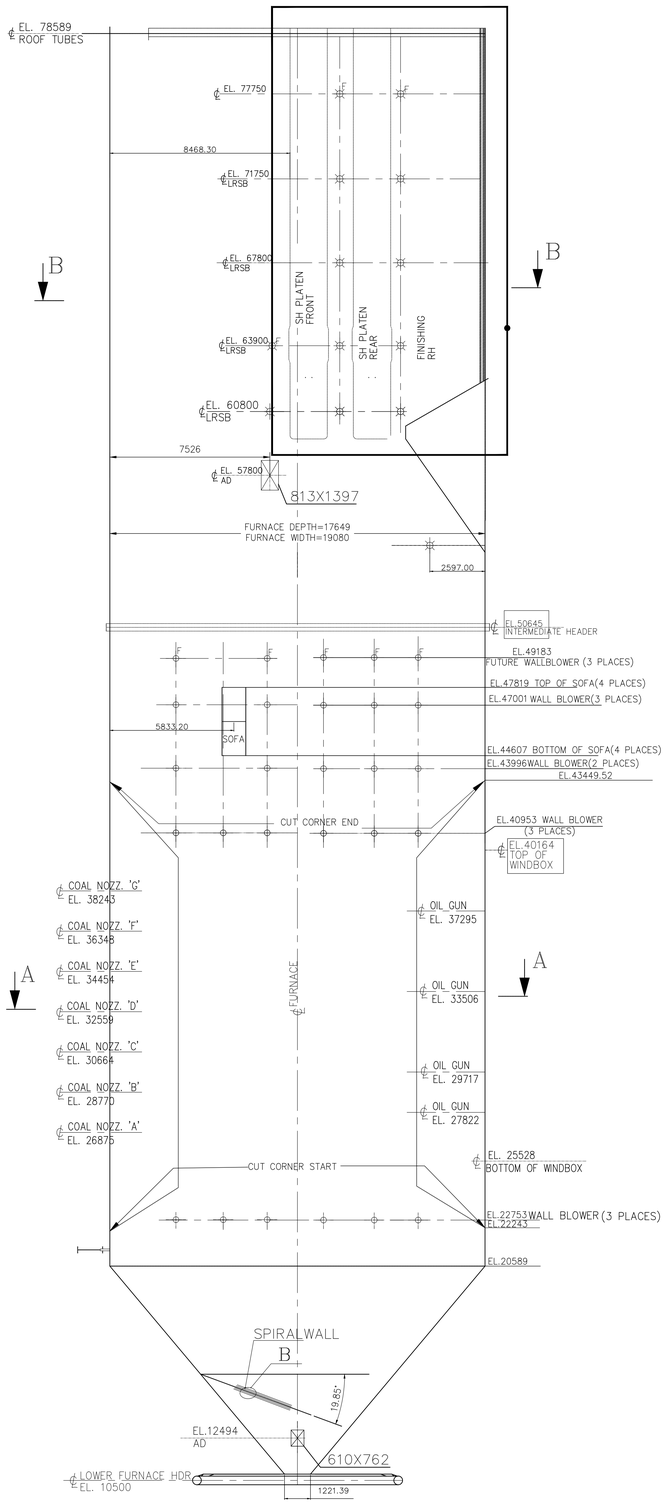
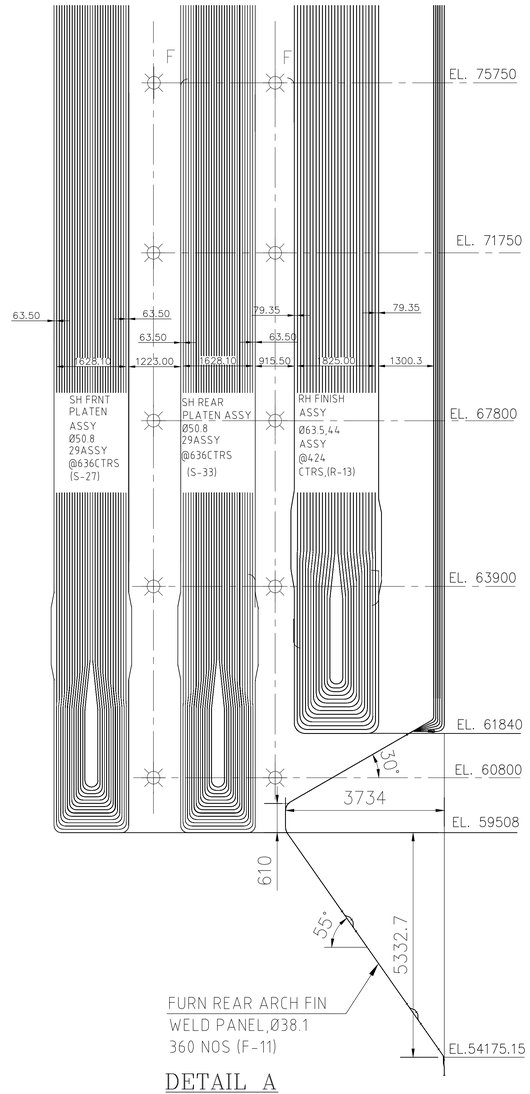
CHECKLIST FOR SUPPLIER			
Sl. No.	**List of documents and confirmations required as per enquiry**	**Supplier to check & verify (provide tick against each point if agreed)**	**Deviation (if any) to be indicated**
01	Quoted for all items specified in the enquiry		***Deviation against each specific point from 1 to 16 (if any) shall be mentioned in the respective row here.***
02	Quantity quoted is in line with enquiry requirements		
03	Signed and submitted Annexure-A		
04	Signed and submitted Annexure-D		
05	PART-I (No Deviation Certificate)		
06	Technical Pre-Qualification Requirement for Quick Erect Scaffold- Aluminium/Aluminium Alloys:		
07	THIRD PARTY NON-DISCLOSURE AGREEMENT		
08	Financial Pre-Qualification Requirement		
09	Specification No. MHS-HEQ-078/Rev05,		
10	Annexure I to specification MHS-HEQ-078/Rev05,		
11	Annexure II to specification MHS-HEQ-078/Rev05		
12	Annexure III (Drq 0-99-501-40337/Rev00)		
13	Certificate regarding local content		
14	BANK GUARANTEE FOR PERFORMANCE SECURITY		
15	Integrity pact		
16	Painting Schedule		

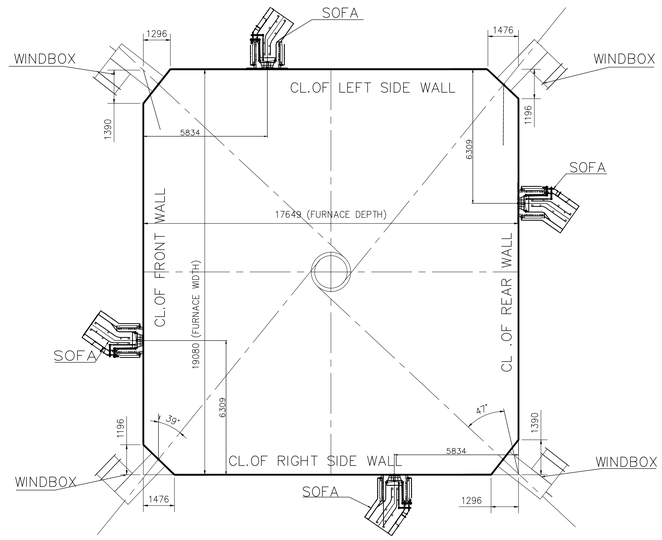
DRAWING NO 0-99-501-40337



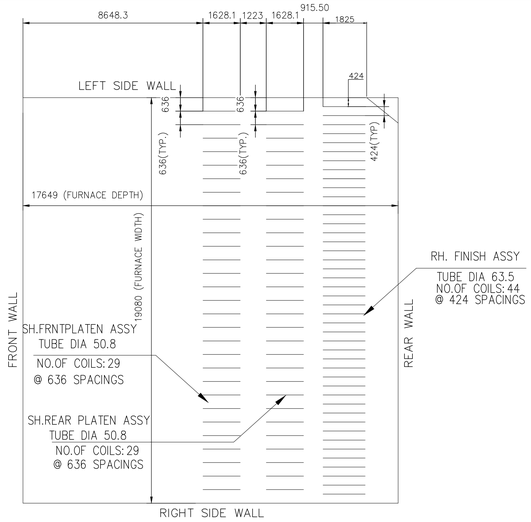
SIDE ELEVATION'
SCALE 1:100



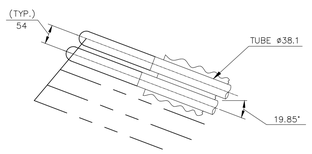
DETAIL A
SCALE 1:50



PLAN VIEW("AA" BURNER LEVEL WITH CUT CORNER
SCALE 1:100



VIEW BB(COIL LEVEL)
SCALE 1:100



DETAIL-B
SCALE 1:30

LEGEND:

- LONG RETRACTABLE SOOT BLOWER (LRSB)
- FUTURE LONG RETRACTABLE SOOT BLOWER
- ACCESS DOOR(AD)
- ELEVATOR LANDING
- WALL BLOWER(WB)
- FUTURE WALL BLOWER(WB)

REF. DRGS.

0-00-027-34087 PPA SEC.SIDE ELEVATION UPPER FURNACE
0-00-027-34089 PPA SEC.SIDE ELEVATION LOWER FURNACE
0-00-022-76830 GEN. ARRGT. OF BOILER SEC. SIDE ELEVATION - SECTION E E
0-00-020-76846 LOCATION OF FUTURE OPENINGS&BUCKSTAYS

NOTES

1 SET OF QUICK ERECT SCAFFOLDING COMMON FOR TWO UNITS IS SUPPLIED.

REV	DATE	ALTERED :
01		CHD & APPD :
ZONE		

CUSTOMER NO. 1723, 1724

CAUTION: THE INFORMATION ON THIS DOCUMENT IS THE PROPERTY OF BHARAT HEAVY ELECTRICALS LIMITED. IT MUST NOT BE USED DIRECTLY OR INDIRECTLY IN ANY WAY DETRIMENTAL TO THE INTEREST OF THE COMPANY

PROJECT	2 X 660MW ENNORE SEZ SUPERCRITICAL TPP AT ASH DYKE OF NCTPS, CHENNAI
OWNER	TAMILNADU GENERATION & DISTRIBUTION CORPORATION LTD.
OWNER'S CONSULTANT	DESEIN PRIVATE LIMITED DESIEN HOUSE, NEW DELHI
EPC CONTRACTOR	BHARAT HEAVY ELECTRICALS LIMITED NEW DELHI UNIT : BOILER PLANT UNIT; TIRUCHIRAPALLI - INDIA-620 014 EQUIPMENT: STEAM GENERATOR

TITLE: FURNACE ARRANGEMENT FOR QUICK ERECTING SCAFFOLDING

	NAME	SIGN.	DATE
DRAWN	SAURABH KR SINGH		22.06.2018
CHECKED	NOORUL FAZIL M		22.06.2018
APPROVED	MCHS GANGADHAR		22.06.2018

ALL DIMENSIONS ARE IN MILLIMETRES

PROJECTION

SCALE 1:100 1:50 1:30

BHEL DRAWING NO. 0-99-501-40337

REV 00

	Annexure-I to Specification No. **MHS-HEQ-078/Rev.05**

1	**Name of Project**	**: ENNORE 2x660MW**
2	**Customer No.**	**: 1723-1724**
3	**Quantity**	**: 1 Set (Common for two units)**
4	**Material of construction**	**: Aluminium /Aluminium Alloy**
5	**Reference Drawing No.**	**: 0-99-501-40337/ 00** **(Furnace arrangement for Quick Erect Scaffold)**
6	**Man Hole (Access Door)** **Opening Size in mm**	**: 610x762mm**
7	**Special Contract**	**: 1.The scaffolding system shall be made of Alu Aluminium/Aluminium Alloy. Man days required for erection shall not exceed 4 (four)days considering workforce deployed for 24 hrs per day(3 shifts a day).Dismantling shall be completed 2 (two) considering workforce deployed for 24 hours 3 shifts in a day.** **2. The locking arrangement shall not call for any Welding.**

	Name	Signature	Date
Prepared	Saurabh kr. Singh	-sd-	11.05.2023
Checked	Saurabh Kr. Singh	-sd-	11.05.2023
Approved	Srinivas Arugula	-sd-	11.05.2023

Annexure-II to Specification No.:MHS-HEQ-078/Rev.05

VENDOR'S CHECK LIST

This check list is to be filled up by the vendor and submitted along with the offer. This shall form part of ordering specification and shall be approved by the purchaser incorporating all the comments if any. Vendor to completely fill up the column under "vendor's compliance/confirmation/comments". Non applicability shall be clearly spelt out. Offer with incomplete data sheet/ check list is liable for rejection.					
S.No.	**Description**	**Spec.Clause No.**	**As per specification**	**Compliance / confirmation / particulars**(to be filled up by vendor)	**Remarks**
1	Name of the equipment	1.0	Quick Erect scaffolding system		
2	Type of sytem offered	.....	Vendor to specify		
3	Model of the system offered	.....	Vendor to specify		
4	Type of jointing arrangement Provided	3.1	Vendor to specify		
5	Standards / Codes followed	3.2	Vendor to specify		
6	Materials of construction:	3.3.1	Aluminium / Aluminium Alloy		
6.1	Tubes				
6.2	Coupler / Jointing				
6.3	Fastners				
6.4	Stair ways				
6.5	Decking				
6.6	Others				
6.7	Others				
6.8	Others				
7	All components shall have appropriate colour code	3.3.3	Vendor to confirm		
8.0	Quick erect / Quick dismantle	3.7			
8.1			Total Man-hours required for erecting the complete system		
8.2			No. of manpower required for erection:		
8.2.1			Skilled		
8.2.2			Unskilled		
8.3			Total Man-hours required for dismantling the complete system		
8.4			No. of manpower required for dismantling:		
8.4.1			Skilled		

Vendor's name
Signature & Date
Seal

VENDOR'S CHECK LIST

S.No.	Description	Spec.Clause No.	As per specification	Compliance / confirmation / particulars(to be filled up by vendor)	Remarks
8.4.2			Unskilled		
8.5			User certificate for the time taken for assembly and dismantling of a similar system shall be furnished along with the offer.		
8.6	Vendor's confirmation to demonstrate the mandays & man power requirement during the actual installation of QES.		Vendor to confirm		
9	Furnace configuration	3.8	The offered system shall meet the shape and configuration as shown in BHEL drawing.(Refer Annexure-I). Vendor's compliance.		
10	Provision to introduce all materials thro Access door opening	3.10	Opening size given in annexure -I		
11	Spares	3.11		——	
11.1	Initial spares		Shall be included in the base offer		
11.2	List of initial spares		Vendor to furnish the list of intial spares offered		
11.3	Long term spares		To be quoted separately		
12	Safety Accessories	4.4	Shall form part of the offer. Vendor to furnish the list of accessories supplied.		
13	Factor of safety	4.5	4 times the Intended load		
13.1	Maximum intended load of 6 tons	4.5	Vendor to confirm for having taken this into the design		
13.2	Permissible load on each floor	4.5 to 4.7	Vendor to specify. Shall not be less than 150 kg/sq.m		
14	Load transfer	5.0			
14.1	No.of support points		Vendor to specify		

Vendor's name
Signature & Date
Seal

VENDOR'S CHECK LIST

S.No.	Description	Spec.Clause No.	As per specification	Compliance / confirmation / particulars(to be filled up by vendor)	Remarks
14.2	Location of support points		Vendor to furnish		
14.3	Load per vertical post at support point		Vendor to specify		
14.4	Load tranfer points	5.0	To be marked up in the drawing		
14.5	Type of support at the furnace hopper		Explain with a drawing. Is the support calling for any welding? If yes, it is accommodated only at the fins and not on the water wall tubes.		
14.6	Maximum safe working load that can be loaded onto the platform		Vendor to specify		
15	Scaffolding System	6.0			
15.1	Staircase width	6.2	Min. 500mm		
15.2	Staircase inclination	6.2	Not more than 55 deg.		
15.3	Provision of upper / mid guardrail	6.3	Vendor to confirm		
15.4	Access to panel and platen superheater and upper rear arch areas	6.4	Vendor to confirm		
15.5	Hand rails height	6.10.1	900 - 1000mm		
16	Floors	6.11			
16.1	Provision of floor	6.11.1	Floors at specific Elevations- Peripheral floors & full floors		
16.2	Elevation details	6.11.1	Vendor to indicate in the drawing. Spacing between two successive floors shall not exceed 2.5 m shall not exceed 3.5m		
		6.11.3	Full floor platforms shall be provided at just below the upper arch and below the access door opening in the furnace hopper		
16.3	Provision of dismountable midrails	6.11.4	Vendor's compliance		
16.4	Height of Toe boards	6.11.5	Min. 150 mm		

Vendor's name
Signature & Date
Seal

VENDOR'S CHECK LIST

S.No.	Description	Spec.Clause No.	As per specification	Compliance / confirmation / particulars(to be filled up by vendor)	Remarks
16.5	Materials of construction of floors	6.11.6	Vendor to specify		
16.6	Width of peripheral floor	6.11.7	Min. 600 mm		
16.7	Arrangement drawing of floor	6.11.8	Vendor to enclose		
16.8	No.of floors offered	6.11.9	Vendor to specify		
16.9	Access to all parts	6.11.9	Vendor to confirm		
17	List of Tools & Tackles	6.12	List to be attached with the offer. If vendor states that special tools are required for the offered system, then the same has to be listed in detail		
18	Storage of scaffold		Storage volume required and the suggested storage layout		
19	Design justification document	6.15	Vendor to submit		
20	Fasteners with Metric threads	7.3	Vendor to confirm		
21	Applicable colour code	7.4	Vendor to specify		
22	Methodology followed for marking up identification number	7.5	Vendor to specify		
23	Training of purchaser's engineers	7.6.2	Vendor's compliance		
24	Drawing & documents	7.7	Vendor's compliance		
25	O & M manual	7.8	Vendor to furnish a typical O&M manual of the offered system. Vendor's compliance		
26	Quality plan	8.2	Vendor's compliance		
26.1	Site checks / tests	8.4	Field quality plan - vendor's compliance		
26.2	Inspection	9.0	Vendor's compliance		
27	Packaging and Transportation	10.3	Vendor's compliance		
28	Painting	Annexure-I	Vendor's compliance		
29	Guarantee / Warranty	11.0	Vendor's compliance		
30	Deviations	12.0	Shall be spelt out in the offer. If there are no deviations, the same shall be confirmed by the vendor		

Vendor's name
Signature & Date
Seal

Annexure-II to Specification No.:MHS-HEQ-078/Rev.05

VENDOR'S CHECK LIST

S.No.	Description	Spec.Clause No.	As per specification	**Compliance / confirmation / particulars**(to be filled up by vendor)	Remarks
31	Exclusions	13.0	Shall be spelt out in the offer. If there are no deviations, the same shall be confirmed by the vendor		
32	Documents along with offer	14.1	Vendor to furnish all the documents along with the offer		
32.1	Product literature / catalogue				
32.2	Drawing --- covering:		Specify vendor drawing No.		
32.2.1	General Arrangement		Vendor's compliance		
32.2.2	Sectional arrangement		Vendor's compliance		
32.2.3	Plan view		Vendor's compliance		
32.2.4	Elevation		Vendor's compliance		
32.2.5	Illustrated sketch of coupler / jointing arrangement		Vendor's compliance		
32.2.6	Marking up of load transfer points		Vendor's compliance		
32.2.7	Elevation details of all floor levels		Vendor's compliance		
32.2.8	Weight details		Vendor's compliance		
32.2.9	BOQ covering all components		Vendor's compliance		
33	Documents after placement of Purchase Order	14.2	Vendor's confirmation to furnish all the documents enlisted in Cl.14.2 of specification.		

Vendor's name
Signature & Date
Seal

BHARAT HEAVY ELECTRICALS LIMITED
TIRUCHIRAPPALLI-620 014
Fuel Systems/PE(FB)

Title Sheet

Quick Erect Scaffolding System

(Material: Aluminium / Aluminium alloy)

Specification Number: MHS-HEQ-078 Revision No. : 05

05	12.05.2023	Clauses Added:3.4,4.9 & clause 4.2 updated.	SKS/SA
04	31.12.2018	Clauses revised:4.4 & 4.6 updated	SKS/NFM
03	30-05-2018	Revisit on specification. Clauses revised: 3.2,3.7, 3.8,3.9,4.0,5.0,6.2,6.5,6.10, 6.11,7.1, 7.6, 7.7, 7.8, 11.0, 14.1	NFM/MCHS
02	20-02-2016	Clause 3.3.1,3.7,6.2,6.10.5,6.14,14.1updated.	Arul / MTP
01	**20-10-2016**	Staircase width & angle updated. Peripheral platform width updated. Clause 3.7, 4.4, 6.2, 6.10, 6.11, 6.14, 7.6 & 14.1 modified.	Arul / MTP
Revision No.	**Revision Date**	**Revision statement**	**Checked& Approved**

	Name	**Signature**	**Date**
Prepared	D.V.Kumar	-Sd-	06.11.2015
Checked	D.V.Kumar	-Sd-	06.11.2015
Reviewed	M.Thandapani	-Sd-	07.11.2015
Approved	M.Thandapani	-Sd-	07.11.2015

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Annexure – I ----- Specific Project Requirements

Annexure – II ----- Check list (To be filled in by the Vendor)

Annexure – III ----- BHEL Drawing (Furnace Arrangement for Quick Erect Scaffold)

1.0 Intent:

The quick erect scaffolding system is intended for carrying out maintenance work inside a boiler furnace, which comprises water walls, Burners, SOFA, Soot blowers, Super heaters, Re-heaters etc. during shut down period. As the name implies, the scaffolding shall be safely erected and dismantled in the shortest possible time with less manpower and with minimum supervision.

The scaffolding system shall be sufficient enough to cover all the water wall areas, in a single set up, including inclined area of the boiler above rear wall and furnace bottom (Bottom hopper).

The system shall be preferably of modular and interchangeable construction and easily and quickly assembled inside the furnace.

2.0 Scope:

This specification covers design, manufacture, inspection and supply of quick erect scaffolding system. The specification is for ensuring a safe and trouble free quick erect scaffolding system used during shutdowns and overhauls, for inspection and maintenance of furnace internals of steam generator like Water walls, Burners, SOFA, Super heaters etc.,

3.0 Requirements of the system

3.1 Quick erect scaffolding system shall be of fast erecting with suitable connecting/coupling arrangement.

3.2 Codes & standards

All equipment parts, systems and works covered under this specification shall comply with all currently applicable statutory regulations and safety codes of the Republic of India as well as of the Company/Country where they will be installed. The offered system shall conform to national / international standards and the same are listed below:

BS EN 12811-1	.....	Temporary works equipment. Scaffolds. Performance requirements and general design
BS 1139-1.2	.....…	Metal Scaffolding – Specification for Aluminium tubes
ANSI/ASSE A10.8	.....	American national standard construction & demolition Operations – Scaffold Safety Requirements
EN 1999-1-1	…….	Eurocode 9: Design of aluminium structures

3.3 Material of construction

3.3.1 The material of construction of various components including floors shall be Aluminium / Aluminium alloy of proven design for Scaffolding application. It is suggested that the selected

material shall also be light in weight to hasten the erection of scaffold in the shortest possible time. For general requirements of materials, refer to cl.8.1 of this specification.

3.3.2 All materials used for construction of different components shall individually conform to latest revisions of National / International Standards and it shall be specified in the offer.

3.3.3 All the components of the scaffolding system shall have ***appropriate colour code*** for easy identification. The colour code shall be specified in the offer and will have Purchaser's approval.

3.4 Locking arrangement shall be of Aluminium/Galvanized Steel with proven design and should have been supplied for earlier similar application.

3.5 The quick erect scaffolding system shall provide flexibility in erection of vertical posts & horizontal / diagonal connecting members.

3.6 Vertical posts & horizontal / diagonal connecting members shall have equal spacing for easy erection. Connections of the above shall be with suitable quick connect hardware arrangement. Vertical posts / horizontal / diagonal members shall have equal and standard lengths for easy interchangeability & modular assembly and disassembly.

3.7 The vertical posts and horizontal members shall be so designed to fill the space of furnace configuration.

3.8 Vendor shall offer a system which is erectable and can be dismantled at the quickest possible time. Vendor shall indicate, in the offer, the man-hours required and also manpower (skilled and unskilled) needed to carry out erection and dismantling of the system. Vendor shall also provide the total erection /assembly time of the full scaffold. **The total time required for erection shall not exceed 4 days (96 hours) and dismantling 2 days (48 hours), considering the work force deployed for 24 hrs in 3 shifts a day.** In support of the above, vendor shall furnish erection & dismantling schedule.

3.9 Quick erect scaffolding system shall meet the shape & configuration of the Furnace arrangement to have easy access to all parts of furnace including rear water wall arch. (Ref. Annexure-III). The corner design of the scaffolding shall conform to the cut corner requirement of the boiler (in burner region) and wherever there are no cut corners, the scaffolding should meet the shape & configuration as shown in Annexure-III.

3.10 The requirement of the system, as spelt above, is minimal and indicative only. Vendor shall offer the most appropriate system for the intended specification and duty condition. The offered system shall be clearly illustrated with sketches and elaborate details which shall be subject to purchaser's review and acceptance.

3.11 All the required materials shall be introduced into the furnace for assembly through the access door opening (Refer Annexure-I) and or furnace bottom opening and all components shall be sized accordingly.

3.12 Vendor shall include the required number of Initial Spares in the base offer itself. *Initial spares mean the spares required during first erection/commissioning of the system to replace the items that are either damaged or lost during transit/storage. Hence, vendor shall quote for the initial spares along with the base offer. The list of initial spares shall be clearly furnished in the offer.*

The spares required for long term usage shall be quoted separately.

4.0 Safety and Design Requirements

4.1 The general requirements for scaffold should be as per ANSI A10.8-2011/Section 4.

4.2 The locking arrangement for the scaffolding shall not call for any welding during erection.

4.3 Quick erect scaffolding system shall be arranged in such a manner to remove /erect individually without affecting other boiler components.

4.4 Safety accessories like safety belt etc. shall also form part of the offer.

4.5 Scaffolds, as per ANSI A10.8-2011 / Section 4.8, shall be capable of supporting, without failure, their own weight and at-least **four** times the maximum **intended load** of **6000 Kg**.

4.6 Platforms & scaffold decks shall be designed to withstand a **Uniformly distributed load**, not less than **150 kg/sq. m**.

4.7 Intended load and uniformly distributed load are not cumulative but the requirement which is most restrictive shall govern the design of scaffold deck / platform. In line with this, Scaffolding, which includes work platforms, bracings, and supporting members, shall be designed for a minimum safety factor of ‘4’ which is applied to the intended load.

4.8 Vendor shall indicate the overall permissible load and Load per square metre in their G.A drawing at any given instant on the scaffolding system offered.

4.9 Locking arrangement shall be of proven design and should have supplied and used for similar application.

5.0 Load Transfer

Vendor shall clearly spell out in his offer the load that is likely to be transferred to the furnace walls. This load shall include the dead weight of the scaffolding including the platforms and the safe working load that can be loaded on to the platform. With respect to the Load transfer, the following details shall be furnished in the offer.

- The no of support points
- The location of support points
- The load per vertical post at the support points
- The load transfer points shall be clearly marked up in the drawing

- No load shall be transferred onto the Windbox / burner.
- Vendor shall indicate the type of supports proposed with an aid of sketch/drawing. (load transfer through all supports shall be at the fins zone only and not on the tubes)

6.0 Scaffolding system:

The Scaffolding system shall be provided with:

6.1 Close access to inspection / maintenance of boiler tubes / water wall, burner, SOFA & other components including boiler furnace roof.

6.2 Stair case with a width of minimum 500 mm and not more than 55^0 inclinations. Staircase shall be provided with hand rails. However, for stairs within the braced towers, when flights of stairs are interrupted by platforms at less than or equal to 2.1 m intervals, the handrails may be omitted if due care is taken in design for safety of personnel. The number of staircases in a particular scaffold level shall be such that - quick access to all corners of subsequent work platforms is available from any point of that scaffold level.

6.3 System shall have upper / mid guard rail without any special components.

6.4 Access to Panel and Platen super heater and rear wall upper arch portion to be envisaged.

6.5 The scaffolding shall also have access to horizontal pass up to the level where transverse tube pitching in the direction of gas flow path is equal to and greater than 600 mm.

6.6 Arrangement for stable floor.

6.7 Suitable arrangement for supporting at furnace bottom without additional attachment with boiler tubes.

6.8 In total, the assembly shall have amongst other things – vertical posts, horizontal members, vertical /horizontal / diagonal bracings, trusses and other fastening arrangements etc.

6.10 Handrails and guardrails

6.10.1 Handrails / guardrails shall be with a height between 900 mm to 1000mm.

6.10.2 Handrails / guardrails and components shall be of sufficient strength to withstand a 90kg force applied at any point, in any outward or downward direction, except upwards, without failure.

6.10.3 Handrails / guardrails system shall not be required on the furnace wall side when the space between platform/scaffold and furnace walls is less than 200 mm. However, toe boards as per 6.11.5 shall be envisaged everywhere to prevent accidental rolling down of tools.

6.11 Floors

6.11.1 Floors are to be provided peripherally at all elevations except at the levels specified in clause 6.11.3 where full planking is required. The elevation levels shall be determined by the vendor. However, the space between two floors shall be preferably 2.5 m below the top of wind box and shall not exceed 3.5 m there after (above wind box). Nowhere the space between the working floors be less than 1.8 m, so as to provide comfortable headroom.

6.11.2 However, to provide access to all the areas within the floor space, suitable ladders shall be provided which can be safely fixed on to the floors. Minimum 6 nos. of such ladders shall be provided.

6.11.3 Full platforms/floors (not just peripheral) shall be provided at just below the access door near upper rear arch and below the access door opening in the furnace hopper. The full floor elevation details shall be furnished by the vendor.

6.11.4 Floors shall be provided with guard rails, mid rails and toe boards installed on all open sides and ends. Mid-rails shall be of dismountable type. All rails and posts shall be suitable for easy assembly & disassembly.

6.11.5 Toe boards/guards shall extend to a minimum of 150mm above the working surface.

6.11.6 The material of construction of the flooring shall be of Aluminium / Aluminium Alloy as indicated in clause 3.3.1.

6.11.7 The width of the floor and gap between the furnace wall and floor shall be clearly specified by the vendor and the same shall be clearly shown in the drawing. Floor width (peripheral) shall be minimum 600mm.

6.11.8 The number of floors offered with “elevation” details shall be clearly mentioned in the drawing.

6.11.9 The floor elevations and no. of floors shall be decided in such a way that access is available to all parts (especially burner area) of the water walls. (For burner level elevations refer to Annexure-III).

6.12 Tools and tackles

6.12.1 The Vendor shall supply with the main equipment one complete set of special tools and tackles required for erection, assembly, dismantling and proper maintenance of the equipment and system. These special tools will also include special material handling equipment, jigs and fixtures if applicable. The list of such tools and tackles shall be submitted by the vendor along with the offer.

6.12.2 The price of each tool/tackle shall be deemed to have been included in the total bid price. These tools and tackles shall be packed and sent to site. All the tools and tackles shall be of reputed make acceptable to the Purchaser.

6.13 Any other items though not specifically mentioned in this specification but needed to complete the equipment and system [unless specifically mentioned under exclusions shall form part of the offer].

6.14 Vendor shall specify the storage space requirement of the system components and shall furnish suggested storage layout with special instructions, if any, for proper storage of the material.

6.15 Vendor may also submit necessary documents for justifying the design aspects of the scaffold offered both for stability and safety.

7.0 General requirements

7.1 All materials, components used in the design, construction and installation of scaffolds shall meet the requirements of its specified application in accordance with good engineering practice. All material shall be supplied as per vendor's bill of quantity document and if any shortage of material found later or during installation of the scaffolding system at site, Vendor is responsible for the same and shall agree to supply the additional material at free of cost.

7.2 The material of construction and its duty class shall be clearly spelt out in the offer and the same shall conform to specified National / International Standards. All materials used for the construction of the equipment shall be new and shall be in accordance with the requirements of this specification. Materials utilised for various components shall be those which have established themselves for use in such applications for at least a period in excess of 2 years.

7.3 All fasteners used, if applicable, shall be of Metric threads only. (No British / American threads in the inch system is permitted)

7.4 Vendor shall follow International colour Code wherever applicable for various components, assembly and sub-assembly for easy identification of components of the system.

7.5 All assemblies /sub-assemblies and individual components shall bear proper identification numbers. The methodology followed shall be clearly spelt out in the base offer.

7.6 Supervision & Training:

7.6.1 The Vendor shall extend all possible assistance and co-operation to the purchaser regarding the development of expertise in the area of assembly, disassembly, identification, storage & retrieval and safety aspects of the system offered.

7.6.2 Vendor shall also impart the necessary training - training of personnel for the required days at the vendor's engineering/manufacturing facility - training at the job site for the required period by the vendor's representative.

7.6.3 Vendor shall undertake guarantee to demonstrate clause **3.7** (manpower & man days) during the installation (both erection and dismantling) of scaffold in any one of the shutdown

period as and when demanded by the end user within 2 years after commissioning of the boilers or 48 months after completion of supply.

7.6.4 The cost applicable for clauses 7.6.2 & 7.6.3 shall be indicated separately in the offer as supervision and training charges. The above charges shall be paid only after site/ end-user certification on installation / dismantling as per clause 3.7 and training as described above.

7.7 Drawing and Documents:

7.7.1 All documents/text information shall be in MSWord 2000 or above version.

7.7.2 All drawings shall be made in AutoCAD- Release 2016 or above version.

7.7.3 All vendor documents & BHEL filled in datasheets that form the part of offer shall be duly filled, signed with vendor seal before submission. However, care should be taken to ensure legibility.

7.7.4 The vendor drawings shall include – scaffold general arrangement inside boiler, floor elevations with floor numbers, space between floors, plan view for each floor, access door elevation and size, space between furnace wall & floor end.

7.7.5 All drawings submitted by the Vendor including those submitted at the time of bid shall be in sufficient detail indicating the type, size, arrangement, weight of each component for packing and shipment, the external connection, fixing arrangement required, the dimensions required for installation and interconnections with other equipment and materials, clearance and spaces required between various portions of equipment and any other information specifically requested in the drawing schedules.

7.7.6 Each drawing submitted by the Vendor (including those of sub-vendors) shall bear a title block at the right hand bottom corner with clear mention of the name of the Purchaser, the system designation, the specifications title, the specification number, the name of the Project, drawing number and revisions. If standard catalogue pages are submitted the applicable items shall be indicated therein. All titles, notes, markings and writings on the drawing shall be in English. All the dimensions should be in metric units. If standard BHEL title block is furnished, the same shall be incorporated in vendor’s drawings.

7.7.7 The Vendor shall also furnish a "Master Drawing List" which shall be a comprehensive list of all drawings/documents/calculations envisaged to be furnished by him during the detailed engineering to the Purchaser. Such list should clearly indicate the purpose of submission of these drawings i.e., "FOR APPROVAL" or "FOR INFORMATION ONLY". Similarly, all the drawings/documents submitted by the Vendor during detailed engineering stage shall be stamped "FOR APPROVAL" or "FOR INFORMATION" prior to submission.

7.7.8 The furnishing of detailed engineering data and drawings by the Vendor shall be in accordance with the time schedule for the project. The review of these documents / data / drawings by the Purchaser will cover only general conformance of the

data/drawings/documents to the specifications and contract, interfaces with the equipment provided by others. The review by the Purchaser should not be construed to be a thorough review of all dimensions, quantities and details of the equipment, materials, any devices or items indicated or the accuracy of the information submitted. The review and/or approval by the Purchaser shall not relieve the Vendor of any of his responsibilities and liabilities under this contract.

7.7.9 After the approval of the drawings, further work by the vendor shall be in strict accordance with these approved drawings and no deviation shall be permitted without the written approval of the purchaser.

7.7.10 The Vendor shall submit adequate points of drawing/data/document for Purchaser's review and or approval. When changes are required, drawings shall be resubmitted promptly, with revisions clearly marked, for final review. Any delays arising out of the failure of the Vendor to submit/rectify and resubmit in time shall not be accepted as a reason for delay in the contract schedule.

7.8 Operation & Maintenance (O & M) Manual

Typical O&M manual for the type of system offered shall be submitted along with the offer. Manuals generally shall contain the following:

- Brief description
- Assembly drawings with part list, dimensional drawings and other applicable drawings.
- Manuals should pertain only to the type or model supplied for this contract.
- Drawing and catalogues.
- Sequence of erection.
- Erection instructions.
- Critical checks and permissible deviation/tolerances.
- List of tool, tackles.
- Bill of Materials.
- Procedure for erection and dismantling.
- Procedure/checklist for commissioning of the system.
- Procedure for initial checking after erection.
- Maximum permissible load and load per square metre at any given instant on the scaffolding system.

7.8.1 Format of manuals

a) Manuals should be both in printed form and in electronic media with a text font size of 12.
b) The size of manuals should be in correct A4 size with drawings in either A4 or A3 size. Large size drawings (greater than A3 size) should be reduced to A3 size and inserted.
c) Drawings shall be of printed or laser printed only.
d) Spiral or comb bound copies should be totally avoided.
e) If manuals are supplied in folders, the folder shall have 3 hole punching system.
f) No of copies of manuals: 3 Sets + 3 CD –ROMS
g) O & M manuals, should be submitted to BHEL / Tiruchirappalli prior to despatch of the equipment.

8.0 Quality

8.1 General requirements

8.1.1 All materials used for equipment construction including plates, pipes, forgings, fittings etc., shall be of tested quality as per relevant codes/standards. All material shall be chosen from the fresh lots and shall be free from defects like scales, seam, lamination, pitting etc., Detail of results of the tests conducted to determine the mechanical properties, chemical analysis and the details of heat treatment procedure shall be recorded on certificates. Tests shall be carried out as per applicable material standards and or agreed details.

8.1.2 All plates of thickness more than 21mm shall be ultrasonically tested.

8.1.3 All bar-stock forgings above 21mm diameter shall be ultrasonically tested.

8.1.4 All codes standards or specifications with latest editions shall be referred.

8.2 Quality plan

Vendor shall submit along with the offer the quality plan for Purchase's review / comments / approval to ensure that the equipment and services, under the scope of contract whether manufactured or performed, within the Vendor's works or at his sub-vendor's premises or at the Purchaser's site or at any other place of work are in accordance with the specifications, the Vendor shall adopt suitable quality assurance programme to control such activities at all points, as necessary. Such programmes shall be outlined by the Vendor and shall be finally accepted by the Purchaser/authorised representative after discussions before the award of the contract. The offer which is not complying with this requirement will not be considered for evaluation.

8.3 Quality assurance- general requirements

8.3.1 All materials, components and equipment covered under this specification shall be procured, manufactured, erected, commissioned and tested at all the stages, as per a comprehensive Quality Assurance Programme which shall be submitted along with the offer. It is the vendor's responsibility to draw up and implement such programme duly approved by

the Purchaser. The detailed Quality Plans for manufacturing should be drawn up by the Vendor and will be submitted to Purchaser for approval. Schedule of finalisation of such quality plans will be finalised before award of contract.

8.3.2 Manufacturing Quality Plan will detail out for all the components and equipment, various tests/inspection, to be carried out as per the requirements of this specification and standards mentioned therein and quality practices and procedures followed by the Vendor, the relevant reference documents and standards, acceptance norms, inspection documents raised, etc. during all stages of materials procurement, manufacture, assembly and final testing.

8.3.3 The Vendor shall also furnish copies of the reference documents/plant standards/acceptance norms/tests and inspection procedure, etc., as referred in Quality Plans along with Quality Plans. These Quality Plans and reference documents/standards, etc. will be subject to Purchaser's approval without which manufacture shall not proceed.

8.3.4 These approved documents shall form a part of the contract. In these approved Quality Plans, Purchaser shall identify customer hold points (CHP), i.e., test/checks which shall be carried out in presence of the Purchaser's engineer or his authorised representative and beyond which the work will not proceed without consent of Purchaser/Authorised representative in writing. All deviations to this specification, approved quality plans and applicable standards must be documented and referred to Purchaser along with technical justification for approval and dispositioning.

8.3.5 No material shall be despatched from the manufacturer's works before the same is accepted subsequent to pre-despatch final inspection including verification of records of all previous tests/inspections by Purchaser's engineer / Authorised representative.

8.4 Site checks/tests

The Vendor shall prepare and submit detailed field quality plans in the format setting out the quality practice and procedures to be adopted for assuring quality for each equipment of material at this specification from the receipt of material at site, during storage & erection. These procedures shall necessarily include all checks/tests conducted at site for preservation, assembly, alignment, positioning of the equipment etc. The Vendor shall also furnish detailed quality procedure proposed by him for storage & preservation to the Purchaser.

9.0 Inspection

9.1 The complete System has to be offered for inspection by Purchaser / end-user and the vendor shall give 30 days advance notice for arranging the inspection after the system is fully ready. After inspection the equipment can be despatched only after obtaining the MDCC (Material Despatch Clearance Certificate). No material shall be despatched without MDCC.

9.2 The word " inspector" shall mean the Purchaser and / or his authorised representative and or an outside inspection agency acting on behalf of the Purchaser to inspect and examine the materials and workmanship of the works during its manufacture or erection.

9.3 The Purchaser or his duly authorised representative and / or an outside inspection agency acting on behalf of the Purchaser shall inspect the materials and workmanship of the works during its manufacture or erection and its part of the works, if any, being manufactured or assembled at other premises or works. In case of inspection at other premises/ works, the Vendor shall obtain from the sub- vendor permission to inspect as if the works were manufactured or assembled at the Vendor's own premises or works.

9.4 The Vendor shall give the Purchaser / inspector fifteen (15) days written notice of any material being ready for testing. Such tests shall be to the Vendor's account except for the expenses of the inspectors. The Inspector, unless the witnessing of the tests is virtually waived, will attend such tests within fifteen (15) days of the date on which the equipment is noticed as being ready for test/inspection, failing which the vendor may proceed with test which shall be deemed to have been made in the inspector's presence and he shall forthwith forward to the inspector duly certified test reports in two (2) copies.

9.5 Scaffolds shall be inspected and tested as per approved quality plan. The certificates and documents generated during inspection of above shall be furnished.

9.6 The Inspector shall within fifteen (15) days from the date of inspection as defined herein give notice in writing to the Vendor of any objection to any drawings and / or any equipment and workmanship which is in his opinion not in accordance with the contract. The Vendor shall give due consideration to such objections and shall either carry out the necessary modifications as called for by the Purchaser/Inspector or inform in writing to the Purchaser / inspector giving reasons therein that no modifications are necessary to comply with the contract.

9.7 The inspection by Inspector and issue of inspection certificate thereon shall in no way limit the liabilities and responsibilities of the vendor in respect of the agreed quality assurance programme forming a part of the contract.

9.8 All inspection measuring and test equipment used by vendor shall be calibrated periodically depending on its use and criticality of the test / measurement to be done. The contractor shall maintain all the relevant records of periodic calibration and instrument identification and shall produce the same for inspection by Purchaser. Wherever asked specifically the vendor shall re-calibrate the measuring / test equipment in the presence of Purchaser/ Inspector.

10.0 Protection, preservation, packaging and transportation

10.1 Protection

All coated surfaces shall be protected against abrasion, impact, discoloration and any other damages. All exposed threaded portions shall be suitably protected with non-metallic protection device. The ends of all piping and conduit equipment connections shall be properly sealed with suitable devices to protect them from damage. The parts which are likely to get oxidized or corroded, due to exposure to weather, should also be properly treated and protected in a suitable manner. All primers/paints/coatings shall take into account the hot humid, corrosive & alkaline, over ground environment.

10.2 Preservation

All exposed metallic surfaces subject to corrosion shall be protected by shop application of suitable coatings. All surfaces shall be thoroughly cleaned of all mill scales, oxides and other coatings and prepared in the shop. The surfaces that are to be finish-painted after installation or require corrosion protection until installation, shall be shop painted with at least two coats of primer. *For special painting requirements refer to Annexure-I to this specification.*

10.3 Packaging and transportation

10.3.1 All the equipment shall be suitably protected, coated, covered or boxed and crated to prevent damage or deterioration during transit, handling and storage at Site till the time of erection.

10.3.2 The over dimensional consignment (ODC) w.r.t Indian road / rail conditions shall be mutually discussed and finalised during the execution of contract.

11.0 Guarantee / Warranty

The offered system shall be guaranteed for 24 months from the date on which the equipment / system is put into use (by the end user) or 48 months from the date of supply whichever is earlier against defective design, defective material usage, defective workmanship, defective packaging and forwarding.

12.0 Deviations

Deviations to specification, if any, shall be clearly spelt out in the offer stage itself. During contract/ inspection/ final erection stages, the Purchaser reserves the right to entertain or deny such deviation.

13.0 Exclusions

Any exclusion from scope of supply shall be clearly spelt out in the offer. Exclusion of major / critical items shall make the offer liable for rejection.

14.0 Documents to be submitted by vendor

14.1 Documents to be submitted along with the offer:

14.1.1 Product literature / catalogue and drawings in support of the offer shall be submitted in three copies along with the quotation to evaluate the offer.

14.1.2 Sectional arrangement drawing with plan, elevation, and end view along with major dimensions and weight particulars.

14.1.3 Filled in check list. (Annexure-II to this specification)

14.1.4 Weight and quantity of individual components as per the scope of supply shall be indicated in the drawing as bill of quantity / material. Also total weight of scaffold per boiler to be furnished.

14.1.5 Design Calculation:

Vendor shall submit the design calculation to satisfy the specification clause:4.5. Also, the permissible load on any scaffold vertical should be always greater than actual maximum load on that vertical due to the sum of scaffold self-weight and intended / distributed loads.

14.1.6 The quality plan for the product under supply shall be furnished along with the offer. (This will be amended in consultation with the ultimate customer/end user, if required).

14.1.7 List of Special tools and tackles.

14.1.8 List of initial spares.

14.1.9 A certificate for the components from Safety Steward/ Authority/ Body of the country of make shall be provided.

14.1.10 Document for justifying the design aspects of the offered system both from stability and safety aspects.

14.1.12 List of Deviations or no deviation declaration.

14.1.13 List of Exclusions.

14.1.14 Typical O&M manual of the offered system similar to the earlier job executed by the vendor. (Preferably that applicable for the certificate provider)

14.1.15 Erection & dismantling schedule as per clause 3.7 of this document.

14.2 Documents to be furnished after award of contract

14.2.1 Complete arrangement drawings giving particulars like:

a) Bill of Quantity (of all individual components)
b) Weight details of all components individually
c) Identification marks / Numbers

14.2.2 Packaging procedure detailing the list of components shall be despatched individually with identification and with preservation and storage.

14.2.3 Test certificates shall be furnished before despatch of components.

14.2.4 Material test certificate for all the major components.

14.2.5 Quality control / Inspection documents generated during the stages of inspection, performance inspection and final inspection in line with the final approved quality plan.

14.2.6 Guarantee certificate shall be furnished by the vendor.

14.2.7 Loading Schedule of the scaffolding indicating the safe working load in each floor level (including the number of persons allowed) shall be submitted by the Vendor.

14.2.8 O& M manual.

15.0 General

15.1 The language used in offer, O & M manual, Labels, drawings etc. shall be in "English only."

15.2 For Equipment and other special requirements pertaining to the contract, refer **Annexure-I** to this specification.

15.3 **Annexure -II** is the Check list to be filled in completely by the vendor and submitted **along with the offer.** Offer with incomplete Check list is liable for rejection.

15.4 **Annexure – III (Drawing)**, Furnace arrangement for Quick Erect Scaffold, contains all details of the requirements like furnace width, depth, height, location of access / manhole doors, goose neck / furnace bottom position, elevation of burners etc.

BANK GUARANTEE FOR PERFORMANCE SECURITY

(Non-Judicial Stamp paper/e-stamp paper of appropriate value as per Stamp Act prevailing in the State(s))

Bank Guarantee No:

Date:

To

NAME

& ADDRESSES OF THE BENEFICIARY **IFSC AND MICR CODE**

Dear Sirs,

1. In consideration of Bharat Heavy Electricals Limited (hereinafter referred to as the 'Employer' which expression shall unless repugnant to the context or meaning thereof, include its successors and permitted assigns) incorporated under the Companies Act, 1956 and having its registered office at _____[1] through its Unit at……..(name of the Unit) having awarded to (Name of the Vendor / Contractor / Supplier) (VENDOR CODE) with its registered office at_____[2] hereinafter referred to as the ' Vendor / Contractor / Supplier ', which expression shall unless repugnant to the context or meaning thereof, include its successors and permitted assigns), a contract Ref No……dated ……[3] valued at Rs……[4] (Rupees ----------)/FC……(in words……..) for ……[5] (hereinafter called the 'Contract') and the Vendor / Contractor / Supplier having agreed to provide a Performance Security by way of a Bank Guarantee, equivalent to ……% (…. Percent) of the said value of the Contract to the Employer for the due performance of all the contractual obligations of the Vendor / Contractor / Supplier including warranty obligations

2. we, ……, (hereinafter referred to as the Bank), having registered/Head office at ……. and inter alia a branch at …… being the Guarantor under this Guarantee, hereby, irrevocably and unconditionally undertake to forthwith and immediately pay to the Employer any sum or sums upto a maximum amount of Rs ---------- [6] (Rupees ----------) without any demur, immediately on first demand from the Employer and without any reservation, protest, and recourse and without the Employer needing to prove or demonstrate reasons for its such demand.

3. Any such demand made on the Bank shall be conclusive as regards the amount due and payable by the Bank under this guarantee. However, our liability under this guarantee shall be restricted to an amount not exceeding Rs. _____.

4. We undertake to pay to the Employer any money so demanded notwithstanding any dispute or disputes raised by the Vendor / Contractor / Supplier in any suit or proceeding pending before any Court or Tribunal, Arbitrator or any other authority, our liability under this present being absolute and unequivocal.

5. The payment so made by us under this Guarantee shall be a valid discharge of our liability for payment thereunder and the Vendor / Contractor / Supplier shall have no claim against us for making such payment.

We the ……bank further agree that the guarantee herein contained shall remain in full force and effect during the period that would be taken for the performance of all the contractual obligations of the Vendor / Contractor / Supplier including satisfactory completion of the warranty period /obligations as per the terms of the Contract and that it shall continue to be enforceable till all the dues of the Employer under or by virtue of the said Contract have been fully paid and its claims satisfied or discharged.

6. We……..BANK further agree with the Employer that the Employer shall have the fullest liberty without our consent and without affecting in any manner our obligations hereunder to vary any of the terms and conditions of the said Contract or to extend time of performance by the said Vendor / Contractor / Supplier from time to time or to postpone for any time or from time to time any of the powers exercisable by the Employer against the said Vendor / Contractor / Supplier and to forbear or enforce any of the terms and conditions relating to the said Contract and we shall not be relieved from our liability by reason of any such variation, or extension being granted to the said Vendor / Contractor / Supplier or for any forbearance, act or omission on the part of the Employer or any indulgence by the Employer to the said Vendor / Contractor / Supplier or by any such matter or thing whatsoever which under the law relating to sureties would but for this provision have effect of so relieving us.

7. The Bank also agrees that the Employer at its option shall be entitled to enforce this Guarantee against the Bank as a principal debtor, in the first instance without proceeding against the Vendor / Contractor / Supplier and notwithstanding any security or other guarantee that the Employer may have in relation to the Vendor / Contractor / Supplier's liabilities.

8. This Guarantee shall remain in force upto and including……. [7] and shall be extended from time to time for such period as may be desired by Employer.

9. This Guarantee shall not be determined or affected by liquidation or winding up, dissolution or change of constitution or insolvency of the Vendor / Contractor / Supplier but shall in all respects and for all purposes be binding and operative until payment of all money payable to the Employer in terms thereof.

10. Unless a demand or claim under this guarantee is made on us in writing on or before the …….[8]we shall be discharged from all liabilities under this guarantee thereafter.

11. Any claim or dispute arising under the terms of this document shall only be enforced or settled in the Courts at Tiruchirappalli.

12. We……. BANK lastly undertake not to revoke this guarantee during its currency except with the previous consent of the Employer in writing.

Notwithstanding anything to the contrary contained hereinabove:

a) The liability of the Bank under this Guarantee shall not exceed…… [6]
b) This Guarantee shall be valid up to …….. [7]
c) Unless the Bank is served a written claim or demand on or before (minimum 3 to 6 months from the expiry date [8] all rights under this guarantee shall be forfeited and the Bank shall be relieved and discharged from all liabilities under this guarantee irrespective of whether or not the original bank guarantee is returned to the Bank.

13. We, _____ Bank, have power to issue this Guarantee under law and the undersigned as a duly authorized person has full powers to sign this Guarantee on behalf of the Bank.

For and on behalf of
(Name of the Bank)

Dated…….

Place of Issue…….

BANK EMAIL ID:

BANK PHONE NO:

AUTHORISED SIGNATORIES CELL PHONE NO:

BANK FAX NO:

[1] *NAME AND ADDRESS OF EMPLOYER I.e Bharat Heavy Electricals Limited*

[2] *NAME AND ADDRESS OF THE VENDOR /CONTRACTOR / SUPPLIER.*

[3] *DETAILS ABOUT THE NOTICE OF AWARD/CONTRACT REFERENCE*

[4] *CONTRACT VALUE*

[5] *PROJECT/SUPPLY DETAILS*

[6] *BG AMOUNT IN FIGURES AND WORDS*

[7] *VALIDITY DATE*

[8] *DATE OF EXPIRY OF CLAIM PERIOD*

Financial Pre-Qualification Requirement

1. Indigenous suppliers shall submit Audited copies of annual reports (Balance Sheets), Profit & Loss statement for the last three years (or from date of incorporation whichever is less) and GST certificate.
2. In case of authorized representative/dealer of OEM participating in the tender, all the documents as per Sl. No.1 above shall be submitted for both the authorized representative/dealer and OEM.
3. Import suppliers shall submit latest report from reputed third party business rating agency like D&B /Credit reform etc.

OEM signature and seal with Date
(If applicable)

Vendor signature and seal with Date

TAMIL NADU GENERATION AND DISTRIBUTION CORPORATION LIMITED

From
Er.P.GNANAPALAN,B.E.,F.I.E.,
Chief Engineer/Projects,
V Floor, Western Wing,
144, Anna Salai,
Chennai-600 002.

Fax No : 044- 28520878
Cell No: 9445857543
Email ID: cepr@tnebnet.org

To
Shri Shamsher Singh,
Sr. Mgr. (PS- PMG)
Power Sector - Project Management,
BHEL, Advant Navis,
Business Park,
Sector -142, Expressway Noida,
U.P. – 201 305.
Direct:0120- 674831
Mobile :+919818878799
Email : pmgss@bhel.co.in

Lr.No.:CE/Pr/SE/E/Th&HyP/EE/M/AEE/M/F.En SEZ STPP/D.124/2015 dt. 19.03.2015.
24

Dear Sir,

Sub.: TANGEDCO - 2 x 660 MW Ennore SEZ STPP –EPC Contract to M/s BHEL – Painting schedule Rev. 02 – No further comments to M/s BHEL – Approval in Category I requested – Reg.

Ref.: 1.Lr.No:CE/P/SE/M/EE-10/E/P/F.2x660MWEn.SEZ.STPP/D.60/2014 dt.27.09.2014.
2.M/s BHEL's mail/letter TRY/ENNORE/0008 dt. 09.03.2015.

With reference to M/s BHEL's letter cited under reference (2) above, the approval under Category I for Drawing/Document No.**PL-C3-PS/1723 Rev. 02- Painting schedule** is sent along with the approved drawing / document.

Approval on the drawing/document listed in the annexure are enclosed. The column against each drawing/document refers to the remarks applicable to the particular drawing as indicated below:

Category I - Approved.
Category II - Approved with comments. Proceed with Fabrication considering our comments & Resubmit for approval.
Category III - Not approved. See comments and resubmission required.
Category IV - For information.

S.No.	Drawing/Document No.	Rev	Description	Remarks
1.	PL:C3-PS/1723	02	Painting schedule	Cat.: I

Yours faithfully,
29/4/2015
Chief Engineer/Projects 2/2

Encl.:Approved Document/Drawing.

Copy to M/s Desein private limited, Desein House, Greater Kailash-II,New Delhi 110048.

BHARAT HEAVY ELECTRICALS LIMITED
Tiruchirappalli - 620 014

PROJECT	2 X 660 MW ENNORE SEZ SUPERCRITICAL THERMAL POWER PROJECT AT ASH DYKE OF NCTPS, CHENNAI	
TANGEDCO	OWNER	TAMILNADU GENERATION & DISTRIBUTION CORPORATION LIMITED
	OWNER'S CONSULTANT	DESEIN PRIVATE LIMITED DESEIN HOUSE, NEW DELHI

Prepared by	**K. Srinivasan** **Engineer/Plant Lab**		**Document No: PL: C3 - PS / 1723**
Reviewed by	**Dr. V. Rajasekharan** **Manager/ Plant lab**		**Revision No: 02 Dated: 06-03-2015**
	A. Arunachalam **SM /PE/FB**		
Approved by	**Dr. Anbazhagan. V** **DGM / Plant Lab**		

2X660 MW ENNORE SEZ SUPERCRITICAL THERMAL POWER PROJECT

Category : I - APPROVED

Lr. No.: CE/Prj/SE/THP/EE/ /AEE/ /F:EnSEZPrj/D. /201 dt.....

This Approval herein neither relieves the Vendor/Contractor of his contractual obligations and his responsibilities for correctness of dimensions, materials of construction, weights, quantities, design details, assembly fits conforming to the relevant codes and standards as per the specification and performance requirements nor does it limit the purchaser's rights under the contract.

24.3.2015

CHIEF ENGINEER/PROJECTS

RECORD OF REVISIONS

Rev. No	Date	Details of revision	Remarks
00	24.11.2014	New	Prepared in line with MOM between TANGEDCO and BHEL (page no. 77 to 80 of 307) dated 27.11.2013 & 28.11.2013 at TANGEDCO Head office, Chennai.
01	24.02.2015	Finish paint is indicated in sl. No.11	Changes incorporated as per comments for CAT.III approval by TANGEDCO 'Letter for comments on painting scheme for SG and Aux' Ref: Lr.No: SE/E/Th&HyP/EE/ M/AEE/M/F.En SEZ STPP/D.100 /2015 Dt.23.02.2015
02	06-03-2015	Painting scheme proposed for outdoor equipments in sheet 10 of 11.	Changes incorporated as per comments for CAT.II approval by TANGEDCO 'Letter for comments on painting scheme for SG and Aux' Ref: Lr.No: SE/E/Th&HyP/EE/ M/AEE/M/F.En SEZ STPP/D. /2015 Dt.05.03.2015

Sl. No.	PGMA / Description	Surface Preparation & Surface Profile	Primer coat		Intermediate coat		Finish coat			Total DFT µm (min)
			Paint	No. of coats	Paint	No. of coats	Paint	No. of coats	Shade	
1 PS1AC	Collector & Separator Vessels (Except Internals), Supports 04 –147,321,347,547 Drum (Except Internals), Drum suspension 04-114, 144, 210	SSPC-SP3/ Power Tool Cleaning	Red Oxide Zinc phosphate Primer (Alkyd Base) to IS 12744 DFT= 30µm per coat	1	--	--	Synthetic Enamel paint (Long Oil Alkyd) to IS 2932 DFT= 20µm per coat	2	International orange shade No:592 of IS 5	70
2 PS5	Drum Internals & foundation materials 04-114,210;21-602;24-603,627;35-010 Machined components and Dd items 07-302,303,309,331,360,361,362,393; 09-303,304;12-306,314,317,324,327,328, 12-344,348,354,393;17-304,306,319; 19-306,307;21-605;24-352,803,813, 24-818,827,837,842;28-700;35-010,190, 35-700,701;36-700;39-012,700;41-710; 42-700,710;43-710;45-710;47-710; 48-019, 913;65-710;67-710	SSPC-SP1/ or SSPC – SP3 Solvent / Power Tool Cleaning	Rust Preventive Fluid to PR: CHEM: 09 – 04 DFT=25µm per coat	1	--	--	--	--	--	25
3 PS19C2	Buck stays 08-001,003,006,007,111,501,503,901,910 Coal bunker structures 34-100,200,300,390,400,500 Boiler supporting structures, Columns, Girders, Bracings 35- 110,111,112,121,122,130,141,150, 35- 211 to 214,221,222,231,232 35- 311,312,321,322,331,332,410,341,342 35- 351, 352,361,362,381 to 387,390 35- 441 to 447,451 to 457,510,511 to 517, 35- 521 to 527,531 to 537, 610;	Blast cleaning to SA2 ½ (Near white metal) with surface profile 35-50 µm	Inorganic Ethyl Zinc Silicate Primer DFT=80µm per coat	1	Epoxy Based MIO /TiO2 Pigmented Intermediate Coat DFT=100µm per coat	1	#Epoxy Finish Coat, DFT=40µm per coat	2	Smoke Grey Shade No: 692 of IS5	260

Two coats of Epoxy finish paint shall be applied at site.

S. No.	PGMA / Description	Surface Preparation & Surface Profile	Primer coat		Intermediate coat		Finish coat			Total DFT µm (min)
			Paint	No. of coats	Paint	No. of coats	Paint	No. of coats	Shade	
3 PS19C2 (Contd.)	<u>Galleries, Stair-ways & inter connecting Walkways</u> 36- 110,130,150,310,311,312,313,314, 36- 315,316, 321to 326, 331 to 338, 36 -341 to 346, 351 to 356, 361 to 366, 36–391 to 395 ,610, 620,621,740; 38-210,299,310,381,410,510,610,611,710; 41-200,500; <u>ID system structures</u> 39 – 101,102,141,142,150,299,300,301; 39 – 304,305,306;48–085,200,335; <u>Duct supports</u> 48-015,115,145,200,205,225,235,265,385, 48-435,465,485,495,665,911,912,915;	Blast cleaning to SA2 ½ (Near white metal) with surface profile 35-50 µm	Inorganic Ethyl Zinc Silicate Primer DFT=80µm per coat	1	Epoxy Based MIO /TiO2 Pigmented Intermediate Coat DFT=100µm per coat	1	#Epoxy Finish Coat, DFT=40µm per coat	2	Smoke Grey Shade No: 692 of IS5	260
4 PS3	Components >95° C Insulated other than components in Sl.No.6 &8 Ring Headers, Down Comers, Hot air Headers outside the gas path etc. 05-155,227,231,251,327,330,350;06-609,614,616,657; 07-110,125,211,214,223,231,232,993; 10-170,174,178,191,270,274,278,283,284, 10-285,291;12-178,850,900;15-136,177, 15-236,279;17-407,504,807;18-001,010; 19-701,702,903;20-998;21-600,603,604; 24-600,604,620,624,628,811,824; 42-020,030,150,158; 48-332,334,891,892,915,993; <u>Hot Air:</u> 48-018,118,202,204,207,212,214, 222,224,232,234,262,264,662,664,667. <u>Flue Gas:</u> 48-372,382,384,386,432,434, 462,464,482, 484,492,494	SSPC-SP3/ Power Tool Cleaning	Red Oxide Zinc phosphate Primer (Alkyd Base) to IS 12744 DFT= 30µm per coat	2	--	--	--	--	Red oxide	60

Two coats of Epoxy finish paint shall be applied at site.

Sl. No.	PGMA / Description	Surface Preparation & Surface Profile	Primer coat		Intermediate Coat		Finish coat			Total DFT µm (min)
			Paint	No. of coats	Paint	No. of coats	Paint	No. of coats	Shade	
5 9B1	Components >95° C and <400°C uninsulated other than components coming in gas path. 09- 001,002;20-511;21-800;24-642,660,665,680, 24-685,807,820,824,860,865,867;28-220; 42-200,300,358;48-915;	Blast cleaning to SA2 ½ (Near white metal) with surface profile 35-50 µm	Inorganic Ethyl Zinc Silicate Primer DFT=75 µm per coat	1	--	--	Heat Resistant Aluminium Paint to IS 13183 Gr.II DFT=20 µm per coat	2	Aluminum	115
6 PS2	Loose tubes, SH, RH & Eco. coils, 11– 074,078,170,374,378,406,416,467,474,487, 11-606,608, 684, 694,716,718,767, 11-769,787,791,916,917,918,967,969,987,991; 12-184,368,405,506,514,524,528,544,548,554,803, 12-805,901,903,914,917,924,927,928,944,948,954, 12-968;16-079,201,202,203,278,379; 19-814,824,884,914,924,984;	SSPC – SP2 or SSPC – SP3 Hand tool / Power tool cleaning	Red Oxide Zinc Phosphate Dip coat primer to PR: CHEM: 09 – 03 DFT=35µm per coat	1*	--	--	--	--	Red Oxide	35

*-In lieu of dip painting, 2 coats of brush painting of Red oxide Zinc Phosphate primer to a coating thickness of 60µ is also permitted in line with Sr.No.8.

Sl. No.	PGMA / Description	Surface Preparation & Surface Profile	Primer coat		Intermediate Coat		Finish coat			Total DFT µm (min)
			Paint	No. of coats	Paint	No. of coats	Paint	No. of coats	Shade	
7 PS1A	Components < 95° C –Other than components in Sl.No.3. 07-409,431,460,461,462,500,502,503,531,560, 07-601;24-350,351,352,601,604,625,626,635, 12-906,907;21-601,604;24-350,640,641,800, 24-801,804,805,806,808,809,810,815,817,825, 24-826,835,836,840,841,855,950;30-233,234; 35-10,410,510,610,995;36-310,611,613; 37-010;39-302;41-200,350,390,500;42-001, 42-002,005,010,046,065,070,120,128,152,154, 42-157;43-004,005,104,105,200;45-200,801, 45-802,804,805,858;47-261,263,858;48-082, 48-084,911;95-088,091;97-592; Cold Air 48-012,014,112,114,132,141 Tempering Air: 48-142,144,152; 65-736; 67-204,272,276, 283, 67-801,802,803; 95-088,089,091,092,485,495; 96-186,187; 97-097, 585,591,592; 99-100,300,600;	SSPC-SP3/ Power Tool Cleaning	Red Oxide Zinc phosphate Primer (Alkyd Base) to IS 12744 DFT= 30µm per coat	1	--	--	Synthetic Enamel paint (Long Oil Alkyd) to IS 2932 DFT= 20µm per coat	2	Smoke Grey Shade No: 692 of IS5	70

Sl. No.	PGMA / Description	Surface Preparation & Surface Profile	Primer coat		Intermediate coat		Finish coat			Total DFT µm (min)
			Paint	No. of coats	Paint	No. of coats	Paint	No. of coats	Shade	
8 PS3	Components >95° C coming in the gas path ,Headers, Commissioning Spares &erection Materials etc., 04-988;05-137,147;06-400,401,434,437, 06-451,453,455, 500,501,609,614,616,657, 06-731,734,737,741,744,747,751,752,753, 06-755;07-315,316,318,423,883,993; 10-182,183,184,185;11-491; 12-850,883,900,993; 16-403;17-174;19-753,763,783,793,802, 19-850,851,852,850;20-998;21-987,988; 24-822,823,987,988,989,993;30-103,215, 30-219,223,235;31-010,104,301,993; 32-010;35-993;37-010,810;39-993;41-988; 42-858,988;48-993;65-200;67-200;96-193; 97-282,590;99-099	SSPC-SP3/ Power Tool Cleaning	Red Oxide Zinc phosphate Primer (Alkyd Base) to IS 12744 DFT= 30µm per coat	2	--	--	--	--	Red oxide	60
9 PS1BB	Hand rails and posts, ladders / rungs 34 - @820,850 35 – @821,822, @823,851 36 – @820,850,851,852,853 38 – @820,850 39 – @820,850	SSPC-SP3/ Power Tool Cleaning	HB Chlorinated Rubber based Zinc phosphate Primer DFT= 50µm per coat	1	--	--	Syn. Enamel paint (Long Oil Alkyd) to IS 2932 DFT= 20µm per coat	2	BLACK	90
10 PS6	Floor Grills, Guard plates 34-810;35 – 811;36-811,812,813,814 38 – 810, 39 – 810	Hot dip Galvanizing to a coating weight of 610 g/m^2 (minimum) and to a coating thickness of 85.0 microns (minimum). Refer Notes given below **								

Notes **: Guard plates shall be painted as per painting scheme prescribed in Sl. No: 03

PAINTING SCHEME FOR VALVES

Sl. No.	PGMA / Description	Surface Preparation & Surface Profile	Primer coat		Intermediate coat		Finish coat			Total DFT µm (min)
			Paint	No. of coats	Paint	No. of coats	Paint	No. of coats	Shade	
11 PS 10	Cast carbon steel valves (Conventional) Cast alloy steel valves (Conventional) All API valves, QCNRV, SV & SRV Silencers, 24-885; Soot blower valves: 21-800,825 Safety valves & ERV 21-850; 24-673,880,881; Seal Boxes & Doors etc. 09-003,004,005,503;28-220;	SSPC-SP3/ Power Tool Cleaning	Heat Resistant Aluminium Paint to IS 13183 Gr. I	1	--	--	Heat Resistant Aluminium Paint to IS 13183 Gr. I	1	Aluminum	40
PS7	Forged valves	Phosphating	To a coating weight of 1500 mg per sq.ft.	--	--	--	--	--	--	--
1AS1	Soot Blower components 20-051,054,201,204,794,962. 20-301,304,801,803	SSPC-SP3/ Power Tool Cleaning	HB Chlorinated Rubber based Zinc phosphate Primer DFT= 50µm per coat	1	--	--	Syn. Enamel paint (Long Oil Alkyd) to IS 2932 DFT= 20µm per coat	2	Verdigris Green Shade No. 280 of IS5	90
	HP / LP system	SSPC-SP3/ Power Tool Cleaning	Heat Resistant Aluminium Paint to IS 13183 Gr.I	2	--	--	--	--	--	40

Sl.No.	PGMA / Description	Surface Preparation & Surface Profile	Primer coat		Intermediate coat		Finish coat			Total DFT µm (min)
			Paint	No. of coats	Paint	No. of coats	Paint	No. of coats	Shade	
12 PS15	For CLH & VLH* PGs 07,08,12,17,19,21,24,47,48 &80 07-402,403,405; 17-904,906,919; 19-506,507,904,905, 906,907; 24-351,353,817; 48-206,395;	Blast cleaning to SA2 ½ (Near white metal) with surface profile 35-50 µm	Epoxy zinc rich primer To IS 14589 Gr. II %VS=35, (min) DFT=40 microns per coat	1	--	--	Aliphatic acrylic Poly-urethane paint %VS=40.0 (min) DFT=30.0 microns per coat	1	Phirozi Blue Shade No. 176 of IS5	70
13 PS33A	Components > 95 C, un-insulated Fuel pipes 47-200,266,267,268,269;	Blast cleaning to SA2 ½ (Near white metal) with surface profile 35-50 µm	Inorganic Ethyl Zinc Silicate Primer DFT=75 µm per coat	1	Heat Resistant Aluminium Paint to IS 13183 Gr.II DFT=25 µm per coat	2	Heat Resistant Aluminium Paint to IS 13183 Gr.II DFT=20 µm per coat	1	Aluminum	145
14 PS 1BE	All Columns below '0' level (embedded in concrete) PGs 35,36,38 39	SSPC-SP3/ Power Tool Cleaning	HB Chlorinated Rubber Based Zinc Phosphate primer %VS=40, (min) DFT=50 microns per coat	1	--	--	--	--	Grey	50

*- For components other than CLH & VLH, Painting scheme shall be as given in Sl. No. 7.

NOTES:

1. Rust Preventive Coating should be given on HSFG Bolt and nut threads.
2. Machined surfaces, collectors – separator internals and all retainers are to be applied with a coating of Temporary Rust Preventive oil.
3. All threaded and other surfaces of foundation bolts and its materials, insulation pins, Anchor channels, Sleeves shall be coated with Temporary Rust Preventive Fluid and during execution of civil works; the dried film of coating shall be removed using organic solvents.
4. Ground shade/colour of Finish paints & identification tag/Band for equipments, pipings pipe service, boiler supporting structures and other boiler components shall be followed as per tender document.
5. PGMAs under Sub-Vendor items are not indicated. For all bought-out and sub-vendors items including PGMAs mentioned above falling under the scope of BHEL the same scheme as for main equipment as covered in this document shall be followed.
6. This painting Schemes is valid for only Customer No: 1723 & 1724-TANGEDCO –ENNORE- SEZ-2X660 MW & I3/1425 - 1x60TPH.
7. No painting is required for Stainless Steel, non-ferrous & galvanized components.
08. Wherever inside surfaces of components under PGMA 48 – XXX & others, need protection till erection, two coats of Red-oxide zinc phosphate primer paint to IS12744 to a DFT of 60 microns shall be applied, after power tool cleaning.
09. The Temporary Rust Preventive coating that already been applied on any components, tubes, pipes etc., shall be visually inspected for good adherence. If the coating is intact, direct coating of alkyd based red oxide paints over the coating is permitted. In case, the coating is to be removed by suitable solvents / heating to 350 –400 °C for an hour before primer paint application –but, in this case, it should be ensured that the minimum surface cleanliness required for primer paint application shall be SSPC – SP2 (equivalent – Hand Tool cleaning).
10. In components, wherever plates / sheets of thickness less than or equal to 5 mm and rods of <25mm/tubes/drain pipes are used, power tool / hand tool cleaning to SSPC – SP3 / SP2 shall be followed and the painting shall be done as described in Sl.No.7.
11. For all commissioning components-erection materials (xx-993) two coats of Red oxide Zinc Phosphate Primer shall be applied to meet the temporary protection till erection, after power tool cleaning.
12. Touch-up painting of damaged areas shall be carried out as per clause 4.3, Page. No.101 of Vol.II of the DESEIN's Specification no: CE/C/P&E/EE/E/OT. No.03/2013-14 – 2x660MW ENNORE SEZ STPP.
13. All components covered under different PGMA's are to be painted In case any component is left out, the same shall be deemed to be included under the relevant section based on paint logic approved.
14. For very small components like clamps etc. scheme no.6 shall be followed.
15. For very small components with weldable primer at edges, the entire component shall be applied with weldable primer.
16. Painting scheme for all temporary structures like 04-196 shall be PS 1AE i.e. 1 coat of Red oxide Zinc Phosphate primer (Alkyd Base) to IS 12744-DFT-30 μ and 2 coats of Synthetic Enamel paint (Long Oil Alkyd) to IS 2932-DFT-2X20μ Shade Yellow –Shade No. 356 of IS 5- Total DFT 70μ. These are to be cut & removed at site after erection. (It excludes components covered under Sr. No. 3 & 9 of description table)
17. For internal protection of Pipes, tubes, headers and other pressure parts, Volatile Corrosion Inhibitor (VCI) pellets shall be put (after sponge testing/ draining/ or drying) and subsequently end capped. The dosage of VCI pellets shall be approximately 100 g/ Cu.m. For tubes typically 4 – 5 tablets per end are to be put. For C & I items the dosage of self-indicating Silica Gel (colourless) shall be 250 g/ cu.m. (About 2 to 3 bags weighing approximately 100 grams each). VCI pellets shall not be used for stainless steel components and its composite associates.
18. All threaded components of spring assemblies and turnbuckles shall be galvanized and achromatized to 15 microns minimum thickness.
19. Soot blower components i.e Valve head assembly having high surface temperature (> 200 and <600 deg. C) shall be applied with protective coating as per PS9 (up to 400 deg.C) and PS10 (up to 600 deg.C)
20. Painting scheme of sl.no.3 shall be followed for external surfaces of outdoor equipments such as piping, valves, motors etc. with temperature up to 120 deg. C.

Painting Scheme – Details for procurement & application purposes

Sl.No.	Generic nature of paint	Theoretical Covering Capacity Sq.m per Litre.	No. of pack	Volume solids, % (min)**	DFT in microns per coat (approx.)	Shade	Shade No. to IS5	Mode of appln.	Over coating interval, Hrs.
1	Inorganic ethyl zinc silicate to IS 14946 –Main Coat	8	2	60	75	Grey	--	Spray only	16
2	Poly amide cured Epoxy based Tio2/MIO pigmented intermediate coat	6	2	60	75	Grey/ Brown	--	## Spray	24
3	Epoxy based polyamide cured finish paint to IS 14209	10	2	40	35	Smoke Grey	692	Spray	24
4	Aliphatic acrylic polyurethane paint to IS 13213	10	2	40	30	Phirozi – Blue	176	Spray	24
5	Heat resistant Aluminium paint to IS 13183 Grade I/II	10	1	-	20	--	--	Brush / Spray	24
6	Red oxide zinc phosphate primer paint to IS 12744	10	1	--	25-30	-	--	Brush / Spray	12
7	Red oxide Zinc Phosphate Dip coat primer paint to PR: CHEM: 09-03	10	1	--	35	--	---	Dip	12
8	Long oil alkyd synthetic enamel finish paint to IS2932	10	1	--	15-20	Reqd. shade	Corrpdg. Shade no.	Brush / Spray	12
9	Temporary Rust preventive fluid to PR: CHE: 09 – 04	10	1	--	25	--	--	--	12
10	Epoxy Zinc rich primer to IS14589 Gr.II	8	2	35	40	Grey	--	Spray	24
11	General purpose Aluminium paint to IS 2339	10	2	--	20	Aluminum	--	Brush	12
12	HB Chlorinated Rubber Based Zinc Phosphate Primer-Colour Grey	8	1	40	50	Grey	--	Brush / Spray	12

Brush painting is accepted, if recommended by the Paint suppliers. The covering capacity of paints specified is only approximate.
The paints and Rust Preventive fluid shall be procured from BHEL's approved suppliers. ** Values are indicative.

Painting of Damaged Areas

(Areas where the paint has deteriorated badly by erosion and areas where the paint film has lost its adhesion and where the steel has rusted appreciably, should be repainted as follows)

Sl.No.	Components	Surface Prepa-ration	Primer coat		Intermediate coat		Finish coat			Total DFT µm (min)
			Paint	No. of coats	Paint	No. of coats	Paint	No. of coats	Shade	
1	Paint damaged components fall under Sl.no: 3	Power tool cleaning to bare metal	Epoxy zinc rich primer to IS 14589 Grade II to a DFT of 50 mic/coat	2 T.DFT 100µ (min)	As given in scheme	1	As given in scheme	2	As given in scheme	280
2	Paint damaged components fall under Sl.no: 12	Power tool cleaning to bare metal	One coat of Epoxy zinc rich primer to IS 14589 Grade II to a DFT of 40 microns	1	--	--	As given in scheme	1	As given in scheme	70
3	Paint damaged components fall under Sl.no: 1,2,4,5,6,7,8,9,11,13.	Power tool cleaning to bare metal	As given in scheme	As given in scheme	--	--	As given in scheme	As given in scheme	As given in scheme	As given in scheme

Technical Pre-Qualification Requirement for Quick Erect Scaffold-Aluminium/Aluminium Alloys:

"Bidder should have supplied similar Quick Erect Scaffold (QES) system in the past and the same should have put in use at least once in one thermal power station of capacity 210 MW and above. Also, vendor shall submit any one of the following correlated documents:

a) At least one performance certificate along with corresponding PO copy
b) At least one successful erection completion certificate by customer along with corresponding PO copy

OR

Alternatively, bidder shall submit minimum one reference of previous Quick Erect Scaffold - Aluminium supply made for application involving construction of access platform at a height of minimum 40 m along with necessary documents for proof of execution. In addition to this bidder shall carryout following activities after placement of Purchase Order (P.O.):

1. *Bidder shall demonstrate the construction of scaffolding arrangement simulating the boiler furnace application i.e. supporting from furnace hopper (hopper geometry as per the BHEL drawing) and*
2. *Bidder shall also carry out scaffolding load test as per the applicable standards and approved procedure by BHEL, which shall be witnessed and certified by BHEL / BHEL approved agencies.*

On Placement of Purchase Order, above mentioned demonstration activities as per sl.no 1 and 2 to be completed & performed without fail. After completion of above, further approval of documents and manufacturing clearance will be provided.

Instructions to Bidder

A. Bidder should submit design documents to substantiate technical parameters specified in PQR, if the same is not mentioned in performance certificate/inspection report/ purchase order.
B. All the above PQR satisfying document submissions should be enlisted and submitted as per Annexure-D (format given below).
C. Bidder may also qualify based on the credentials of principal with whom the Bidder is having valid collaboration/licensing agreement to meet the package specific pre-qualifying requirements.
D. In case the documents submitted for meeting PQR are in language other than English, notarized English translation shall also be submitted.
E. BHEL reserves the right to assess the capabilities and capacity of the bidder/collaborators to perform the contract, as per BHEL evaluation procedure.
F. Final acceptance of the bidder is subject to BHEL and end customer's approval.

Format for submission of credentials as ANNEXURE-D

Sl.No.	Description of Project	Brief Scope of work	P.O. Ref. No. & Date	Purchase order value (Rs).	Date of completion as per P.O.	Performance Certificate enclosed (Y/N)	Remark

Tender Description:
Enquiry No:

PART-I (No Deviation Certificate)

Note: The following Declaration to be submitted on the bidder's Letter Head, duly signed & stamped and to be attached along with your Technical bid of the tender.

Supply of QUICK *ERECT SCAFFOLD ASSEMBLY for Ennore Project*

Enquiry No.:

I/We M/s. ……
have read and clearly understood all the Terms and conditions in Tender Schedule of and accordingly accept the same without any deviation what so ever.

- *I/ We unconditionally agree to all the tender conditions and no new conditions are imposed by us in the technical / price bid. I understand in the event of imposing any condition in the technical / price bid, such condition would be ignored by BHEL and only the prices will be considered for the purpose of evaluation". In case of any deviation (Technical or commercial) the same is mentioned below.*

Sl.No.	Document Reference	BHEL specification	Firms Alternative offer

- *I/ We confirm that none of our group concern or affiliates etc., appears on the list of banned firms / companies by BHEL (list available on www.bhel.com) nor any of the Director / Partner / proprietor of bidder / such group concern or affiliate etc. are involved with such company.*

- *I/ We also declare that, we have not been suspended or black listed or issued with Show Cause Notice by BHEL- Trichy or any other BHEL Unit or any PSU/ Government organization.*

- *I/ We confirm that other than us, none of our group concerns or affiliates etc. are participating in the tender either directly or indirectly through any other agency under same proprietor / common director(s) / common partner(s).*

- *I/ We confirm that if any of the above statement / information furnished by us in this tender is found to be false/ fake at any stage of tender evaluation or during execution of contract, BHEL will have the right to initiate appropriate action including legal proceeds / termination of contract, recovery of damages, penalties etc. as deemed fit.*

(Contractor Signature with Seal)

Contractor Signature

Contractor Seal

INTEGRITY PACT

Between
Bharat Heavy Electricals Ltd. (BHEL), a company registered under the Companies Act 1956 and having its registered office at "BHEL House", Siri Fort, New Delhi - 110049 (India) hereinafter referred to as "The Principal", which expression unless repugnant to the context or meaning hereof shall include its successors or assigns of the ONE PART
and
…….(description of the party along with address), hereinafter referred to as "The Bidder/ Contractor" which expression unless repugnant to the context or meaning hereof shall include its successors or assigns of the OTHER PART

Preamble

The Principal intends to award, under laid-down organizational procedures, Contract/s for supply of **Quick Erection Scaffolding for Ennore Project.** The Principal values full compliance with all relevant laws of the land, rules and regulations, and the principles of economic use of resources, and of fairness and transparency in its relations with its Bidder(s)/ Contractor(s).

In order to achieve these goals, the Principal will appoint independent External Monitor(s), who will monitor the tender process and the execution of the Contract for compliance with the principles mentioned above.

Section 1- Commitments of the Principal
1.1 The Principal commits itself to take all measures necessary to prevent corruption and to observe the following principles:
1.1.1 No employee of the Principal, personally or through family members, will in connection with the tender for, or the execution of a Contract, demand, take a promise for or accept, for self or third person, any material or immaterial benefit which the person is not legally entitled to.
1.1.2 The Principal will, during the tender process treat all Bidder(s) with equity and reason. The Principal will in particular before and during the tender process, provide to all Bidder(s) the same information and will not provide to any Bidder(s) confidential / additional information through which the Bidder(s) could obtain an advantage in relation to the tender process or the contract execution.
1.1.3 The Principal will exclude from the process all known prejudiced persons.

1.2 If the Principal obtains information on the conduct of any of its employees which is a penal offence under the Indian Penal Code 1860 and Prevention of Corruption Act 1988 or any other statutory penal enactment, or if there be a substantive suspicion in this regard, the Principal will inform its Vigilance Office and in addition can initiate disciplinary actions.

Section 2 - Commitments of the Bidder(s)/ Contractor(s)
2.1 The Bidder(s)/ Contractor(s) commit himself to take all measures necessary to prevent corruption. He commits himself to observe the following principles during his participation in the tender process and during the contract execution.
2.1.1 The Bidder(s)/ Contractor(s) will not, directly or through any other person or firm, offer, promise or give to the Principal or to any of the Principal's employees involved in the tender process or the execution of the contract or to any third person any material, immaterial or any other benefit which he / she is not legally entitled to, in order to obtain in exchange any advantage of any kind whatsoever during the tender Process or during the execution of the contract.
2.1.2 The Bidder(s)/ Contractor(s) will not enter with other Bidder(s) into any illegal or undisclosed agreement or understanding, whether formal or informal. This applies in particular to prices, specifications, certifications, subsidiary contracts, submission or non-submission of bids or any other actions to restrict competitiveness or to introduce cartelization in the bidding process.
2.1.3 The Bidder(s)/ Contractor(s) will not commit any penal offence under the relevant IPC/ PC Act; further the Bidder(s)/ Contractor(s) will not use improperly, for purposes of competition or personal gain, or pass on to others, any information or document provided by the Principal as part of the business relationship, regarding plans, technical proposals and business details, including information contained or transmitted electronically.
2.1.4 Foreign Bidder(s)/ Contractor (s) shall disclose the name and address of the agent and representative in India and Indian Bidder(s)/ Contractor (s) to disclose their foreign principle or associates. The Bidder(s)/ Contractor (s) will, when presenting his bid, disclose any and all payments he has made, and is committed to or intends to make to agents, brokers or any other intermediaries in connection with the award of the Contract.

2.2 The Bidder(s)/ Contractor (s) will not instigate third persons to commit offences outlined above or be an accessory to such offences.

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2.3 The Bidder(s)/ Contractor (s) shall not approach the courts while representing the matters to IEMs and will await their decision in the matter.

Section 3 - Disqualification from Tender process and exclusion from future Contracts

If the Bidder(s)/ Contractor(s), before award or during execution has committed a transgression through a violation of Section 2 above, or acts in any other manner such as to put his reliability or credibility in question, the Principal is entitled to disqualify the Bidder(s)/ Contractor(s) from the tender process or take action as per the separate "Guidelines on Banning of Business dealings with Suppliers/ Contractors" framed by the Principal.

Section 4 -Compensation for Damages

4.1 If the Principal has disqualified the Bidder from the tender process prior to the award according to Section 3, the Principal is entitled to demand and recover the damages equivalent Earnest Money Deposit/Bid Security.

4.2 If the Principal has terminated the contract according to Section 3, or if the Principal is entitled to terminate the contract according to section 3, the Principal shall be entitled to demand and recover from the Contractor liquidated damages equivalent to 5% of the contract value or the amount equivalent to Security Deposit/Performance Bank Guarantee, whichever is higher.

Section 5 - Previous Transgression

5.1 The Bidder declares that no previous transgressions occurred in the last 3 years with any other company in any country conforming to the anti-corruption approach or with any other Public Sector Enterprise in India that could justify his exclusion from the tender process.

5.2 If the Bidder makes incorrect statement on this subject, he can be disqualified from the tender process or the contract, if already awarded, can be terminated for such reason.

Section 6 -Equal treatment of all Bidders/ Contractors / Sub-Contractors

6.1 The Bidder(s)/ Contractor(s) undertake(s) to obtain from all subcontractors a commitment consistent with this Integrity Pact and report Compliance to the Principal. This commitment shall be taken only from those sub-contractors whose contract value is more than 20 % of Bidder's/ Contractor's contract value with the Principal. The Bidder(s)/ Contractor(s) shall continue to remain responsible for any default by his Sub-contractor(s).

6.2 The Principal will disqualify from the tender process all Bidders who do not sign this pact or violate its provisions.

Section 7 - Criminal Charges against violating Bidders/ Contractors /Sub-contractors

If the Principal obtains knowledge of conduct of a Bidder, Contractor or Subcontractor, or of an employee or a representative or an associate of a Bidder, Contractor or Subcontractor which constitutes corruption, or if the Principal has substantive suspicion in this regard, the Principal will inform the Vigilance Office.

Section 8 -Independent External Monitor(s)

8.1 The Principal appoints competent and credible Independent External Monitor for this Pact. The task of the Monitor is to review independently and objectively, whether and to what extent the parties comply with the obligations under this agreement.

8.2 The Monitor is not subject to instructions by the representatives of the parties and performs his functions neutrally and independently. He reports to the CMD, BHEL.

8.3 The Bidder(s)/ Contractor(s) accepts that the Monitor has the right to access without restriction to all Contract documentation of the Principal including that provided by the Bidder(s) / Contractor(s). The Bidder(s)/ Contractor(s) will grant the monitor, upon his request and demonstration of a valid interest, unrestricted and unconditional access to his contract documentation. The same is applicable to Sub-Contractor(s). The Monitor is under Contractual obligation to treat the information and documents of the Bidder(s)/ Contractor(s) / Sub-contractor(s) with confidentiality in line with Non-disclosure agreement.

8.4 The Principal will provide to the Monitor sufficient information about all meetings among the parties related to the contract provided such meetings could have an impact on the contractual relations between the Principal and the Contractor. The parties offer to the Monitor the option to participate in such meetings.

8.5 The role of IEMs is advisory, would not be legally binding and it is restricted to resolving issues raised by an interesting bidder regarding any aspects of the tender which allegedly restricts competition or bias towards some bidder. At the same time, it must be understood that IEMs are not consultant to the management. Their role is independent in nature and the advice once tendered would not be subject to review at the request of the organization.

8.6 for ensuring the desired transparency all complaints received by them and give their recommendations / views to CMD, BHEL at the earliest. They may also send their report directly to the CVO and the commission in case of suspicion of serious irregularities requiring legal / administrative action. IEMs will tender their advice on complaints within 10 days as far as possible.

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8.6 for ensuring the desired transparency all complaints received by them and give their recommendations / views to CMD, BHEL at the earliest. They may also send their report directly to the CVO and the commission in case of suspicion of serious irregularities requiring legal / administrative action. IEMs will tender their advice on complaints within 10 days as far as possible.
8.7 The IEMs would examine all complaints received by them and give their recommendations / views to CMD. BHEL, at the earliest. They may also send their reports directly to the CVO and the commission, in case of suspicion irregularities requiring legal/ administrative action. IEMs will tender their advice on the complaints within 10 days as far as possible/
8.8 The CMD, BHEL shall decide the compensation to be paid to the monitor and its terms and conditions.
8.9 IEM should examine the process integrity they are not expected to concern themselves with fixing of responsibility of the officers. Complaints alleging mala fide on the art of any officer of the organization should be looked into by the CVO of the concerned organization
8.10 If the Monitor has reported to the CMD, BHEL, a substantiated suspicion of an offence under relevant IPC / PC Act, and the CMD, BHEL has not, within reasonable time, taken visible action to proceed against such offence or reported it to the Vigilance Office, the Monitor may also transmit this information directly to the Central Vigilance Commissioner, Government of India.
8.11 The number of Independent External Monitor(s) shall be decided by the CMD, BHEL.
8.12 The word 'Monitor' would include both singular and plural.

Section 9 - Pact Duration:
9.1 This Pact shall be operative from the date of IP is signed by both the parties till the final completion of contract of successful bidder and for all other bidder 6 months after the Contract has been awarded. Issues like warranty guarantee etc., should be outside the purview of IEMs.
9.2 If any claim is made / lodged during this time, the same shall be binding and continue to be valid despite the lapse of this pact as specified as above, unless it is discharged/ determined by the CMD, BHEL.

Section 10 - Other Provisions
10.1 This agreement is subject to Indian Laws and jurisdiction shall be registered office of the Principal, i.e. New Delhi.
10.2 Changes and supplements as well as termination notices need to be made in writing. Side agreements have not been made.
10.3 If the Contractor is a partnership or a consortium, this agreement must be signed by all partners or consortium members.
10.4 Should one or several provisions of this agreement turn out to be invalid, the remainder of this agreement remains valid. In this case, the parties will strive to come to an agreement to their original intentions.

10.5 Only those Bidders / Contractors who have entered into this agreement with the Principal would be competent to participate in the bidding. In other words, entering into this agreement would be a preliminary qualification.

For & On behalf of the Principal (Office Seal) B. MALLIKAMATHI Manager / Purchase / BOI Materials Management Bharat Heavy Electricals Limited Tiruchirappalli, Tamil Nadu - 620 014	<SIGNATURE OF BIDDER / CONTRACTOR> For & On behalf of the Bidder/ Contractor (Office Seal)
Place: Trichy Date: 27.07.2023	Place: Date:
Witness: (Name & Address of Witness) AKHIL. K. DAS Sr. Manager / DM Materials Management / BOI BHEL, TRICHY - 620 014.	Witness: <SIGNATURE OF WITNESS> (Name & Address of Witness)

Letter head of CA/ Statutory auditor / Cost auditor

Ref: ……. Date: ……..

To,

BHARAT HEAVY ELECTRICALS LIMITED,
HIGH PRESSURE BOILER PLANT,
24 BUILDING, BHEL,
TRICHY-620014.

Subject: - Certification regarding local content

Reference: Tender Enquiry No-……

Name of Package: …….

Dear Sir,

We hereby certify that items of …….(package name)……for……(Project Name/Rate Contract)……..offered by M/s ……(bidder's name)…….. having its registered works at …… has local content of ……..%.

Further, M/s ……(bidder's name)…… meets the requirement of minimum local content in line with clause no..... of NIT no…….. dated…… and the Public Procurement (Preference to Make in India), Order 2017 dated-15.06.2017, 28.05.2018 & 29.05.2019.

Thanking You.

For (CA/Cost Firm Name with FRN & Seal)

Chartered/Cost Accountants

(name of Member)

(Membership no.)

(UDIN no.)

GUIDELINES FOR REVERSE AUCTION - 2021

(AA:SSP:RA:05 dated 08.03.2021)

Amendment No.	Date of issue	Remarks
01	10.03.2021	Clause 10.1 modified

SOURCING STRATEGY & POLICY
CORPORATE OPERATIONS MANAGEMENT
BHEL, New Delhi

Guidelines for Reverse Auction – 2021

Doc. No. AA:SSP:RA:05
Dated: 08.03.2021

1.0 Scope

This document describes the guidelines to be followed by each Unit/ Division/ Region for conducting Reverse Auction (RA) for procurement of material/ works/ services. These guidelines will be applicable for all purchases/ contracts to be awarded under Purchase/ Works policy and the RA shall follow the philosophy of English Reverse (No ties). Based on these guidelines, Units/ Divisions/ Regions (hereinafter referred as 'units') may issue their own Departmental Procedures without changing the intent and spirit of the guidelines contained in this document. These guidelines will supersede earlier guidelines issued vide AA:SSP:RA:04 dated 04.03.2020.

English Reverse (No ties) is a type of auction where the starting price and bid decrement are announced before start of online reverse auction. The interested bidders can thereupon start bidding in an iterative process wherein the lowest bidder at any given moment can be displaced by an even lower bid of a competing bidder, within a given time frame. The bidding is with reference to the current lowest bid in the reverse auction. All bidders will see the current lowest quoted price and their rank. The term 'No ties' is used since more than one bidder cannot give an identical price, at a given instant, during the reverse auction. In other words, there shall never be a tie in the bids.

2.0 Intent of Reverse Auction

To derive maximum benefit in cost savings through competitive bidding.

3.0 Upfront declaration in NIT

Wherever it is felt that procurement may be done through Reverse Auction, the bids shall be invited in two parts/ three parts or single part bid (Price Bid) where Techno-Commercial MoU already exists. Wherever, the evaluation is done for individual line item, separate sealed envelope price bid for each line item shall be taken.

Decision to go for RA would be taken before floating of the tender. In case it is decided to go for RA, same shall be declared upfront in NIT by inserting the following **clause:**

"BHEL shall be resorting to Reverse Auction (RA) (Guidelines as available on www.bhel.com) for this tender. RA shall be conducted among the techno-

commercially qualified bidders.

Price bids of all techno-commercially qualified bidders shall be opened and same shall be considered for RA. In case any bidder(s) do(es) not participate in online Reverse Auction, their sealed envelope price bid along with applicable loading, if any, shall be considered for ranking."

4.0 Aspects to be considered for RA

Following aspects may be considered by the competent authority (empowered to approve the ordering) to decide before floating of the tender if RA is to be conducted for that particular tender:

a) Number of techno-commercially qualified bidders in previous tender for same/ similar class of item
b) Price volatility of the item(s) under consideration
c) Past purchase experience of similar item(s)
d) Tender Value of the item(s) under procurement
e) Any other aspect which may be specific to tender

Note: Decision to go for RA or not will be on case to case basis with recorded reasons.

5.0 RA Committee

Purchase/ Tender committee, if already in place, shall also act as RA committee. Purchase representative will be the convener. In case Purchase/ Tender committee has not been formed, the Product Manager/ MM Head/ Department Head, shall constitute RA committee consisting of representatives *(rank as per DoP of tender/ negotiation committee)* from departments of Engineering/ Indenter/ User, Purchase and Finance. This committee will work for a specific tender. The role of RA committee shall be as below:

- To vet the comparative statement comprising sealed envelope price bids received, MSE status, qualification against Public Procurement (Preference to Make in India), Order 2017 (PPP-MII, Order 2017) of all techno-commercially qualified bidders, loading etc. before sending it to the service provider for RA.
- To decide and record the 'Start-Price' and 'Bid Decrement'.
- To observe the RA process and declare RA as successful.

Guidelines for Reverse Auction – 2021

Doc. No. AA:SSP:RA:05
Dated: 08.03.2021

6.0 Business rules for RA

Model Business rules (annexure I) and other annexures II to VI are attached. MM shall prepare and fill in the required details in the annexures at appropriate places like:

- Enquiry/ Request for Quotation (RFQ) number
- Name and Addresses of the bidders
- Items description, quantities/ weight, Specification
- Date and time of opening and closing of RA
- Extension conditions
- Loading Criteria/ Formulae
- Foreign Exchange (FE) rates for evaluation
- Taxes & Duties
- Freight & Insurance
- Bidders' training, if required, etc.

The calculation sheet e.g. excel sheet (which will help to arrive at 'Total Cost to BHEL') which is communicated to respective bidders of RA, will be prepared by MM and vetted by Finance. This calculation sheet will be finalized based on the evaluation criteria specified in the NIT and will be same based on which sealed envelope price bids have been evaluated.

MM shall issue a mandate (annexure II) to the service provider covering business rules etc. and inform about event, calculation sheet etc. to all techno-commercially accepted bidders.

7.0 Role of Service Provider

- Acknowledge the receipt of mandate from BHEL.
- Contact the bidders, provide business rules and train them, as required.
- Get the process compliance form (annexure III) signed by all the participating bidders before RA event.
- Conduct the event as per the contract and business rules.
- Submit the Login Reports, Results, History sheet and authorized final bid from the bidders.
- To obtain price breakup from successful bidder and submit the same to BHEL.

8.0 Start price for RA shall be lowest of sealed envelope price bid.
Note: Wherever more than one lowest sealed envelope price bids are identical, RA committee shall declare the start price by reducing the lowest sealed envelope price bid by maximum of one decrement.

Guidelines for Reverse Auction – 2021

Doc. No. AA:SSP:RA:05
Dated: 08.03.2021
amdt01 dated 10.03.2021

9.0 Witnessing Auction

Access to witness the RA shall be available to the concerned officials of BHEL (Indenter/ Finance Officials/ Purchase Officials), nominated by Head MM/ Purchase/ Contracts.

10.0 Reverse Auction Process

10.1 Reverse Auction will be conducted if two or more bidders are techno-commercially qualified. In case of two or three qualified bidders, there shall be no elimination of H1 bidder (whose quote is highest in sealed envelope price bid). In case of four qualified bidders, the H1 bidder shall be eliminated whereas in case of five qualified bidders, H1 & H2 bidders shall be eliminated. However, in case of six or more qualified bidders are available, RA would be conducted amongst first 50% of the bidders arranged in the order of prices from lowest to highest. Number of bidders eligible for participating in RA would be rounded off to next higher integer value if number of qualified bidders is odd (e.g. if 7 bids are qualified, then RA will be conducted amongst lowest four bidders). However, there will be no elimination of qualified bidders who are MSE or qualifying under PPP-MII, Order 2017, irrespective of the number of bidders qualifying techno-commercially.

In case of multiple H1 bidders, all H1 bidders (excluding MSEs and bidders qualifying under PPP-MII, Order 2017) shall be removed provided minimum two bidders remain in fray, else no H1 removal.

10.2 The lowest bidder in sealed envelope price bid shall be shown as current L1 automatically by the system. System shall have the provision to indicate this bid as current L1 for further bidding. This price can be displaced by an even lower bid of a competing bidder.

If the start price is lower than the lowest sealed envelope price bid (in line with clause 8.0), on acceptance of such start price by any bidder this bid would be indicated as current L1 for further bidding. However, if no bidder accepts the start price, RA shall be treated as cancelled for the respective line item(s) and the tender shall be processed accordingly.

In case of no further bidding, RA will be deemed to have been successful with current L1 bidder. During RA, all bidders will see their rank and current L1 price on the screen. Once the RA is done, the ranking status would be based on the last quoted price of the bidder(s) irrespective of the quote received in RA or sealed envelope price bid.

10.3 No bidder shall be allowed to lower its bid below the current L1 by more than 5 decrements at one go.

11.0 Processing of case after RA

11.1 Wherever the evaluation is done on total cost basis, after Reverse Auction, prices of individual line items shall be reduced on pro-rata basis.

11.2 In case of splitting requirement, bidders who were removed from participation in RA may also be considered for counter offer if the pre-stated (NIT) numbers of suppliers do not accept the counter offer. However, principle of splitting to N-1 bidder shall be maintained in line with extant Purchase Policy/ Work Policy.

11.3 Reasonability of rates received through RA to be ascertained as per extant Policy provisions.

12.0 Payment to the Service Provider

Payment shall be made as per the agreed terms of the Framework Agreement with the service provider based on the mandate issued and service provider's invoice certified by the respective MM. If the RA event is conducted as per the mandate given by BHEL and agreed procedure, payment shall be made to the service provider irrespective of the auction outcome.

13.0 Others

13.1 If RA is being conducted for multiple line items and L1 is to be decided for individual items, number of items in single screen be restricted to 10 (ten) to avoid scrolling by the bidders.

13.2 In case of enquiry through e-Procurement, the sealed electronic price bid (e-bid) is to be treated as sealed envelope price bid.

13.3 BHEL will inform bidders the details of service provider who will provide business rules, all necessary training and assistance before commencement of online bidding.

13.4 Bidders will be advised to read the 'Business Rules' indicating details of RA event carefully, before reverse auction event.

13.5 Model annexures are enclosed. However, to suit specific requirement of the Units changes in the annexures may be done with the approval of respective MM Head of Unit. Such changes shall specifically be communicated to the service provider before the RA event.

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Guidelines for Reverse Auction – 2021

Doc. No. AA:SSP:RA:05
Dated: 08.03.2021

Business Rules for Reverse Auction

Annexure – I

This has reference to tender no ***{tender number….date***…}. BHEL shall finalise the Rates for the supply of {*item name}* through Reverse Auction mode. BHEL has made arrangement with M/s. {*Service provider},* who shall be BHEL's authorized service provider for the same. Bidders should go through the instructions given below and submit acceptance of the same.

The technical & commercial terms are as per (a) BHEL Tender Enq. No. {…} dated {...}, (b) Bidders' technical & commercial bid (in case of two part bid) and (c) subsequent correspondences between BHEL and the bidders, if any.

1. **Procedure of Reverse Auctioning**

   i. Price bids of all techno-commercially qualified bidders shall be opened.

   ii. **Reverse Auction**: The 'bid decrement' will be decided by BHEL.

   iii. The lowest bidder in sealed envelope price bid shall be shown as current L1 automatically by the system and no acceptance of that price is required. System shall have the provision to indicate this bid as current L1.

   iv. Bidders by offering a minimum bid decrement or the multiples thereof can displace a standing lowest bid and become "L1" and this continues as an iterative process. However, no bidder shall be allowed to lower its bid below the current L1 by more than 5 decrements at one go.

   v. After the completion of the reverse auction, the Closing Price shall be available for further processing.

   vi. Wherever the evaluation is done on total cost basis, after Reverse Auction, prices of individual line items shall be reduced on pro-rata basis.

2. **Schedule for reverse auction:** The Reverse Auction is tentatively scheduled on *{date}: ;{start time}: ;{Close Time: }*.

3. **Auction extension time:** If a bidder places a bid in the last {…} minutes of closing of the Reverse Auction and if that bid gets accepted, then the auction's duration shall get extended automatically for another {…} minutes,

for the entire auction (i.e. for all the items in the auction), from the time that bid comes in. Please note that the auto-extension will take place only if a bid comes in those last {…} minutes and if that bid gets accepted as the lowest bid. If the bid does not get accepted as the lowest bid, the auto-extension will not take place even if that bid might have come in the last {…} minutes. In case, there is no bid in the last {…} minutes of closing of Reverse Auction, the auction shall get closed automatically without any extension. However, bidders are advised not to wait till the last minute or last few seconds to enter their bid during the auto-extension period to avoid complications related with internet connectivity, network problems, system crash down, power failure, etc.

The above process will continue till completion of Reverse Auction.

Complaints/ Grievances, if any, regarding denial of service or any related issue should be given in writing thru e-mail/ fax to M/s. {Service provider} with a copy to BHEL within 15 minutes prior to initial closing time of Reverse Auction.

4. **Bid price:** The Bidder has to quote the {……} Price inclusive of Packing & Forwarding charges, all the routine & type tests as per tender scope, taxes, duties, freight and insurance as specified in tender document. including loading (if indicated by BHEL due to deviations in technical/ commercial terms) for the Items specified. Details are as shown in Excel Sheet for calculation of total cost to BHEL (To be specified by Unit as per NIT conditions).

5. **Bidding currency and unit of measurement:** Bidding will be conducted in *Indian Rupees* per *Unit* of the material as per the specifications {...}

   In case of foreign currency bids, exchange rate (TT selling rate of State Bank of India) as on scheduled date of tender opening (Part-I bid) shall be considered for conversion in Indian Rupees. If the relevant day happens to be a Bank holiday, then the forex rate as on the previous bank (SBI) working day shall be taken.

6. **Validity of bids:** Price shall be valid for {… *days}* from the date of reverse auction. These shall not be subjected to any change whatsoever.

Business Rules for Reverse Auction

Annexure – I

7. **Lowest bid of a bidder**: In case the bidder submits more than one bid, the lowest bid at the end of Reverse Auction will be considered as the bidder's final offer to execute the work.

8. Unique user IDs shall be used by bidders during bidding process. All bids made from the Login ID given to the bidders will be deemed to have been made by the bidders/ bidders' company.

9. **Post auction procedure**: BHEL will proceed with the Lowest Bid in the Reverse Auction for further processing.

10. Any commercial/ technical loading shall be separately intimated to respective bidders prior to RA. The excel sheet provided in this regard shall cover all these aspects. Commercial/ technical loading if any, shall be added by the respective bidder in its price during Reverse Auction. Modalities of loading & de-loading shall be separately intimated to the bidders. The responsibility for correctness of total cost to BHEL shall lie with the bidders.

11. Reverse auction shall be conducted by BHEL (through M/s {*Service Provider*}), on pre-specified date, while the bidders shall be quoting from their own offices/ place of their choice. Internet connectivity shall have to be ensured by bidders themselves.

    During the RA process if a bidder is not able to bid and requests for extension of time by FAX/ email/ phone then time extension of additional 15 minutes will be given by the service provider provided such requests come before 5 minutes of auction closing time. However, only one such request per bidder can be entertained.

    In order to ward-off contingent situation of connectivity failure bidders are requested to make all the necessary arrangements/ alternatives whatever required so that they are able to circumvent such situation and still be able to participate in the reverse auction successfully. Failure of power or loss of connectivity at the premises of bidders during the Reverse auction cannot be the cause for not participating in the reverse auction. On account of this, the time for the auction cannot be extended and neither BHEL nor M/s. {*Service provider*} is responsible for such eventualities.

Business Rules for Reverse Auction

Annexure – I

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12. Proxy bids: Proxy bidding feature is a pro-bidder feature to safe guard the bidder's interest of any internet failure or to avoid last minute rush. The proxy feature allows bidders to place an automated bid in the system directly in an auction and bid without having to enter a new amount each time a competing bidder submits a new offer. The bid amount that a bidder enters is the minimum that the bidder is willing to offer. Here the software bids on behalf of the bidder. This obviates the need for the bidder participating in the bidding process until the proxy bid amount is decrementally reached by other bidders. When proxy bid amount is reached, the bidder (who has submitted the proxy bid) has an option to start participating in the bidding process.

The proxy amount is the minimum amount that the bidder is willing to offer. During the course of bidding, the bidder cannot delete or change the amount of a proxy bid.

Bids are submitted in decrements (decreasing bid amounts). The application automates proxy bidding by processing proxy bids automatically, according to the decrement that the auction originator originally established when creating the auction, submitting offers to the next bid decrement each time a competing bidder bids, regardless of the fact whether the competing bids are submitted as proxy or standard bids. However, it may please be noted that if a manual bid and proxy bid are submitted at the same instant manual bid will be recognized as the L1 at that instant.

In case of more than one proxy bid, the system shall bid till it crosses the threshold value of 'each lowest proxy bid' and thereafter allow the competition to decide the final L1 price.

Proxy bids are fed into the system directly by the respective bidders. As such this information is privy only to the respective bidder(s).

13. Bidders are advised to get fully trained and clear all their doubts such as refreshing of Screen, quantity being auctioned, tender value being auctioned etc from M/s {*Service provider*}.

14. M/s. {*Service provider}*, shall arrange to demonstrate/ train the bidder or bidder's nominated person(s), without any cost to bidders. M/s. {*Service provider}*, shall also explain the bidders, all the business rules related to the

Reverse Auction. Bidders are required to submit their acceptance to the terms/ conditions/ modalities before participating in the Reverse Auction in the process compliance form as enclosed. Without this, the bidder will not be eligible to participate in the event.

15. Successful bidder shall be required to submit the final prices (L1) in prescribed format (Annexure – VI) for price breakup, quoted during the Reverse Auction, duly signed and stamped as token of acceptance without any new condition (other than those already agreed to before start of auction), after the completion of auction to M/s. {*Service provider*} besides BHEL within two working days of Auction without fail.

16. Any variation between the final bid value and that in the confirmatory signed price breakup document will be considered as tampering the tender process and will invite action by BHEL as per extant guidelines for suspension of business dealings (as available on www.bhel.com).

17. Bidders' bid will be taken as an offer to execute the work/ supplies the item as per enquiry no. *{…}* dt. *{…}*. Bids once made by the bidder, cannot be cancelled/ withdrawn and bidder shall be bound to execute the work as mentioned above at bidder's final bid price. Should bidder back out and not execute the contract as per the rates quoted, BHEL shall take action as per extant guidelines for suspension of business dealings (as available on www.bhel.com).

18. Bidders shall be able to view the following on their screen along with the necessary fields during Reverse Auction:

a. Leading (Running Lowest) Bid in the Auction (only total price of package)
b. Bid Placed by the bidder
c. Start Price
d. Decrement value
e. Rank of their own bid during bidding as well as at the close of auction.

19. BHEL's decision on award of contract shall be final and binding on all the Bidders.

20. BHEL reserves the right to extend, reschedule or cancel the Reverse Auction process at any time, before ordering, without assigning any reason, with

intimation to bidders.

21. BHEL shall not have any liability to bidders for any interruption or delay in access to the site irrespective of the cause. In such cases, the decision of BHEL shall be binding on the bidders.

22. Other terms and conditions shall be as per bidder's techno-commercial offers and other correspondences, if any, till date.

23. If there is any clash between this business document and the FAQ available, if any, in the website of M/s. {*Service provider}*, the terms & conditions given in this business document will supersede the information contained in the FAQs. Any changes made by BHEL/ service provider (due to unforeseen contingencies) after the first posting shall be deemed to have been accepted if the bidder continues to access the portal after that time.

24. Bidder shall not divulge either his Bids or any other exclusive details of BHEL to any other party. If the Bidder or any of his representatives are found to be involved in Price manipulation/ cartel formation of any kind, directly or indirectly by communicating with other bidders, action *as per extant BHEL guidelines for suspension of business dealings (as available on www.bhel.com)*, shall be initiated by BHEL.

Mandate to Service Provider

Annexure – II

Ref : **Date :**

To,
M/s. {*Service provider*}

Sub: Providing of Services for Reverse Auction.
Ref: No {…} date {…}

Dear Sir,

Please conduct Reverse Auction as per the following details:

- **Scope:** Auction event management with training of BHEL and its bidders.
- Seek process compliance form from all the bidders provided by BHEL before start of RA event. In case of postponement of event to some other date, ensure acknowledgement from each bidder.
- Price: Rs. {……}/- . No other duties, Taxes, levies etc. except service tax @ {……}% shall be payable for conducting reverse auction. This price is firm.
- Payment Terms: 100% payment after successful completion of Auction.
- Start Price: L1 as per the CST (Comparative statement) of the envelope sealed bid shall be marked as L1 automatically by the system at the start of the auction, provided the L1 bidder participates in the RA by submitting the process compliance form. In case the Process Compliance form is not submitted by the L1 bidder, still its price has to be mapped as start price of RA for further bidding in RA.
  Wherever there are more than one L1 in CST, the start price shall be the L1 price reduced by one decrement and the same shall be accepted by the interested bidder(s) for start of RA process.
- Completion of Auction Process: The auction process shall be deemed to have been successfully completed on receipt and acceptance of final report including hard copy/ email of the final bid with price break up, duly signed by the successful bidder who has participated in the reverse auction. The bill shall be submitted along with the completion report to the undersigned.
- Business Rules of the Reverse Auction are as per *Annexure – I*.
- The list of bidders with their contact details is given in *Annexure – IV*. and the details of the item (s) to be Reverse Auctioned are as per *Annexure – V*.
- Please acknowledge receipt of this letter order and also confirm that final report (duly signed and stamped by M/s. {*Service provider*}) including hard copy/ email of the final bid with breakup of prices duly signed by the successful bidder (duly endorsed by M/s. {*Service provider*}) shall be submitted within **four** working days of conclusion of auction.

Yours sincerely,

(for and on behalf of BHEL)

Mandate to Service Provider

Annexure – II

Note:

If the event has been conducted as per mandate, you shall be paid irrespective of RA outcome.

Buyer Name	- *Name of BHEL Unit* - *Full postal address* - *Fax:* - *Phone:* - *Email:* - *Contact person name:* - *Phone:* -
Auction to be conducted by	- *Name of Service provider* - *Full postal address* - *Fax:* - *Phone:* - *Email:* - *Contact person name:* - *Phone:* -
Date of Auction	- *Date of Auction* - *Reverse auction time:* - *Auction website:* -
Documents Attached: **(To be sent to the bidders)**	1) Business rules for Reverse Auction (*Annexure-I*) 2) Process Compliance Form (*Annexure-III*) 3) Details of item (s) to be Reverse Auctioned (*Annexure-V*) 4) Post RA Price confirmation by bidder (*Annexure-VI*)

Process Compliance Form

Annexure – III

(The bidders are required to print this on their company's letterhead and sign, stamp before RA)

To
- M/s. {*Service provider*
- *Postal address}*

Sub: Agreement to the Process related Terms and Conditions

Dear Sir,

This has reference to the Terms & Conditions for the Reverse Auction mentioned in the RFQ document for {Items} against BHEL enquiry/ RFQ no.{……} dt. {…….} This letter is to confirm that:

1) The undersigned is authorized official/ representative of the company to participate in RA and to sign the related documents.
2) We have studied the Reverse Auction guidelines (as available on www.bhel.com), and the Business rules governing the Reverse Auction as mentioned in your letter and confirm our agreement to them.
3) We also confirm that we have taken the training on the auction tool and have understood the functionality of the same thoroughly.
4) We also confirm that, in case we become L1 bidder, we will FAX/ email the price confirmation & break up of our quoted price as per *Annexure - VI* within **two** working days (of BHEL) after completion of RA event, besides sending the same by registered post/ courier both to M/s. BHEL and M/s. {*Service provider.}*

We, hereby confirm that we will honor the Bids placed by us during the auction process.

With regards
Signature with company seal
Name –
Company / Organization
Designation within Company / Organization
Address of Company / Organization

- **Sign this document and FAX/ email it to M/s *{Service provider}* at *{……..}* prior to start of the Event.**

List of bidders and their address/ contact person details

Annexure – IV

Sl. No.	Address	Contact Person
1	- *Name of bidder* - *Full postal address* - *Fax:* - *Phone:* - *Email:*	- *Contact person name:* - *Phone:* - *Email:*
2		
3		
..		
..		

Details of item (s) for Reverse Auction

Annexure – V

1. ***{Details of items including quantity, specification, Enquiry no. & date***

   1.
   2.
   ..

   ..
   ..
   }

RA price confirmation and breakup

(To be submitted by L1 bidder after completion of RA)

Annexure – VI

To

- M/s. *Service provider*
- *Postal address*

CC: M/s BHEL
{Unit-
Address-}

Sub: **Final price quoted during Reverse Auction and price breakup**

Dear Sir,

We confirm that we have quoted.

Rs.{____in value & in words_____} for item(s) covered under tender enquiry No. {...} dt.{…}

Total price of the items covered under above cited enquiries is inclusive of {*Packing & forwarding, GST, E.D., C.S.T., freight and insurance charges up to {……} District,{……..} State and Type Test Charges etc., (exclusive of service tax), other as per NIT*}

as our final landed prices as quoted during the Reverse Auction conducted today {*date*} which will be valid for a period of {___ **in nos. & in words** ___} days.

The price break-up is as given below.

========

Total - Rs. **in value & in words**

========

Yours sincerely,

For _____

Name:
Company:
Date:
Seal:

THIRD PARTY NON-DISCLOSURE AGREEMENT

I, _____, on behalf of the _____ (Name of Company), acknowledge that the information received or generated, directly or indirectly, while working with BHEL, Trichy on contract is confidential and that the nature of the business of the BHEL, Trichy is such that the following conditions are reasonable, and therefore:

I warrant and agree as follows:

I, or any other personnel employed or engaged by our company, agree not to disclose, directly or indirectly, any information related to the BHEL, Trichy Without restricting the generality of the foregoing, it is agreed that we will not disclose such information consisting but not necessarily limited to:

- Technical information: Methods, drawings, processes, formulae, compositions, systems, techniques, inventions, computer programs/data/configuration and research projects.

- Business information: Customer lists, project schedules, pricing data, estimates, financial or marketing data,

On conclusion of contract, I, or any other personnel employed or engaged by our company shall return to BHEL, Trichy all documents and property of BHEL, Trichy, including: drawings, blueprints, reports, manuals, computer programs/data/configuration, and all other materials and all copies thereof relating in any way to BHEL, Trichy 's business, or in any way obtained by me during the course of contract. I further agree that I, or any others employed or engaged by our company shall not retain copies, notes or abstracts of the foregoing.

This obligation of confidence shall continue after the conclusion of the contract also.

I acknowledge that the aforesaid restrictions are necessary and fundamental to the business of the BHEL, Trichy and are reasonable given the nature of the business carried on by the BHEL, Trichy I agree that this agreement shall be governed by and construed in accordance with the laws of country.

I enter into this agreement totally voluntarily, with full knowledge of its meaning, and without duress.

Dated at _____, this ____ day of _____, 20__.

Name

Company

Signature