would be possible had there been a Standard Specification.
16.3.2.	Tools brought by contractor that will be used during execution shall not be accepted except with the specific approval of the Engineer including third party inspection if required.
16.4.	OBLIGATIONS OF CONTRACTOR
16.4.1.	CONSUMABLES & OTHER ITEMS FOR THE SCOPE OF WORK (excepting those indicated in BHEL scope)
16.4.1.1.	The contractor shall provide within finally accepted price / rates, all consumables (excepting those indicated in BHEL scope) for the scope of work.
16.4.1.2.	It shall be the responsibility of the contractor to plan the activities and store sufficient quantity of consumables. Non-availability of any consumable materials or equivalent suggested by BHEL cannot be considered as reason for not attaining the required progress or for additional claim.
16.4.1.3.	BHEL reserves the right to reject the use of any consumable, if it is not found to be of the required standard / make / purity or when shelf life has expired. Contractor shall ensure display of shelf life on consumable wherever required and records maintained.
16.4.1.4.	Storage of all consumables shall be done as per requirement / instruction of the Engineer by the contractor at his cost.
16.4.1.5.	In case of improper arrangement for procurement of any consumable, BHEL reserves the right to procure the same from any source and recover the cost from the Contractor's first subsequent bill at market value plus the applicable 5% overheads of BHEL from time to time. Postponement of such recovery is normally not permitted. The decision of Engineer in this regard shall be final and binding on the Contractor.
16.4.1.6.	All charges on account of any kind of taxes and duties on Consumable obtained from any source for carrying out the works in the scope of the contractor shall be borne by the contractor.
16.4.2.	TOOLS AND PLANTS / MONITORING AND MEASURING EQUIPMENT (MMEs)
16.4.2.1.	All T&Ps and MMEs excepting those specifically indicated in BHEL scope are to be provided by the Contractor. Contractor has to make his own arrangement at his cost for completing the formalities (including arrangement of Road permits / e-way bill, if any) if required with tax authorities, for bringing their materials, plants and equipments at site for the execution of work under this contract.
16.4.2.2.	VOID

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16.4.2.3.	All T&Ps to be deployed by the contractor shall have the approval of BHEL Engineer with regard to brand, quality and specification.
16.4.2.4.	Timely deployment of adequate T&Ps is the responsibility of the contractor. The contractor shall be prepared to augment the T&P at short notice to match the planned programme and to achieve the milestones.
16.4.2.5.	Contractor shall maintain and operate his tools and plants in such a way that major breakdowns are avoided. In the event of major breakdown, contractor shall make alternative arrangements expeditiously so that the progress of work is not hampered.
16.4.2.6.	<p>In the event of contractor failing to arrange the required tools, plants, machinery, equipment, material or non-availability of the same owing to breakdown, BHEL will make alternative arrangement and recover the expenses incurred from the dues payable to contractor. Recoveries shall be as per relevant clauses mentioned in TCC. Decision of BHEL shall be final and binding on the contractor.</p> <p>It is not obligatory on the part of BHEL to provide any tools and tackles or other materials other than those specifically agreed to do so by BHEL. However, depending upon the availability, BHEL/ BHEL's Customer handling equipment and other plants may be made available to the contractor on payment of hire charges as fixed, subject to the conditions laid down by BHEL/ Customer from time to time. Unless paid in advance, such hire charges, if applicable, shall be recovered from contractor's bill/ security deposit or any other due payment in one instalment.</p>
16.4.2.7.	The T&P to be arranged by the contractor shall be in proper working condition and their operation shall not lead to unsafe condition. The movements of cranes, and other equipment should be such that no damage / breakage occurs to foundations, other equipments, material, property and men. All arrangements for the movement of the T&P etc. shall be the contractor's responsibility.
16.4.2.8.	The contractor at his cost shall carry out periodical testing of his equipment. Test certificates shall be furnished to BHEL.
16.4.2.9.	<p>Contractor shall ensure deployment of serviced and healthy T&Ps including cranes, lifting tackles, wire ropes, manila ropes, winches and slings etc. History card and maintenance records for major T&Ps will be maintained by the contractor and will be made available to BHEL Engineer for inspection as and when required. Fitness certificate / Test Certificates of T&P shall have to be submitted before it is put in use. Identification for such T&Ps will be done as per BHEL Engineer's advice.</p> <p>BHEL reserves the right to permit only new slings up to 20 mm and lifting tackles up to 3 MT capacities.</p> <p>Contractor shall deploy trained Trailer and Crane Operator to enable safe operations at site. Necessary licenses should be available with them and a copy of the same shall be submitted to BHEL.</p>

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16.4.2.10.	Contractor shall ensure deployment of reliable and calibrated MMEs (Inspection measuring and Monitoring equipment). The MMEs shall have test / calibration certificates from authorized / Government approved / accredited agencies traceable to National / International standards. Each MME shall have a label indicating calibration status i.e. date of calibration, calibration agency and due date for calibration. A list of such instruments deployed by contractor at site with its calibration status is to be submitted to BHEL Engineer for control.
16.4.2.11.	Re-testing / re-calibration shall also be arranged at regular intervals during the period of use as advised by BHEL Engineer within the contract price. The contractor will also have alternate arrangements for such MME so that work does not suffer when the particular instrument is sent for calibration. If any MMEs not found fit for use, BHEL shall have the right to stop the use of such item. It will be necessary for the contractor to deploy proper item. Any readings taken by the defective instrument will be recalled and repeat the readings taken by that instrument with a proper one. In case he fails to do so, BHEL may deploy MMEs and retake the readings at contractor's cost.
16.4.2.12.	BHEL shall have lien on all T&P, MMEs and other equipment of the contractor brought to the site for the purpose of work awarded by BHEL. BHEL shall continue to hold the lien on all such items throughout the period of contract / extended period. The contractor and / or his sub-contractors, without the prior written approval of the Engineer, shall remove no material brought to the site for the purpose of work awarded by BHEL.
16.4.2.13.	The month wise T&P deployment plan to execute the work is to be submitted as per relevant format as per the instruction of BHEL. It shall be the contractor's responsibility to deploy the required T&P, for timely and successful completion of the job, to any extent.
16.4.3.	Obligations in respect of T&Ps and MMEs provided by BHEL
16.4.3.1.	T&P / MMEs being provided by BHEL to sub-contractor free of hire charges shall be shared by other subcontractors working for BHEL at site and the allotment done by BHEL Engineer shall be final and binding.
16.4.3.2.	BHEL T&P will be issued in basic assembled condition. Additional loose components / sub-assemblies / attachments as and when necessary, will be issued by BHEL. Assembly of such additional loose components/sub-assemblies/ attachments is in contractor's scope.
16.4.3.3.	Increasing / shortening of the crane boom to suit work requirements shall have to be arranged by the indenting contractor at his cost including restoration to a state as directed by BHEL. All necessary manpower tools, support, consumables, illumination etc. will have to be arranged by contractor at his cost. If required, contractor has to return the crane with original boom.
16.4.3.4.	The area and infrastructure development of the area to be carried out by the customer. However, in construction projects of this magnitude it is possible that all the areas / approaches may not be ready. In such cases arrangement of sleepers etc. for safe operation / movement of equipment including cranes / trailers etc. shall be the responsibility of the contractor at his cost. No compensation on this account shall be payable.

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16.4.3.5.	In the event of contractor not using and maintaining BHEL T&Ps according to BHEL's instructions. BHEL will have the right to withdraw such item without any notice and no claim in this regard shall be entertained and contractor shall be responsible for delay in execution on this account.
16.4.3.6.	The contractor shall furnish regular utilization report of the BHEL T&Ps, as per requirement of BHEL.
16.4.3.7.	Any loss / damage to any part of BHEL T&Ps and MMEs shall be to the contractor's account and any expenditure on these accounts by BHEL will be recovered from the contractor's bill in case the contractor fails to make good the loss.
16.4.3.8.	It shall be responsibility of the contractor to take delivery of T&Ps and MMEs from stores or place of use by other contractor at project site, transport the same to site and return the same to BHEL store / place as intimated by Engineer in project site in good working conditions after use.
16.4.3.9.	<p>The contractor shall return BHEL T&Ps and MMEs issued to him in good working condition as and when desired by BHEL (on completion or reduction of workload). If contractor delays return of T&P and MME, hire charges as applicable shall be levied by BHEL from time, it was requisitioned till the time of actual return.</p> <p>T&Ps and MMEs returned in damaged / unserviceable condition shall be got repaired by BHEL at its own discretion and actual expenses incurred plus 5% overheads shall be recovered from the contractor.</p>
16.4.3.10.	Replacement cost including BHEL overheads in respect of irreparable / completely damaged / non-return of T&Ps and MMEs shall be recovered from the contractor's running / final bills
16.4.4.	Obligations in respect of Cranes provided by BHEL
16.4.4.1.	<p>BHEL will make available the cranes (as specified elsewhere in Technical Conditions of Contract) free of charge to the contractor on sharing basis mainly for the purposes enumerated/indicated therein. BHEL cranes have to be shared with other agencies / contractors of BHEL. The allocation of cranes shall be the discretion of BHEL engineer, which shall be binding on the contractor.</p> <p>The Crane shall be available for (14) fourteen hours inclusive of one-hour lunch break daily, excluding Sundays and scheduled Holidays. For Crane working beyond normal working hours or on Sundays /Holidays, prior permission of the BHEL Site In-charge/ Construction Manager is to be obtained. However, BHEL Site In-charge/ Construction Manager's decision in this regard will be final after judging the proficiency of the contractor's crane requirement.</p>
16.4.4.2.	BHEL Cranes may be initially issued in basic assembled condition. Any alteration/addition like boom reduction / extension, assembly of components/sub-assemblies needed for modulating the capacity/reach/other features of cranes and restoration to the state as directed by BHEL shall be the contractor's responsibility.

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16.4.4.3.	<p>The day-to-day upkeep and running maintenance of BHEL Cranes are excluded from the scope. However, any additional helpers if any required during Preventive / Breakdown Maintenance, Assembly / disassembly shall be provided by contractor at no extra cost.</p> <p>BHEL may also provide cranes through crane hiring agencies in which case the day-to-day upkeep and running maintenance shall be excluded from scope of contractor.</p>
16.4.4.4.	Minor consumables like cotton cloth, cotton waste, etc. is to be supplied by Contractor. All spares and lubricants/grease are excluded from scope.
16.4.4.5.	VOID
16.4.4.6.	BHEL cranes will be withdrawn for regular and capital maintenance as per the respective schedule of maintenance. As far as possible such schedules will be intimated to the contractor in advance and may be adjusted depending on the work requirements at site. However, no claim whatsoever will be entertained on account of non-availability of cranes.
16.4.4.7.	Where the services of the cranes provided by BHEL are to be shared by other agencies / contractors of BHEL, the contractor's responsibilities defined above will also be apportioned accordingly to the beneficiary agency. Working arrangements in this regard will be done at site by BHEL engineer and in any case his decision shall be final and binding.
16.4.4.8.	Major breakdowns will be attended to by BHEL. However, in case of breakdowns or damages due to negligence of the contractor, the complete service/repair charges including cost of spares plus 5% overheads shall be recovered from the contractor.
16.5.	RESPONSIBILITIES OF CONTRACTOR IN RESPECT OF LABOUR, SUPERVISORY STAFF, ETC.
16.5.1.	Refer relevant clauses of General Conditions of Contract (GCC) also in this regard
16.5.2.	The contractor shall deploy all the necessary skilled/semiskilled/ unskilled labour including highly skilled workmen etc. These workmen should have previous experience on similar job. They shall hold valid certificates wherever necessary. BHEL reserves the right to insist on removal of any employee of the contractor at any time if he is found to be unsuitable and the contractor shall forthwith remove him.
16.5.3.	Contractor shall also comply with the requirements of local authorities/ project authorities calling for police verification of antecedents of the workmen, staff etc.
16.5.4.	It is the responsibility of the contractor to engage his workmen in shifts and or on overtime basis for achieving the targets set by BHEL. This target may be set to suit BHEL's commitments to its customer or to advance date of completion of events or due to other reasons.
16.5.5.	Contractor shall provide at suitable arrangement for urinal and drinking water facility with necessary plumbing & disposal arrangement including construction of septic tank. These installations shall be maintained in hygienic condition at all times.

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16.5.6.	The Contractor in the event of engaging 20 or more workmen, shall obtain Independent license under the Contract labour (Regulation and Abolition) Act 1970 from the concerned authorities based on Form-V issued by the Principal Employer/Customer. In order to issue Form-V by Customer, Contractor shall fulfill all Statutory requirements like Insurance Policy, PF Code/PF Account number etc. as per the requirement of BHEL/Customer
16.5.7.	Contractor shall deduct the necessary amount towards Provident Fund and contribute equal amount as per Government of India laws. This amount will be deposited regularly to the provident Fund Commissioner. BHEL/Customer may insist for submission of the account code duly certified by PF Commissioner
16.5.8.	Contractor may also be required to comply with provisions of ESI Act in vogue if applicable and submit evidence to BHEL.
16.5.9.	BHEL / customer may insist for witnessing the regular payment to the labour. They may also like to verify the relevant records for compliance with statutory requirements. Contractor shall enable such facilities to BHEL / Customer.
16.5.10.	Contractor shall deploy only qualified and experienced engineers/ supervisors. They shall have professional approach in executing the work.
16.5.11.	The contractor's supervisory staff shall execute the work in the most professional manner in the stipulated time. Accuracy of work and aesthetic finish are essential part of this contract.
16.5.12.	The supervisory staff employed by the contractor shall ensure proper outturn of work and discipline on the part of the labour put on the job by the contractor. Also, in general they should see that the works are carried out in a safe and proper manner and in coordination with other labour and staff employed directly by BHEL or other contractors of BHEL or BHEL's client.
16.5.13.	It is the responsibility of the contractor to arrange gate pass for all his employees, T&P etc. for entering the project premises. Necessary coordination with customer officials is the responsibility of the contractor. Contractor to follow all the procedures laid down by the customer for making gate passes. Where permitted, by customer / BHEL, to work beyond normal working hours, the contractor shall arrange necessary work permits for working beyond normal working hours.
16.5.14.	The actual deployment of Labour and Engineer / supervision staff shall be so as to satisfy the erection and commissioning targets set by BHEL. If at any time, it is found that the contractor is not in a position to deploy the required engineers / supervisors / workmen due to any reason, BHEL shall have the option to make alternate arrangements and recover the expenses incurred from the dues payable to contractor. The expenditure incurred along with BHEL overheads thereon shall be recovered from the contractor.
16.5.15.	Contractor shall not deploy women labour at night.
16.6.	MATERIAL HANDLING, STORAGE AND PRESERVATION ETC
16.6.1.	MATERIAL HANDLING AND STORAGE
16.6.1.1.	All the equipments/materials furnished under this contract shall be stored in the storage spaces in a manner so that they are easily retrievable. While handling/issuing material in BHEL / customer stores, the contractor shall ensure that the balance / other materials are stacked back immediately. No claim is admissible on this account

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16.6.1.2.	The contractor shall endeavor to store / stack / identify materials properly in their open / close / semi closed / tarpaulins covered storage yard / shed. They should take the delivery of the same, following the procedure indicated by BHEL.
16.6.1.3.	The contractor shall process issue of components, equipment / consumables from storage area to erection agency after getting the approval of BHEL Engineer on standard indent forms.
16.6.1.4.	The contractor shall identify and deploy necessary Engineers / supervisors / workmen for the above work in sufficient number as may be needed by BHEL, for areas covering their scope.
16.6.1.5.	All the equipment shall be handled very carefully to prevent any damage or loss. No untested wire ropes / slings etc. shall be used for unloading / handling. The equipment shall be properly protected to prevent damage either to the equipment or to the floor where they are stored.
16.6.1.6.	Contractor shall ensure that while lifting slings shall be put over the points indicated on the equipment or as indicated in the manufacturer's drawings. Slings / shackles of proper size shall be used for all lifting and rigging purposes. All care shall be taken to safe guard the equipment against any damage. Dragging of piping / valves should be avoided. In case of any damage the cost shall be covered from the contractor.
16.6.1.7.	Approach road conditions within the storage area and from stores / yards to the erection site may not be equipped and ideal for smooth transportation of the equipment. Contractor may have to be adequately prepared to transport the materials under the above circumstances without any extra cost. The contractor may familiar himself with soil conditions at site. Any damage to the materials due to improper lifting practices or failure of ropes/slings used by vendor shall be recovered by BHEL from vendor. Recoveries shall be actual expenses incurred plus 5% overheads.
16.6.1.8.	Void
16.6.1.9.	The contractor shall maintain an accurate and exhaustive record-detailing out the list of all material received by him and keep such record open for the inspection of the engineer at any time.
16.6.1.10.	All the material stored in the open or dusty locations must be covered with suitable weather proof / fire retardant covering material wherever applicable and shall be blocked up on raised level above ground. All covering materials including blocks and sleeper shall be arranged by the contractor at his cost.
16.6.1.11.	If the material belonging to the contractor are stored in area other than those earmarked for his operation the engineer will have the right to get it moved to the area earmarked for the contractor and the cost along with applicable overheads shall be recovered from Contractor. Recoveries shall be actual expenses incurred plus 5% overheads.
16.6.1.12.	The Engineer will direct the contractor about material, the items in his opinion which will require indoor storage, and the contractor shall comply with Engineer's decision.

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16.6.1.13.	It shall be the responsibility of the contractor to keep the work / storage areas in neat, tidy and working conditions. All surplus/unusable packing and other materials shall be removed and deposited at location(s) specified by BHEL within the project premises. If required weighing of the same within the project premises will have to be carried out.
16.6.2.	PRESERVATION OF COMPONENTS
16.6.2.1.	After receipt, plant materials storage shall be subjected to the following protection besides other provisions indicated in these specifications elsewhere.
16.6.2.2.	Items stored outdoors shall be stacked up at least six inches (6") off the ground. Items should not be stored in a low lying area where water logging is a possibility. Contractor should have sufficient numbers of sleepers for the job.
16.6.2.3.	Motors, valves, electrical equipment, control equipment and instruments, and special or precision items requiring special care, etc shall be stored indoors. Motor windings shall be kept dry by use of external heat or space heaters. Any loose items supplied along the motors, electrical equipment like Junction Boxes, Lugs, Cable Glands etc are to be kept under the safe custody of the bidder.
16.6.2.4.	Bearings and other wearing surfaces of plant materials shall be protected against corrosion and kept clean and should be regularly monitored.
16.6.2.5.	Insulation materials shall be stored indoors or otherwise protected against getting wet/ damaged, using suitable measures and should be protected from direct rain.
16.6.2.6.	It shall be the responsibility of the contractor to apply preservatives / touch up paints (primer) on equipment handled, as per preservation manual. It shall be contractor's responsibility to apply required paints (primer), thinners, labour, scaffolding materials, cleaning materials like wire brush, emery sheets, etc., cleaning of surface and provide one coat of preservatives / paints (primer) from time to time as decided by BHEL engineer, the scope of arranging preservatives shall be as per the scope mentioned elsewhere in TCC.
16.6.2.7.	VOID
16.6.2.8.	Any failure on the part of contractor to carry out works according to above clauses will entail BHEL to carry out the job from any other party and recover the cost from contractor.
16.7.	DRAWINGS AND DOCUMENTS
16.7.1.	The contractor shall for the purpose of identification and proper traceability of material, divide the storage space in grids with approach roads for proper mobility of material handling equipments. Each grid shall be assigned an identification code. The same shall be displayed in the storage yard. A layout drawing for each storage yard depicting the grids marked with identification code shall be maintained by the contractor.
16.7.2.	In case of restacking/shifting of material to a different storage place, the contractor has to maintain the records of material shifted with trail of earlier stacking location.

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16.7.3.	The contractor shall maintain a record of preservation activities carried out on daily basis.
16.7.4.	The data furnished in various annexure enclosed with this tender specification are only approximate and for guidance. However, the change in the design and in the quantity may occur as is usual in any such large scale of work. The contractors quoted rates shall be inclusive of the above factor.
16.7.5.	Should any error or ambiguity be discovered in the specification or information the contractor shall forthwith bring the same to the notice of BHEL before commencement of work. BHEL's interpretation in such cases shall be final and binding on the contractor.
16.8.	INSPECTION AND QUALITY
16.8.1.	Inspection, Quality Assurance, Quality Control
16.8.1.1.	A daily log book should be maintained by every supervisor / engineer of contractor on the job in duplicate (one for BHEL and one for contractor) for detailing and incorporating for the material handling activities carried out, including preservation, verification of received material issue of material etc.
16.8.1.2.	Contractor shall provide all the Measuring Monitoring Equipments (MMEs) required for completion of the work satisfactorily. These MMEs shall be of brand, quality and accuracy specified by BHEL Engineer and should have necessary calibration and other certificates as per the requirement of BHEL Engineer. Decision of BHEL Engineer regarding acceptance or otherwise of the measuring instruments / gauges / tools for the work under this specification, is final and binding on the contractor. BHEL may give an indicative list of MMEs required for this work and to be made available by the contractor. The list will be reviewed by BHEL and the contractor shall meet any augmentation needed wherever required.
16.8.1.3.	BHEL, Power Sector Regions (PSNR / PSER / PSWR / PSSR) have already been accredited with ISO 9001 certification and as such this work is subject to various audits to meet ISO 9001 requirements. One particular aspect which needs special mention is about arrangement of calibration of instruments by the contractor. Contractor shall ensure deployment of reliable and calibrated MMEs (Measuring and Monitoring Equipments). The MMEs shall have test / calibration certificates from authorized / Government approved / Accredited agencies traceable to National / International Standards. Re-testing / re-calibration shall also be arranged at regular intervals during the period of use as advised by BHEL Engineer within the contract price. The contractor will also have alternate arrangements for such MMEs so that work does not suffer when the particular equipment / instrument is sent for calibration. Also if any MMEs not found fit for use, BHEL shall have the right to stop the use of such item and instruct the contractor to deploy proper item and recall i.e. repeat the readings taken by that instrument, failing which BHEL may deploy MME and retake the readings at Contractor's cost.
16.8.1.4.	Total Quality is the watchword of the work and Contractor shall strive to achieve the Quality Standards, procedures laid down by BHEL. He shall follow all the instructions as per BHEL drawings and Quality Standards.

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16.8.2.	Stage Inspection By FES / QA Engineers
16.8.2.1.	Apart from day-to-day inspection by BHEL Engineers stationed at Site and Customer's Engineers, inspection of equipments in storage shall also be conducted by teams of Engineers from Field Engineering Services of BHEL's Manufacturing Units, Quality Assurance teams from Field Quality Assurance, Unit/Factory Quality Assurance and Commissioning Engineers from Technical Services etc. Contractor shall arrange all labour, tools and tackles etc. along with proper access for such stage inspections free of cost.
16.8.2.2.	Any modifications suggested by BHEL FES and QA Engineers' team shall be carried out. Claims of contractor, if any, shall be dealt as per contract, and provided such modifications have not arisen for reasons attributable to the contractor.
16.8.3.	Statutory Inspection of Work
16.8.3.1.	<p>Sometimes the materials stacked at storage space and the facilities has to be offered for inspection, to various statutory authorities for compliance with applicable regulations.</p> <p>The statutory inspections, though not limited to, are as under:</p> <ol style="list-style-type: none"> 1) Inspectorate of Steam Boilers and Smoke Nuisance. 2) Electrical Inspector. 3) Factory Inspector, Labour Commissioner, PF Commissioner and other authority connected to this project work. <p>The scope includes providing assistance for inspection visits of statutory authority periodically as per BHEL Engineer's instructions, arranging materials for ground inspection.</p>
16.8.3.2.	The Quality Management System of BHEL, Power Sector Regions (PSNR / PSER / PSWR / PSSR) have already been certified and accredited under ISO 9002 standards in this regard. The basic philosophy of the Quality Management System is to define the organizational responsibility, work as per documented procedures, verify the output with respect to acceptance norms, identify the non-conforming product / procedure and take corrective action for removal of non-conformance specifying the steps for avoiding recurrence of such non-conformities, & maintain the relevant quality records. The non-conformities are to be identified through the conduct of periodical audit of implementation of quality systems at various locations/stages of work. Suppliers / vendors of various products / services contributing in the work are also considered as part of the quality management system. as such the contractor is expected not only to conform to the quality management system of BHEL but also it is desirable that they themselves are accredited under any quality management system standard.
16.8.4.	Field Quality Assurance

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16.8.4.1.	Contractor shall carry out all activities conforming Field Quality Plan (FQP) as per requirement to be finalised at site, and as revised from time to time. Total quality shall be the watchword of the work and contractor shall strive to achieve the quality standards, procedures laid down by BHEL. He shall follow all the instructions as per BHEL drawings and quality standards. Contractor shall provide the services of quality assurance engineer as per the relevant clauses.
16.9.	Health, Safety & Environment Obligations
16.9.1.	OCCUPATIONAL HEALTH, SAFETY & ENVIRONMENT MANAGEMENT/ QUALITY ASSURANCE PROGRAMME: BHEL, Power Sector Regions (PSNR / ER / WR / SR) are each certified for ISO 9001. Quality of work to customer's satisfaction and fulfillment of system requirements are the essence of ISO 9001 certification. BHEL, PS Regions have HSE certification (ISO 14001: 2015 & ISO 45001:2018) and therefore Contractor also shall organize / plan/ perform all their activities to meet with the applicable requirements of these standards.
16.9.2.	HSE (Health, safety & Environment): Contractor will comply with HSE (Health, safety & Environment) requirements of BHEL as per the "HSE Plan for Site Operations by Subcontractor" (Document No. HSEP: 14 Rev02) issued along with tender.
16.10.	RA Bill Payments
16.10.1.	The contractor shall submit his monthly RA bills with all the details required by BHEL on specified date every month covering progress of work in all respects and areas for the previous calendar month prescribed format with clearance from HSE, Quality and HR.
16.10.2.	Mode of payment and measurement of work completed shall be as per relevant clauses of General Conditions of Contract
16.10.3.	Release of payment in each running bill including PVC Bills where ever applicable will be as per stages of progressive pro rata payments.
16.10.4.	The payment for running bills will normally be released within 30 days of submission of running bill complete in all respects with all documents. It is the responsibility of the contractor to make his own arrangements for making timely payments towards labour wages, statutory payments, outstanding dues etc. and other dues in the meanwhile. 60% of RA Bills complete and correct in all respects and certified by BHEL Engineer, shall be paid within 15 days of receipt. Balance payment shall be within 30 days.
16.10.5.	BHEL shall release payment through Electronic Fund Transfer (EFT)/RTGS. In order to implement this system, Contractor to furnish details pertaining to his Bank Accounts where proceeds will be transferred through BHEL's banker, as per prescribed formats: Note: BHEL may also choose to release payment by other alternative modes as applicable

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16.10.6.	Paying Authority shall be the Construction Manager of the Site. Any change in the paying Authority shall be intimated to the Contactor accordingly.
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Chapter-XVII : TECHNICAL SPECIFICATIONS AND DRAWINGS

17.0	Following Technical Specifications shall be integral parts of this tender (attached separately):
17.1	General Plot Plan Drawing No. PE-DG-P96-100-M001 (TENDER STAGE DRAWING FOR BIDDER'S INFORMATION ONLY)
17.2	TYPICAL LAYOUT PLAN FOR OPEN STORE YARD AND CLOSED SHED SHALL BE PROVIDED AFTER THE AWARD OF WORK.
17.3	HSE Plans for Koradi (2x660MW) Project
17.4	IP camera Specification.
17.5	Hire Charges
NOTES:	
1	Above documents have been uploaded separately.