

 	Industrial Systems Group (Projects Purchase/Works-1)	Enq Ref- 77/16/6287/SK Date: 11.01.2017	2 X 660 MW Meja Thermal Power Project Cable Trays & Accessories Lot-2
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The following clause shall supersede the clause no 2.1 of INSTRUCTIONS TO BIDDERS of GCC:

Tenders shall be submitted in Two parts on or before the Due Date and time indicated on the portal.

PART I : Technical & Commercial bid Comprising of following:

1. Annexure-I to GCC (Mandatory)

2. General conditions of contract, GCC (Mandatory)

3. Special conditions of contract, SCC (Mandatory)

4. Technical offer, comprising of technical specification and other documents as asked in technical specifications e.g. drawings, test report etc. (Mandatory)

5. Annexure-III to GCC (Declaration about completeness of price) - (Mandatory)

6. Annexure-XII to GCC (Optional)

NO DEVIATION CERTIFICATE FOR COMMERCIAL TERMS AND CONDITIONS as per General Conditions of Contracts (GCC, Rev.01), Special Conditions of Contracts and RFQ in case of no deviations

7. Integrity Pact Agreement (Mandatory if shown on portal, not applicable otherwise)

8. Unpriced copy of Annexure-II, cost of withdrawal of deviation (Mandatory)

Any deviation not mentioned in un-priced copy of this format, but mentioned in the priced copy, shall not at all be accepted.

Bidder to note all the points mentioned in Notes of Annexure-II to GCC Rev.01.

Cost of withdrawal for the deviations, for which, the Cost of withdrawal is not specified, shall be taken as NIL.

9. Unpriced copy of price format (Mandatory)

Tenderer must submit UN-PRICED Price format duly filled mentioning the word QUOTED in place of actual price in each row/column. The actual price is to be filled in separately and submitted in price bid part.

Prices are to be quoted separately for each item as per price format. In no event, bidder should club cost of more than one item.

The vendors shall be forced by the system to upload the above documents which are marked mandatory. All the documents are to be stamped and uploaded. The Annexure mentioned at Sl no 2, 6 & 7 (if applicable), above should be duly filled by the bidder and should be printed on their letter head before uploading.

PART II : Price bid Containing

1. Prices as per price format,

2. Cost of withdrawal of deviation as per Annexure-II, to be uploaded strictly as per Price Schedule of BHEL for complete scope of Tender Enquiry.

NOTE: Offers are liable to be rejected for changes made by vendors in the Price Schedule, except those specified in the unpriced bid and accepted by Purchaser.

 	Industrial Systems Group (Projects Purchase/Works-1)	Enq Ref- 77/16/6287/SK Date: 11.01.2017	2 X 660 MW Meja Thermal Power Project Cable Trays & Accessories Lot-2
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The clause nos 2.6 & 2.7 of INSTRUCTIONS TO BIDDERS of GCC shall not be applicable for this tender.

1. Tenders shall be submitted strictly in accordance with the requirements of the above tender documents. In case of deviations (Technical/ Commercial), the same shall be highlighted separately giving clause references along with the Cost of withdrawal of Deviations as per Annexure-II to GCC Rev. 01 of DEVIATION SHEET (COST OF WITHDRAWAL) along with reasons for taking such deviations.

Bidder to note all the points mentioned in Annexure-II to GCC Rev.01. Cost of withdrawal for the deviations, for which, the "Cost of withdrawal" is not specified, shall be taken as NIL.

2. Purchaser shall be under no obligation to accept the lowest or any other tender and shall be entitled to accept or reject any/all tender(s) in part or full without assigning any reason whatsoever.

3. Bidders shall submit all their queries/clarifications 4 days before the due date after which it will be presumed that there are no queries/clarifications and BHEL will be under no obligation to reply queries/clarifications raised after the date.

4. Bidder to note that this is a conditional enquiry for those who are not registered with BHEL ISG for the subject item / package, and the price bid (Part-II) opening/RA shall be subject to following criterion:

Registration of bidder to BHEL-ISG Product Material Directory with permanent registration code.

For this purpose you are requested to please refer our website

http://www.bhel.com/vendor_registration/vendor.php and visit Online Supplier

Registration Portal to get yourself registered accordingly before the price bid opening.

Note: Bidders, who are not registered with BHEL-ISG for the tendered material are requested to submit the copy of acknowledgement receipt for successful submission of online vendor registration application along with the Part-1 bid.

Vendors who are already registered with BHEL ISG for the tendered materials are requested to submit the copy of registration certificate issued by BHEL ISG.

5. Bidders to indicate their import content (CIF), if any, in the format provided along with the price schedule given with NIT

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6. BHEL reserves the right to go for Reverse Auction (RA) (Guidelines as available on www.bhel.com) instead of opening the sealed envelope price bid (price format submitted along with the offer in case of e-procurement), submitted by the bidder. This will be decided after techno-commercial evaluation. Bidders to give their acceptance with the offer for participation in RA. Non-acceptance to participate in RA may result in non-consideration of their bids, in case BHEL decides to go for RA.

Those bidders who have given their acceptance to participate in Reverse Auction will have to necessarily submit 'Process compliance form' (to the designated service provider) as well as 'Online sealed bid' in the Reverse Auction. Non-submission of 'Process compliance form' or 'Online sealed bid' by the agreed bidder(s) will be considered as tampering of the tender process and will invite action by BHEL as per extant guidelines for suspension of business dealings with suppliers/ contractors (as available on www.bhel.com).

The bidders have to necessarily submit online sealed bid less than or equal to their envelope sealed price bid (price format submitted along with the offer in case of e-procurement) already submitted to BHEL along with the offer. The envelope sealed price bid (price format submitted along with the offer in case of e-procurement) of successful L1 bidder in RA, if conducted, shall also be opened after RA and the order will be placed on lower of the two bids (RA closing price & envelope sealed price (price format submitted along with the offer in case of e-procurement)) thus obtained. The bidder having submitted this offer specifically agrees to this condition and undertakes to execute the contract on thus awarded rates.

If it is found that L1 bidder has quoted higher in online sealed bid in comparison to envelope sealed bid (priced format submitted along with the offer in case of e-procurement) for any item(s), the bidder will be issued a warning letter to this effect. However, if the same bidder again defaults on this count in any subsequent tender in the unit, it will be considered as fraud and will invite action by BHEL as per extant guidelines for suspension of business dealings with suppliers/ contractors (as available on www.bhel.com).

7. All the above Tender Documents shall automatically become a part of the Order/Contract after its finalization.

8. Order of Precedence

In the event of any ambiguity or conflict between the Tender Documents, the order of precedence shall be in the order below:

1. Amendments/Clarifications/Corrigenda/Errata etc issued in respect of the tender documents by BHEL.

2. Price Schedule

3. Special Conditions of Contract (SCC)

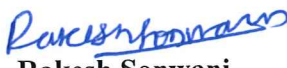
4. Technical specification & scope of work

5. General Conditions of Contract (GCC)

BHEL- ISG, BANGALORE 	Coal Handling Plant for 2x660MW Meja Thermal Power Project. Technical Enquiry Specification for Cable trays & accessories Customer : Meja Urja Utpadan Nigam Pvt. Ltd. (A Joint Venture between NTPC Ltd. & Govt. of U.P./Uttar Pradesh Rajya Vidyut Utpadan Nigam Limited)	DOCUMENT NUMBER IS-1-11-2007/137/Cable trays & accessories LOT2
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Technical Enquiry specification for CABLE TRAYS & ACCESSORIES

SI. No.	DESCRIPTION	SHEET No.		
I	GENERAL SITE INFORMATION	02	of	12
II	APPLICABLE STANDARDS	03	of	12
III	SCOPE OF SUPPLY	04	of	12
IV	TECHNICAL SPECIFICATION	06	of	12
V	INSPECTION & TESTING	10	of	12
VI	TECHNICAL DOCUMENTATION	12	of	12

Prepared By	Checked by	Approved by
 Rakesh Sonwani	 Rakesh Sonwani	 L. Bindu

BHEL- ISG, BANGALORE 	Coal Handling Plant for 2x660MW Meja Thermal Power Project. Technical Enquiry Specification for Cable trays & accessories Customer : Meja Urja Utpadan Nigam Pvt. Ltd. (A Joint Venture between NTPC Ltd. & Govt. of U.P./Uttar Pradesh Rajya Vidyut Utpadan Nigam Limited)	DOCUMENT NUMBER IS-1-11-2007/137/Cable trays & accessories LOT 2
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SECTION – I

1.00.00 GENERAL SITE INFORMATION

1.01.01 BACKGROUND

The present proposal is for setting up of a coal based Meja Thermal Power Project (2x660 MW) be owned by Meja Urja Utpadan Nigam Private Limited, which is a Joint venture between NTPC and Govt. of U.P/ Uttar Pradesh Rajya Vidyut Utpadan Nigam Limited (UPRVUNL).

1.01.02 LOCATION AND APPROACH

The proposed site for Meja TPP is to be located near Kohdar, Mai khurd and Patai Dandi villages of Meja Tehsil in Allahabad district of Uttar Pradesh, south west of Allahabad-Mirzapur highway with having coordinates as latitude 25°-09'-10" N and longitude 81°-56'-50" E respectively. The site is approachable from Meja-Khiri road on Allahabad-Mirzapur highway at a distance of about 45km from Allahabad. Nearest railway station is at Meja Road RS on Allahabad- Mughal Sarai section of North Central Railway at about 20 Kms from the project site.

1.01.03 Air Port

Meja project site is located about 45 kms from Allahabad. Nearest commercial airport is Allahabad at about 50 km. Lucknow airport is situated at a distance of about 250 km and Varanasi airport at about 120 km.

1.01.04 LAND

About 2500 acres of land (mostly barren, rocky and highly undulating terrain to the tune of 10 to 15 Metres and not prone to flood) has been identified for Main Plant.

1.01.05 Railway Siding

Employer intends to construct the Railway siding to project site from the nearest existing railway line. However, the same may not be available to the bidder for his use to transport equipment & material.

1.02.00 SITE CONDITIONS

Maximum ambient temperature	- 50 deg C
Design ambient temperature	- 50 deg C
Maximum relative humidity	- 95 %
Atmosphere	- Highly polluted with coal dust
Altitude above MSL	- Less than 1000 metres

Maximum ambient temperature and maximum relative humidity are not likely to occur simultaneously.

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1.03.00 POWER SUPPLY SYSTEM

1.03.01 11/3.3KV System and LT system.

System voltage	- 11/3.3 KV	+/- 6 %
System voltage	- 415/240 V	+/- 10 %
System frequency	- 50 Hz	+3/-5 %
Combined Variation	- +/- 10 %	
System fault level (11/3.3Kv)	- 40 KA RMS for 1 second	
System fault level (415V)	- 45 KA RMS for 1 second	
System earthing(415V)	- Solidly Grounded	

1.03.02 Ambient Conditions

Cable trays, fittings & accessories shall be suitable for operating satisfactorily in humid and dusty(coal & ash) atmosphere found in Thermal Power plants. Service conditions shall be as specified above.

1.03.03 AUXILLARY VOLTAGE SYSTEM

Control Voltage

AC	:	110V +/- 6 %
		50 Hz +3 /- 5 %
DC	:	240 V

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SECTION II: APPLICABLE STANDARDS

- 2.01.01 The tray shall conform to the latest Indian Electricity Rules as regards safety, earthing and other essential provision specified therein for installation and operation of electrical plant and equipment.
- 2.01.02 The tray and hardware shall be manufactured and tested in accordance with following Standards.
1. IS:4759 - 1984
 2. IS 1079 – Grade O
 3. IS 1852
 4. IS:1573 - 1985
 5. IS:2633 - 1986
 6. IS:8500 - 1992
 7. IS: 1367- 1983
 8. IS:4759 – 1984
 9. IS:2629 – 1985
 10. IS:2633 – 1986
 11. Indian Electricity Rules 1956

This above list is not exhaustive. Standards not listed above but are applicable also to be followed to meet requirement.

SECTION – III: SCOPE OF WORK

- 3.01.00: Description**
 This specification defines the requirement of design, manufacture, testing at work shop and supply of Hot dip Galvanized Ladder type with perforated rungs and its accessories. **Galvanization to be carried out at NTPC approved sources. Galvanizer's name shall be mentioned in QAP**
- 3.01.01 Cable trays shall be complete with matching fittings (like elbows), accessories (side coupler plates, etc). and hardware (bolts, nuts, washers etc.) as required.
- 3.01.02 Cable trays, fittings and accessories shall be fabricated out of rolled mild steel sheets free from flaws such as laminations, rolling marks, pitting etc. These (including hardware) shall be hot dip galvanized as per relevant IS.
- 3.01.03 Cable trays shall have standard width of 150 mm, 300 mm & 600 mm and standard lengths of 2.5 metre. Minimum thickness of mild steel sheets used for fabrication of cable trays and fittings shall be 2 mm. The thickness of side coupler plates shall be minimum 3 mm. Typical details of cable trays, fittings and accessories are shown in the enclosed drawings

BHEL- ISG, BANGALORE 	Coal Handling Plant for 2x660MW Meja Thermal Power Project. Technical Enquiry Specification for Cable trays & accessories	DOCUMENT NUMBER
	Customer : Meja Urja Utpadan Nigam Pvt. Ltd. (A Joint Venture between NTPC Ltd. & Govt. of U.P./Uttar Pradesh Rajya Vidyut Utpadan Nigam Limited)	IS-1-11-2007/137/Cable trays & accessories LOT 2

3.02.00 SCOPE OF SUPPLY:

SL.NO	DESCRIPTION	Quantity in nos.
3.0	A. Design, manufacture, Testing and supply of Hot dip Galvanized pre fabricated Ladder cable trays, perforated cable trays , fittings and accessories of width size 600 mm, 300 mm ,150mm of standard length 2500 mm along with coupler plates, earth continuity connections, nuts, bolts, washers etc. Typical drawing enclosed for reference. Details of items are as follows. a. Cable trays shall be fabricated from min 2mm thick hot rolled mild steel sheets. b. Coupler plate shall be 3mm thick c. Trays, bends and covers shall be hot dip galvanized after fabrication. d. All nuts and bolts shall be zinc plated.	
3.1	Ladder type cable tray (2.5m length), 600mm width, 100mm depth with 2 nos coupler plates per tray and necessary hardware such as nuts, bolts, washer etc. Each tray shall be supplied with 16 sets of hardware; each set consisting of one no. M8x25 long hex bolt, nut, 2 nos spring washer , 2 nos plain washers etc	4700 nos
3.2	Ladder type cable tray (2.5m length), 150mm width, 100mm depth with 2 nos coupler plates per tray and necessary hardware such as nuts, bolts, washer etc. Each tray shall be supplied with 16 sets of hardware; each set consisting of one no. M8x25 long hex bolt, nut, 2 nos. spring washer, 2 nos plain washers etc	800 nos
3.4	Perforated type cable tray (2.5m length), 600mm width, 100mm depth with 2 nos coupler plates per tray and necessary hardware such as nuts, bolts, washer etc. Each tray shall be supplied with 16 sets of hardware; each set consisting of one no. M8x25 long hex bolt, nut, 2 nos. spring washer, 2 nos plain washers etc	300 nos
3.5	Perforated type cable tray (2.5m length), 300mm width, 100mm depth with 2 nos coupler plates per tray and necessary hardware such as nuts, bolts, washer etc. Each tray shall be supplied with 16 sets of hardware; each set consisting of one no. M8x25 long hex bolt, nut, 2 nos. spring washer, 2 nos plain washers etc	2000 nos

Note :

- 1) Length of different size tray can vary as per requirement. Unit rate shall be indicated for all items. For variation in quantities, unit rate shall be applicable.
- 2) Typical drawing received from NTPC is enclosed for reference. Supplier shall follow these drawings in general.
- 3) **Galvanization to be carried out at NTPC approved sources. Galvanizer's name shall be mentioned in QAP.**

BHEL- ISG, BANGALORE 	Coal Handling Plant for 2x660MW Meja Thermal Power Project. Technical Enquiry Specification for Cable trays & accessories Customer : Meja Urja Utpadan Nigam Pvt. Ltd. (A Joint Venture between NTPC Ltd. & Govt. of U.P./Uttar Pradesh Rajya Vidyut Utpadan Nigam Limited)	DOCUMENT NUMBER IS-1-11-2007/137/Cable trays & accessories LOT 2
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SECTION – IV

DETAILED TECHNICAL SPECIFICATION

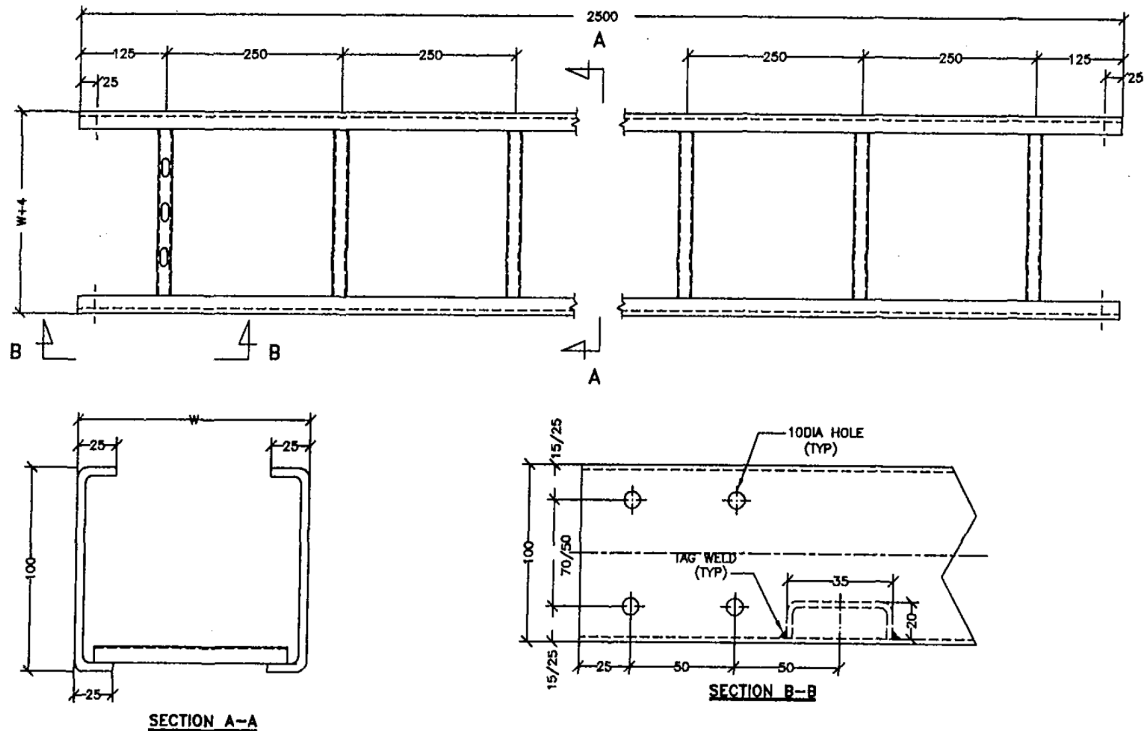
4.00.00

Pre – Fabricated Cable Trays.

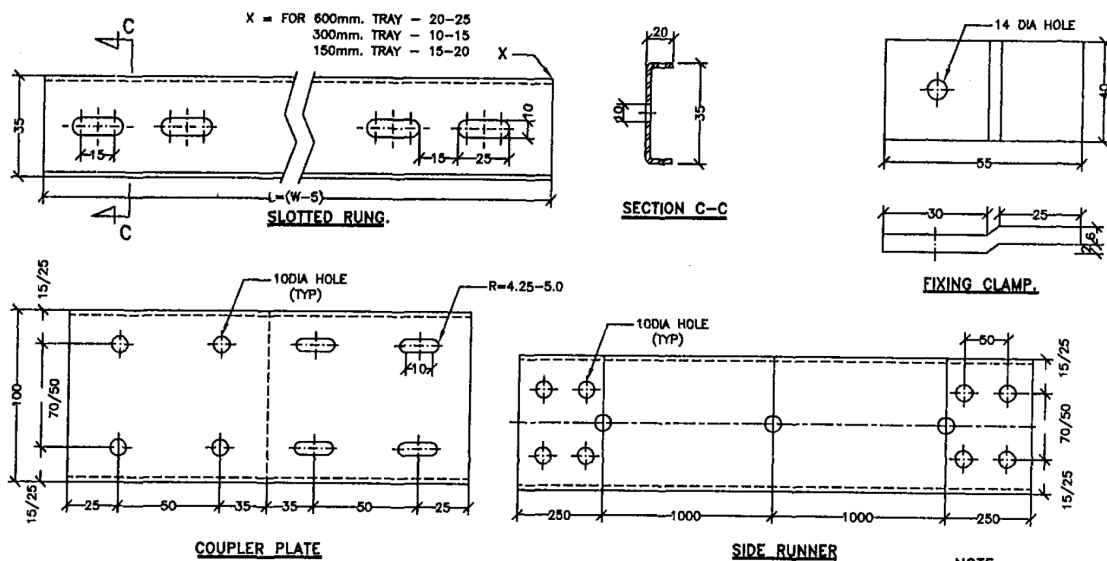
- a. Cable trays shall be pre-fabricated type, constructed from minimum 2 mm thick sheet steel for trays and hot-dip galvanized after fabrication.
- b. All hardware shall be hot-dip galvanized.
- c. Ladder type Cable trays shall be with 250mm rung spacing, 100mm depth and rung width not less than 35mm.
- d. All weld for cable tray supports shall have a minimum throat thickness of 6 mm.
- e. The cable trays, fittings & accessories including all bolts, nuts, screws, washers , etc. shall be hot dip galvanized after fabrication as per IS:2629, IS:2633 & IS:4759. Galvanising shall be uniform, clear, smooth & free from acid spots. Should the galvanizing of the samples be found defective, the entire batch of steel will have to be regalvanised at supplier's cost.
- f. The amount of zinc deposited over threaded portion of bolts, nuts, screws and washers shall be as per IS:1367. Customer reserves the right to measure the thickness of zinc deposit by elcometer or any other instrument & reject any component, which shows thickness of zinc at any location to be less than specified.
- g. The removal of extra zinc on threaded portion of components shall be carefully done to ensure that the threads shall have the required zinc coating on them as specified. However nuts and bolts of size lesser than M12 can be electro galvanized / electro plated.
- h. Cable trays shall be ladder/perforated type as specified complete with matching fittings, (like elbows, bends etc.) accessories (like side coupler plates, etc. and hardware (like bolts, nuts, washers, G.I. strap, hook etc.) as required.
- i. Cable trays, fittings and accessories shall be fabricated out of rolled mild steel sheets free from flaws such as laminations, rolling marks, pitting etc. These (including hardware) shall be hot dip galvanized as per relevant IS. Cable trays shall be ladder type for power/control cables and shall be perforated type for instrumentation cables.
- j. Cable trays shall have standard width of maximum 600 mm and standard length of 2.5 metre. Minimum thickness of mild steel sheets used for fabrication of cable trays and fittings shall be 2 mm. The thickness of side coupler plates shall be minimum 3 mm. Typical details of cable trays, fittings and accessories are shown in the enclosed drawings.

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Drawing no 1: Ladder type cable tray



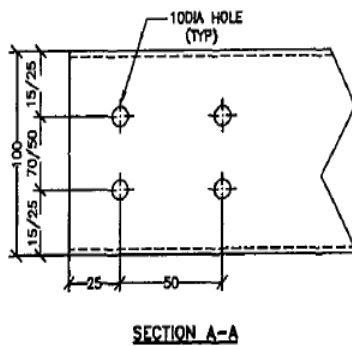
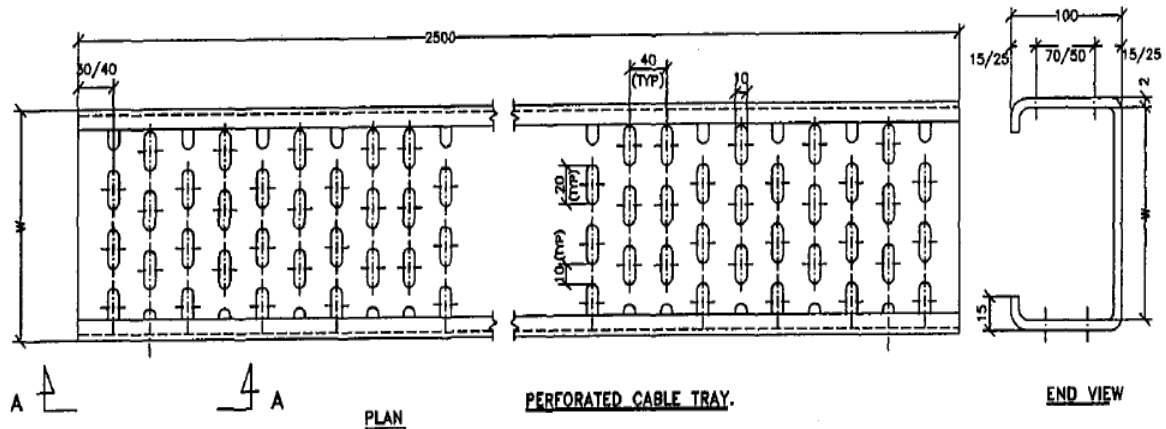
Coupler plate:



- NOTE.
1. MATERIAL :- M.S. SHEET MIN. 2mm. THK.
 2. FINISH :- HOT DIP GALVANISED
 3. COUPLER PLATE- MIN. 3mm THK M.S. HOT DIP GALVANISED.

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Drawing no 2: Perforated type cable tray

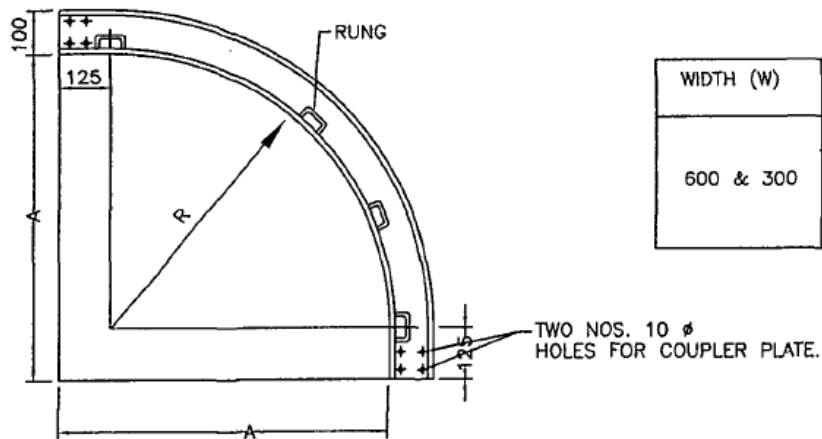


NOTE.

1. ALL DIMENSIONS ARE IN mm.
2. IN-SIDE W (WIDTH) :- 150, 300 & 600mm
3. MATERIAL :- 2mm. M.S. SHEET Min.

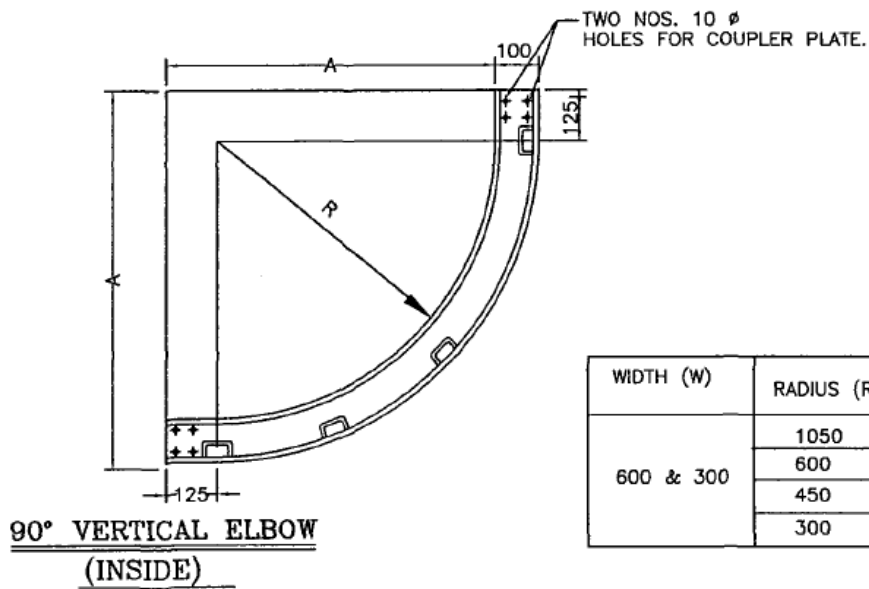
BHEL- ISG, BANGALORE 	Coal Handling Plant for 2x660MW Meja Thermal Power Project. Technical Enquiry Specification for Cable trays & accessories Customer : Meja Urja Utpadan Nigam Pvt. Ltd. (A Joint Venture between NTPC Ltd. & Govt. of U.P./Uttar Pradesh Rajya Vidyut Utpadan Nigam Limited)	DOCUMENT NUMBER IS-1-11-2007/137/Cable trays & accessories LOT 2
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Drawing no 3: 90° vertical elbow (inside & outside)



WIDTH (W)	RADIUS (R)	A
600 & 300	1050	1175
	600	725
	450	575
	300	425

ELEVATION
90° VERTICAL ELBOW
(OUTSIDE)



WIDTH (W)	RADIUS (R)	A
600 & 300	1050	1175
	600	725
	450	575
	300	425

90° VERTICAL ELBOW
(INSIDE)

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SECTION - V INSPECTION & TESTING

- 5.00.00 The Cable Tray has to be tested at manufacturers work in presence of BHEL/ NTPC representative as per approved QAP. QAP for the Cable Tray will be submitted by vendor for approval by BHEL/NTPC . Typical QAP is enclosed for reference. This is an indicative list of tests /checks. The manufacturer is to furnish a detailed Quality Plan indicating the practice and procedure along with relevant supporting documents. Deflection Test on cable trays and Proof Load test on cable trays support system will be as per details given in the NTPC technical specification & approved MQP. The above acceptance tests shall be done only on one sample from each size of offered lot.
Make of all items will be subject to NTPC approval.
- 5.01.01 **Routine Test for Tray** : Test shall be conducted AS PER relevant IS and approved QAP in line with specification .
- **BOM**
 - **Dimension & weight**
 - **Welding check**
 - **Galvanizing: Finish, Thickness**
 - **finish**
- Deflection Test** : One piece each of 2.5m length of cable tray of 300mm & above shall be taken as sample from each offered lot. It shall be supported at both end & loaded with uniform load of 76 kg/meter along the length of cable tray. The maximum deflection at the mid-span of each size shall not exceed 7mm.
- 5.01.02 **TEST CERTIFICATE:** Following Test Certificates shall be submitted during inspection for review
- Welding Test certificates for tray .
 - Material TC
 - Galvanizing

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QUALITY ASSURANCE & INSPECTION MODULE NO. SQE-16

CABLING, EARTHING, LIGHTNING PROTECTION

ATTRIBUTES / CHARACTERISTICS														
ITEMS/COMPONENTS / SUB SYSTEMS	Dimension	Paint shade, paint thickness, adhesion	Pre-treatment of sheet	IP protection	Proof load*	Surface finish	Deflection test*	HV & IR	Galvanise Test (If Applicable)	Functional	Bought out items/Bill of material	Routine tests as per relevant standard & specification	Acceptance tests as per relevant standard & specification	Constructional feature as per NTPC Specification
Wall Mounted-Lighting Panel (IS-513, IS:5, IS:2629, 2633, 6745)	Y	Y	Y	Y		Y		Y	Y	Y	Y	Y	Y	Y
Switch box/junction box/ Receptacles Panel (IS-513, IS:5, IS:2629, 2633, 6745)	Y	Y	Y	Y		Y		Y	Y	Y	Y	Y	Y	Y
Cable glands(BS-6121)	Y											Y		
Cable lug(IS-8309)	Y											Y		
Lighting wire(IS-694)	Y											Y		
Flexible conduits	Y											Y		Y
Conduits(Galvanise & Epoxy) IS-9537 & IS-2629,2633,6745	Y		Y								Y	Y		Y
RCC Hume Pipe (IS-458)												Y		
Cable termination & straight through joint (VDE-0278)	Y											Y		Y
Cable Trays, Flexible supports system & accessories IS-513, 2629,2633,6745	Y		Y		Y	Y	Y	Y	Y	Y		Y	Y	Y
Trefoil clamp	Y													Y
GI flats for earthing & lighting protection (IS 2062, 2629, 6745,2633)	Y		Y						Y			Y		Y
GI wire (IS-280)	Y											Y		
Fire Sealing System (BS – 476)												Y	Y	Y

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SECTION – VI DOCUMENTATION

The following documentation shall be submitted to BHEL at different stages of the Project. In preparing and submitting the documentation, the requirements given in subsequent clauses shall be strictly adhered to

SL. NO.	TYPE OF DOCUMENTS	NO. OF COPIES	STATUS	TIME SCHEDULE
1	GA/OGA drawings showing Plan, Elevation, End View, List of accessories, BOM Details Of Tray	2 + 2 nos. CD ROM	For Approval	Within 7 days of LOI/Order
2	Material & Galvanizing certificate for tray and accessories	2 + 2 nos. CD ROM	For Approval	Within 7 days of LOI/Order
3	QAP For tray.	2 + 2 nos. CD ROM	For Approval	Within 7 days of LOI/Order
4	Test certificates for inspection	2 + 2 nos. CD ROM	For Approval	Along with Inspection Call
5	Routine test certificate and inspection report for all components	10 + 4 nos. CD ROM	Final document	Along with Dispatch.
6	GA/OGA drawings showing Plan, Elevation, End View, List of accessories, BOM Details Of Tray	10 + 4 nos. CD ROM	Final document	Along with Dispatch.
7	Erection & Storage Manual	10 + 4 nos. CD ROM	Final document	Along with Dispatch.

The GA / OGA drawing shall contain the following data for preparation of Layout drawing;

- ◆ Dimensional drawing containing Elevation, section, mounting
- ◆ Weight of the Tray
- ◆ Standards
- ◆ BOM
- ◆ Title of the Drawings shall be as per the requirement of customer

Notes:

1. All drawings, documents and catalogues shall be available in soft copy.
2. Soft copy in CD-ROM and reproducible tracings of all drawings / documents shall be submitted along with final / as-built submission
3. For all technical tables, diagrams, calculations, results, drawings, test data and scales adopted in the design the standard international unit system (SI) as per International

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GENERAL CONDITIONS OF CONTRACTS (GCC)

DEFINITIONS OF TERMS

ABBREVIATIONS

INSTRUCTIONS TO BIDDERS

GENERAL COMMERCIAL TERMS & CONDITIONS

ANNEXURES

**INDUSTRIAL SYSTEMS GROUP
BHARAT HEAVY ELECTRICALS LIMITED**
(A Govt. of India Undertaking)
PROF. CNR RAO CIRCLE, IISc POST
MALLESHWARAM
BANGALORE - 560012

Not for Publication

For Official Use

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DEFINITION OF TERMS

Throughout the Tender Documents including the Enquiry Letter, the following words shall have the meanings assigned to them herein, unless the subject matter or the context requires otherwise.

- 1 **Purchaser** shall mean **M/s Bharat Heavy Electricals Limited** (A Govt. of India Undertaking) incorporated under the Companies Act 1956 acting through its **Industrial Systems Group Division (ISG)**, IISc Post, Prof. CNR Rao Circle, Malleshwaram, Bangalore - 560012 (Karnataka) which expression shall include its successors and assigns. It may also be referred to as **BHEL**.
- 2 **Owner** shall mean the **Customer or Client** for whose project the enquiry is issued by Purchaser and shall include its successors and assigns as well as authorized officer(s)/ representative(s).
- 3 **Consultant** shall mean the agency appointed by Owner or Purchaser to provide consultancy services for the project and shall include its successors and assigns as well as authorized officer(s)/ representative(s).
- 4 **Tenderer** shall mean the Firm/ Company/ Organization which quotes against the Tender Enquiry issued by Purchaser. It may also be referred as **Bidder or Vendor**.
- 5 **Order/ Contract** shall mean and include the general conditions, bidding conditions, specific conditions, specifications, schedules, drawings, form of tender, covering letters, schedule of prices and quantities, letter of intent/ award of the Purchaser, Integrity Pact (if applicable), special conditions applicable to the project and subsequent amendments mutually agreed upon. It may also be referred as **Purchase Order**.
- 6 **Seller/Contractor** shall mean the Firm/ Company/ Organization with whom the Order/Contract is made and shall be deemed to include its successors, representatives, heirs, executors, administrators and permitted assigns, as the case may be. It may also be referred as **Supplier**.

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- 7 **Sub-Contractor** shall mean the person/ firm/ company/ organization to whom any part of the work has been sub-contracted by Seller/ Contractor, with the written consent of Purchaser, and shall include sub-contractor's heirs, executors, administrators, representatives and assigns.
- 8 **Engineer** shall mean the authorized officer of Purchaser to act as the engineer on its behalf for the purpose of the Order/ Contract.
- 9 **Site** shall mean and include the land and place on which the power station and related facilities are to be constructed and any adjacent land which may be allocated or used by Owner or Seller/ Contractor in performance of the Order/ Contract.
- 10 **Tests on completion** shall mean such tests as prescribed in specifications and/ or tests mutually agreed upon by Purchaser and Seller/ Contractor, to be performed by Seller/ Contractor after erection of equipment to establish its satisfactory operation as per specifications.
- 11 **Commissioning** shall mean successful completion of Trial Operation and readiness of the contracted/ ordered plant and materials for commercial use. This will include all consumables and inputs required for pre-commissioning.
- 12 **Initial Operation or Trial Operation or Reliability Run** shall mean continuous integrated operation of the contracted/ ordered plant and materials under varying loads as proof of satisfactory operation for a specified period.
- 13 **Inspection Agency (IA)** shall mean person(s) authorized by Purchaser / Owner to inspect the stores as per Order/ Contract at Contractor's/ Sub-Contractor's works. Vendors to raise inspection call on BHEL ISG.
- 14 Month shall mean calendar month and week shall mean 7 days.
- 15 **Consignee** shall mean the official(s)/ person(s) to whom the stores are required to be delivered in the manner indicated in the Order/ Contract.
- 16 **Plant/ Equipment/ Stores** shall mean the goods, machinery, components, parts, spares etc. required to be supplied by Seller/ Contractor as per Order/ Contract.

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- 17 Contract Engineer (CE)** shall mean the official who signs the Order/ Contract on behalf of Purchaser.
- 18 Site Engineer** shall mean officer of Purchaser/ Owner authorized to receive and verify the in-coming stores, and issue Material Receipt Certificate (MRC)/ Stores Receipt Voucher (SRV).
- 19 Site Inspection Agency (Site IA)** shall mean person(s) authorized by Purchaser/ Owner to inspect the stores/ works included in Order/ Contract at the Project Site.
- 20 GENERAL**

The words incorporating singular shall include plural and vice-versa, the words incorporating masculine gender shall include feminine gender and vice-versa, and the words incorporating persons shall include bodies, corporate, limited liability companies, partnership and other legal entities.

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ABBREVIATIONS

AWB	Airway Bill
BL	Bill of Lading
BOQ	Bill of Quantity
GIF	Cost, Insurance and Freight
CQ	Corporate Quality
CVD	Countervailing Duty
DMS	Document Management System
EMD	Earnest Money Deposit
E&C	Erection and Commissioning
FOB	Free on Board
GR	Goods Receipt
H bidder	Bidder quoting highest landed cost to BHEL
IP	Integrity Pact
IEM	Independent External Monitor
L1 Bidder	Bidder quoting lowest landed cost to BHEL
LC	Letter of Credit
LOI	Letter of Intent
LOA	Letter of Award
LR	Lorry Receipt
MDCC	Material Despatch Clearance Certificate
MRC	Material Receipt Certificate
MSMED	Micro Small and Medium Enterprises Development
NIT	Notice Inviting Tender
O&M	Operation & Maintenance
PBG	Performance Bank Guarantee
P&ID	Process & Instrumentation Diagram
PO	Purchase order
PQR	Pre-Qualification Requirement

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PVC	Price Variation Clause
QS	Quality Surveillance
RA	Reverse Auction
RBI	Reserve Bank of India
RFQ	Request for Quotation
RR	Railway Receipt
SAD	Special Additional Duty
SCC	Special Conditions of Contract

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1.0 GENERAL INSTRUCTIONS

- 1.1 Tenderers are advised to study all the tender documents carefully. Any submission of tender by the tenderer shall be deemed to have been done after careful study and examination of the tender documents and with full understanding of the implications thereof. The specifications and terms & conditions shall be deemed to have been accepted unless otherwise specifically commented upon in 'Deviation sheets by the tenderer in his offer. Non-compliance with any of the requirements and instructions in the Tender Enquiry may result in rejection of the tender.

Integrity Pact (IP) will be applicable for all tenders/ contracts valuing more than a specific value or if specified in NIT/ RFQ. Integrity Pact document shall be issued as part of tender and shall be returned by bidders along with their techno-commercial bids, duly signed by authorized signatories. Only those vendors/ bidders who enter into Integrity Pact with BHEL would be qualified to participate in the bidding process.

- 1.2 All commercial terms and conditions, except prices, should be submitted as part of techno-commercial offer (Part-I) along with unpriced copy of Annexure-II, which may be opened first. The price part (Part-II) along with price copy of Annexure-II is to be submitted in a separate sealed cover along with techno-commercial offer. Purchaser reserves the right to open both the Parts at the same time.
- 1.3 A declaration as per Annexure-III must be sent before opening of Price Bids.

2.0 PROCEDURE FOR SUBMISSION & OPENING OF TENDERS

- 2.1 Tenders shall be submitted in **Two parts** on or before the Due Date and time indicated in the NIT/ RFQ.

PART - I : Techno-Commercial Bid

comprising of Technical Offer, Annexure-I, Commercial Terms & Conditions, Unpriced copy of Price Bid& Annexure II, PQR documents (if applicable) in five (5) sets.

PART - II : Price Bid

Containing Prices, cost of withdrawal of deviation as per Annexure-II, to be submitted in original, strictly, as per Price Schedule of BHEL for complete scope of Tender Enquiry.

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NOTE: Offers are liable to be rejected for changes made by vendors in the Price Schedule, except those specified in the unpriced bid and accepted by Purchaser.

- 2.1.1 PART-I (Techno-Commercial bid) may be opened on Due Date and time specified in the NIT/ RFQ, or extension thereof, in presence of tenderers who may like to attend. Incomplete offers are liable to be rejected. Purchaser reserves the right to open both Part-I and Part-II together.
- 2.1.2 PART-II containing prices shall be submitted along with Part-I but in a separate sealed cover. Corrections/amendments shall be properly authenticated, else the offer is liable to be rejected.
- 2.1.3 Any discount/revised offer submitted by a bidder on its own shall be accepted provided it is received on or before the due date and time of offer submission. The discount shall be applied on pro-rata basis to all items unless specified otherwise by the bidder.

Unsolicited discounts/revised offers given after due date and time of offer submission shall not be accepted.

In case there is no change in the technical scope and/or specifications and/or commercial terms & conditions, the bidder/s shall not be allowed to change his/their price bids after the due date, within the validity period.

In case of changes in scope and/or technical specification and/or commercial terms & conditions, having price implications, techno-commercially acceptable bidders shall be asked by BHEL (after freezing the scope, technical specifications and commercial terms & conditions) to submit the impact of such changes on their price bid. A cut-off date and time shall be given to all the techno-commercially acceptable bidders to submit the impact on their price bids.

In the event of any bidder, after finalizing the technical specification & scope of supply, opting to revise and submit their latest price bid instead of submitting impact on their price bid asked by BHEL, then their original price (i.e. the previous bid) shall also be opened.

Price Impact/ Discount/ Revised Price Bid shall be duly superscribed as:

“Price Impact / Discount/ Revised Price Bid (Part-II) (delete whichever is not applicable), Revision No. ____ against Tender Enquiry No. _____ dated ____”

- 2.2 After technical & commercial examination of the offers received and clarifications obtained (if required), Part-II (Revised Price Bid/ Original Price Bid along with

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Price Impact and Discount, if any) shall be opened, for which the date and time shall be intimated to technically and commercially acceptable bidders in case of public opening. BHEL may opt to finalise the prices through Reverse Auction amongst technically and commercially acceptable bidders. BHEL reserves the right to open the earlier price bids, if any, submitted by the bidder(s), if required.

2.3 No correspondence shall be entertained from the tenderers after opening of Part-II (Price bid), except clarifications (if any) asked by BHEL in writing.

2.4 Only one representative of the bidder will be permitted to be present for tender opening. The representative to be present for tender opening should have proper authentication/ Photo Identity Proof which needs to be produced on demand by BHEL.

2.5 Purchaser may negotiate the tender with L1 bidder after RA/ price bid opening.

2.6 MARKING ON ENVELOPES

2.6.1 Following shall be superscribed on the envelopes which shall be addressed by name and designation to the official inviting tender:

PART-I : 1. TENDER ENQUIRY No. AND ITEM DESCRIPTION
 2. DUE DATE FOR OPENING
 3. "TECHNO-COMMERCIAL BID".

PART-II : 1. TENDER ENQUIRY NO AND ITEM DESCRIPTION
 2. DUE DATE FOR OPENING
 3. "PRICE BID".

2.6.2 Both Parts - I & II shall be submitted in separate sealed covers duly superscribed as indicated above and shall be enclosed further in a main cover duly sealed and superscribed as:

"TENDER FOR _____ AGAINST TENDER ENQUIRY NO. _____ DUE ON _____ CONTAINING PART-I & PART-II BIDS"

2.6.3 Envelope not marked with tender enquiry number is liable to be ignored and may not be opened.

2.7 BID SUBMISSION

2.7.1 Tenders shall be addressed to BHEL officials by name & designation and sent to the following address:

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Tender Box at the reception of EPD & ISG,
 Bharat Heavy Electricals Ltd.
 Industrial Systems group
 Opp. IISc, PROF. C N R RAO CIRCLE ,
 MALLESWARAM , BANGALORE - 560 012
 Attention: 1) Mr.
 2) Mr.

- 2.7.2 Tenders can either be deposited in tender room in person or sent by Courier/Registered or Speed Post to the above mentioned address. It shall be bidders' responsibility to ensure that tenders are delivered in time.
- 2.7.3 Name of vendor's dealing person with Contact No(s), Email ID and Address of correspondence shall be provided in the bid.
- 2.8 Tenders received after the Due Date and Time of submission shall be rejected.
- 2.9 Unsolicited tenders will not be entertained.
- 3.0 Total **erection & commissioning charges** including service tax should be minimum 20% (or as specified in NIT) of the total quoted package price (excluding mandatory spares but including all taxes and freight), failing which the break-up of prices shall be adjusted accordingly for ordering.
- 4.0 **Authority of the person signing the tender on behalf of the tenderer:**

A person signing the tender or any other document in respect of Order/Contract on behalf of the tenderer, without disclosing his authority to do so shall be deemed to warrant that he has the authority to bind the tenderer. If it is discovered at any time that the person so signing had no authority to do so, the Purchaser may, without prejudice to any other right or remedy, cancel the Order/Contract and make or authorise the purchase of the stores at the risk and cost of such tenderer and hold such tenderer liable to Purchaser for all costs and damages arising from cancellation of the Order/Contract including any loss which Purchaser may sustain on account of such purchase.

Notes:

- a) Bids of Indian supplier shall be in Indian Rupee only.
- b) Bids of foreign suppliers shall preferably be in currency of the country of origin and on FOB basis.

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c) An authorized representative/ agent can represent only one bidder for the given package.

5.0 CLARIFICATIONS REQUIRED BY BIDDERS

Technical and commercial clarifications required before submission of the tender should be addressed to the official(s) inviting the tender. The bidders are requested to submit all their queries/clarifications by the date specified in the NIT after which it will be presumed that there are no queries/clarifications and BHEL will be under no obligation to reply queries/clarifications raised after the date.

6.0 DEVIATIONS - LISTING

6.1 Tenders shall be submitted strictly in accordance with the requirements of tender documents. In case of deviations from NIT, the tenderer shall give cost of withdrawal of such deviation in Sealed Cover as per Annexure-II.

6.2 If bidder insists for price variation clause (PVC) where NIT specifies Firm price, the offer should contain:-

- a) PVC Formula
- b) Ceiling for PVC
- c) Base date and applicable indices for the base date.

Open ended PVC formula is not acceptable. Indices shall be based on Government of India/ RBI publications/ IEEMA/ LME etc. However, BHEL reserves the right to accept/ reject the offer with PVC.

7.0 VALIDITY OF OFFER

Vendors' offers shall be submitted with the following validity periods:

- i) Original offer shall be valid for **four** months from Part-I opening.
- ii) If revised price bid/ price impact is asked by BHEL, the validity of the same shall be two months from the date of revised price bid/ price impact or four months from Part-I opening, whichever is later.
- iii) Prices of Recommended Spares, O&M Spares and Mandatory Spares (wherever these are Optional items) shall be valid till two years from the date of PO.
- iv) Unit prices for scope addition/deletion shall be valid till two years from the date of PO.

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v) Prices of optional items shall be valid till the contract period for placement of order.

vi) Offers with shorter validity are liable to be rejected.

8.0 **LANGUAGE & CORRECTIONS**

a) Tenderer shall quote the rates in Hindi/English language and international numerals only. Total Price shall be entered in figures as well as in words. For the purpose of tender, metric system of units shall be used.

b) All entries in the tender shall either be typed or written legibly in ink. Cancellations, corrections, insertions, erasements, over-writing (if unavoidable) shall be authenticated with signature and seal by the bidder.

9.0 **PRICE DISCREPANCY**

Following shall be considered for evaluation and ordering for non-conformities/ errors/ discrepancies in price bid:

(a) If, in the price structure quoted for the required goods/ services/ works, there is discrepancy between the unit price and the total price (which is obtained by multiplying the unit price by the quantity), the unit price shall prevail and the total price corrected accordingly, unless in the opinion of the Purchaser there is an obvious misplacement of the decimal point in the unit price, in which case the total price as quoted shall govern and the unit price corrected accordingly.

(b) If there is an error in a total corresponding to the addition or subtraction of subtotals, the subtotals shall prevail and the total shall be corrected.

(c) If there is a discrepancy between words and figures, the amount in words shall prevail, unless the amount expressed in words is related to an arithmetic error, in which case the amount in figures shall prevail subject of (a) and (b) above.

(d) If there is such discrepancy in an offer, the same shall be conveyed to the bidder with target date upto which the bidder has to send his acceptance on the above lines and if the bidder does not agree to the decision of the Purchaser, the bid is liable to be ignored.

(e) Taxes and duties if not specified clearly as extra shall be considered as included in the basic price and, therefore, shall not be reimbursed.

10.0 **TENDERER TO INFORM HIMSELF FULLY**

10.1 Tenderer shall closely peruse all clauses, specifications & drawings etc. indicated in tender documents before quoting. In case of any doubt about meaning of any

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portion of tender specifications or discrepancies or omissions in drawings/tender document or clarifications regarding scope of work etc., tenderer shall contact the official(s) inviting the tender for clarifications, before submitting the offer.

- 10.2 Tenderer shall make independent enquiries as to conditions and circumstances affecting cost estimates, and possibility of executing supplies/works as described. Tenderer shall be deemed to have inspected and examined the site and its surroundings and to have satisfied himself as to the form and nature of the site, the quantities and materials necessary for completion of the work and means of transport and access to the site, the accommodation required, general labour position at site and to have quoted prices taking into consideration the risks, contingencies and other circumstances which may influence or affect execution of the Order/Contract.
- 10.3 It is the responsibility of tenderer to keep himself informed about all taxes & duties applicable on materials/services as prevailing at the time of tendering. If the rates assumed by tenderer are less than the tariff rates prevailing at the time of tendering, the tenderer will be himself responsible for such under quotations.

11.0 ETHICS IN BUSINESS DEALINGS

- 11.1 In order to protect its commercial interests, BHEL may take action against suppliers/ contractors by way of suspension of business dealings with them, who either fail to perform or are in default without any reasonable cause, cause loss of business/ money/ reputation, indulge in malpractices, cheating, bribery, fraud or any other misconduct or formation of cartels so as to influence the bidding process or influence the price as per extant policy of the company.

12.0 INTEGRITY PACT

Vendors shall have to enter into Integrity Pact with BHEL if specified in NIT/ RFQ, failing which vendor's offer will be rejected (Refer Annexure-IX).

13.0 REVERSE AUCTION

BHEL reserves the right to go for Reverse Auction (RA) instead of opening the sealed envelope price bid, submitted by the bidder. This will be decided after techno-commercial evaluation. All bidders to give their acceptance for participation in RA. Non-acceptance to participate in RA may result in non-consideration of their bids, in case BHEL decides to go for RA.

In case BHEL decides to go for Reverse Auction, only those bidders who have given their unconditional acceptance to participate in RA will be allowed to

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participate in the Reverse Auction. Those bidders who have given their acceptance to participate in Reverse Auction will have to necessarily submit „online sealed bid“ in the Reverse Auction. Non-submission of “online sealed bid” by the bidder will be considered as tampering of the tender process and will invite action by BHEL as per extant guidelines in vogue.

Information and General Terms and Conditions governing RA shall form part of the RFQ/ Enquiry (Annexure-XI). Business Rules for RA shall be sent to the bidders before conducting RA.

14.0 REJECTION OF TENDER AND OTHER CONDITIONS

14.1 Acceptance of tender will rest with Purchaser and does not bind him to accept the lowest or any tender and reserves to itself full rights for the following without assigning any reasons whatsoever:

- a) To reject any or all the tenders.
- b) To split the work amongst two or more tenderers (where E&C is not in tenderer’s scope).
- c) To award the work in part. (where E&C is not in tenderer’s scope).
- d) To increase or decrease the quantities.
- e) To reject any commercial or technical deviation given in offer.

14.2 Standard pre-printed conditions of tenderer attached to offer will not be accepted and only those mentioned in the body of offer will be considered.

14.3 Purchaser will not be bound by any power of attorney granted by tenderer or by changes in composition of the firm made subsequent to award of Order/Contract. Purchaser may, however, recognize such power of attorney and changes after obtaining proper legal advice, the cost of which will be chargeable to the Seller/Contractor concerned.

14.4 If tenderer deliberately gives wrong information, Purchaser reserves the right to reject such an offer at any stage or cancel the Order/Contract, if awarded, and forfeit the security deposit and bank guarantee.

15.0 DEVIATIONS FROM NIT

15.1 Deviations (Commercial as well as Technical) from NIT are generally not acceptable. In case of deviations from NIT, the tenderer shall give cost of withdrawal of such deviation in Sealed Cover as per Annexure-II.

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16.0 Loading For Commercial Deviations (where cost of withdrawal not given)

- 16.1 For deviations w.r.t. Payment terms, Liquidated damages, Firm prices and submission of E1/ E2 forms before claiming 10% payment, if a bidder chooses not to give any cost of withdrawal of deviation loading as per Annexure-VIII will apply.
- 17.0 Interest Rate for loading will be taken as Base rate of SBI (as applicable on the date of bid opening, Techno-commercial bid, in case of 2 part bids) + 6% for the period of relaxation sought by the bidders.

18.0 DISCOUNT

Discount offered by any bidder in the original price bid, against the present Tender Enquiry, which is also indicated to be applicable to any other Enquiry, shall be considered against the present Tender Enquiry only. In case only percentage discount is indicated, the same shall be applicable to optional prices also.

Discount offered shall be valid for full duration of offer validity.

Any conditional discount shall not be considered for evaluation.

19.0 EVALUATION CRITERIA

- 19.1 Though foreign bidders are required to quote FOB prices, Price evaluation and comparison will be made on the basis of Free Delivery at the Project site.
- 19.2 Tenders will be evaluated on the basis of delivered cost, i.e. total cost to the Purchaser, taking into consideration loadings, if any, and all available financial advantages, including those available from Owner, taxation authorities etc.
- 19.3 For evaluation, exchange rate (TT selling rate of State Bank of India) as on scheduled date of tender opening (Part-I bid in case of two part bid) shall be considered.
- 19.4 In case of foreign bidders, the quoted FOB price shall be loaded by following factors to arrive at total FOR Site price:
- a) Marine freight and insurance – @ 3% of FOB value for despatches from Europe/ Asia/ Australia/ African continent and 5% of FOB value for despatches from USA/ American continent.

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b) Custom Duty (including CVD & SAD) as per Special Conditions of Contract – as prevailing on date of price bid opening.

c) Port handling/clearing charges – @ 1% of CIF value.

d) Inland freight – @ 1% of CIF value.

20.0 FOREIGN SUPPLIERS & INDIAN AGENTS OF FOREIGN SUPPLIERS

Please refer 'Annexure-V' for guidelines.

21.0 MICRO, SMALL & MEDIUM ENTERPRISES

Extant regulations of Govt. of India will be applicable.

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20.0	STORAGE INSTRUCTIONS
21.0	MATERIAL RECEIPT CERTIFICATE

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22.0	CONSIGNEE'S RIGHT OF REJECTION
23.0	RISK IN STORES (FOR E&C CONTRACTS)
24.0	SHORTAGES/DAMAGES
25.0	CONFIDENTIALITY
26.0	DEFAULT/ BREACH OF CONTRACT, INSOLVENCY & RISK PURCHASE
27.0	TERMINATION OF THE CONTRACT
28.0	TRANSFER, SUB-LETTING/ ASSIGNMENT/ SUB-CONTRACTING
29.0	FORCE MAJEURE
30.0	INDEMNIFICATION
31.0	SETTLEMENT OF DISPUTES
32.0	ARBITRATION
33.0	LAWS GOVERNING THE CONTRACT
34.0	JURISDICTION OF COURT
35.0	ORDER OF PRECEDENCE
36.0	SUPPLIER PERFORMANCE MONITORING AND RATING SYSTEM
37.0	DEALING WITH BANNED SUPPLIERS/ CONTRACTORS IN BHEL
38.0	CLAUSES APPLICABLE FOR E&C PACKAGES

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1.0 ACCEPTANCE OF ORDER

Seller/Contractor should acknowledge and accept the LOI/ Purchase Order issued by BHEL within 7 days of its receipt. Seller/Contractor should examine the LOI/ Purchase Order immediately upon receipt and bring to the notice of BHEL, within 7 days of receipt, any discrepancy with regard to scope of work, rates, taxes & duties, agreed terms & conditions etc. for due rectification. If the Seller/Contractor fails to give such intimation / acceptance within seven days, the Seller/Contractor shall be deemed to have agreed to supply the stores as per LOI/ Purchase Order.

2.0 CONTRACT

Contract between Purchaser and Seller/Contractor is merely a contract and shall not be treated as partnership between the parties to the contract.

3.0 PRICES

Prices shall be for the entire scope of work in line with the tender documents and subsequent clarifications/confirmations.

4.0 TAXES AND DUTIES

4.1 EXCISE DUTY

4.1.1 Seller/Contractor is required to ensure that excise duty including education cess, if any, is quoted as per the existing tariff on the date of the offer and all benefits as per existing rules have been considered.

4.1.2 Excise duty actually incurred by Seller/Contractor on self-manufactured items alone shall be reimbursed against documentary evidence.

Excise duty paid by bidder on inputs, bought out items, raw materials and components consigned directly to site from sources other than Seller/Contractor's factory/works shall be included by the bidder in the quoted ceiling amount of excise duty and the same shall be payable extra at actuals limited to the ceiling amount.

4.1.3 If excise duty is paid under protest or dispute, it shall not be reimbursed till the dispute is settled. If the Seller/Contractor claims/obtains any refund of the excise duty paid, the same shall be refunded to the Purchaser immediately

4.1.4 Invoice cum Excise duty gate pass (Excise Invoice) should contain the name of the ultimate consignee as per Order/Contract/ Special Conditions of Contract.

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4.1.5 If required by Purchaser, the Seller / Contractor will provide a certificate stating that CENVAT benefit has been availed of on the inputs and the same has been passed on to the Purchaser.

4.1.6 Excise duty shall be paid at actuals against documentary evidence but restricted to the amount and percentage indicated in the Order/Contract.

4.2 **SALES TAX/VALUE ADDED TAX(VAT)**

4.2.1 Central Sales Tax / Value Added Tax shall be reimbursed only if the same is paid by the Seller / Contractor to the respective Govt. authorities on direct sales by the Seller/ Contractor to the Purchaser, meeting all statutory requirements and availing all exemptions/concessions under the respective Central Sales Tax / Value Added Tax Acts. The offer should clearly indicate CST/VAT percentage and the total amount along with concessional form(s), if any.

4.2.2 Purchaser is registered in Bangalore, Karnataka vide following Registration Numbers:

Central Sales Tax Registration No. : 70160429 w.e.f. 19-09-2002.

Karnataka Sales Tax Registration No. : 70110426 w.e.f. 19-09-2002.

Karnataka TIN. : 29630078284

4.2.3 Central Sales Tax/Value Added Tax shall be reimbursed, as per tariff applicable, but restricted to the percentage and amount shown in the Order/Contract. If it is shown as included in the quoted price/ not applicable, it will not be reimbursed by the Purchaser.

4.2.4 Purchaser proposes to make sale-in-transit under section 6 (2) (b) of Central Sales Tax Act where goods movement is inter-state. Form-C shall be issued and exchanged against Form-E1/E2 based on quarterly transactions. Seller/Contractor is required to submit his request in the format enclosed at Annexure-VI within 30 days from end of the Quarter, giving State-wise invoice details.

4.2.5 In compliance with the notification No. CCW/CR-44-2013-14 dt. 29/04/2014 issued by Commercial Tax Dept., Govt. of Karnataka, vendors shall submit all the requisite documents within 10 days of dispatch for the purpose of issuance of 'C' forms. Timely issuance of 'C' form will depend on the compliance of this condition.

Note: In case of non-receipt of E1/E2 forms amount of differential tax payable by BHEL shall be to vendors' account

4.2.6 VAT invoices, in format prescribed by the respective State Sales Tax Act, have to be submitted in the name of Nodal Agency specified in Special Conditions of Contract.

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4.3 SERVICE TAX

- 4.3.1 Service Tax paid by the Service Provider /contractor to the Government authorities directly shall only be paid at actuals against documentary evidence of Service tax payment (Service Tax remittance challan) made to concerned Service tax authorities corresponding to the tax claimed in the previous invoice / RAB, but restricted to the rate and amount mentioned in the order/contract. The offer should clearly indicate the percentage and the total amount of service tax.
- 4.3.2 Service provider/Contractor to ensure their registration for “Intended Service” to be provided, before claiming Service tax under the “intended category”. Decision of BHEL shall be final w.r.t. the “Intended category” in which the service will be falling.
- 4.3.3 If required by the Purchaser, the Service Provider/Contractor will provide a certificate stating that “CENVAT Benefit has been availed of on the input and the same has been passed on to the purchaser” or “CENVAT Benefit has not been availed of on the inputs”.
- 4.3.4 Vendor shall comply with the Point of Taxation Rules, as contemplated under the Service Tax Rules. In case, the CENVAT credit could not be availed by BHEL within the time limit (statutory), due to delay in submission of invoice(s) or for any other reason(s) attributable to vendor(s)/contractor(s), liability towards the loss of such CENVAT credit shall be to the vendor(s)/contractor(s) account. TDS shall be made for IT as per Income Tax act.

4.4 OTHER TAXES & LEVIES

All taxes and duties other than Excise Duty, Sales Tax/ VAT, Service Tax shall be deemed to be included in the Ex-Works prices unless specified otherwise by the bidder in the price bid. No variation in other taxes and duties shall be payable by Purchaser. However, statutory variation in Octroi will be payable extra against documentary evidence.

4.5 CUSTOMS DUTY

- 4.5.1 Customs Duty element for imported items as per Special Conditions of Contract shall be included in the Ex-Works prices. No variation in customs duty and exchange rate for imported items shall be payable by Purchaser.
- 4.5.2 Seller/Contractor shall arrange for his own import license, if required, since Purchaser will not provide any import license. Therefore, Seller/Contractor alone shall be responsible for any delay in getting import license or non-availability of the

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same or completion of other related formalities. Purchaser shall not be responsible for any financial liability, whatsoever, on this account.

- 4.5.3 Essentiality Certificate or Project Authority Certificate (PAC) as per Import Policy, if required to avail concessional customs duty, shall be clearly specified in the offer. Import content (CIF value in rupees) with list of items, quantity, foreign currency, country of origin etc., shall be submitted by the bidder as part of Price bid.

4.6 **DIRECT TAX**

- 4.6.1 Purchaser shall not be liable towards income tax of whatever nature including variations thereof, arising out of this Order/Contract, as well as tax liability of the Seller/Contractor and his personnel.
- 4.6.2 Deductions of Tax at source at the prevailing rates shall be effected by the Purchaser before release of payment, as a statutory obligation, if applicable. TDS certificate will be issued by the Purchaser as per statutory provisions.

5.0 **STATUTORY VARIATION**

- 5.1 If the rates for taxes and duties in respect of the quoted materials and/or services assumed by the Seller/Contractor are less than the tariff prevailing at the time of tendering, Seller/Contractor will be responsible for such under quotations. However, if the rates assumed are higher than the correct rates prevailing at the time of tendering, the difference will be to the credit of the Purchaser.
- 5.2 Statutory Variations in Excise Duty, Service Tax and Central Sales Tax/Value Added Tax only on self manufactured items/services rendered by vendor himself on the rates prevailing at the time of delivery/ completion in comparison to the date of offer, will be to the account of the Purchaser. No other variations such as on customs duty, exchange rate, minimum wages, prices of controlled commodities, any other input etc. shall be payable by the Purchaser.
- 5.3 Notwithstanding the above, where the actual completion of the supply occurs beyond the period stipulated in the Order/Contract or any extension thereof, variations referred to above, will be limited to the rates prevailing on the dates of such agreed completion periods only. For variations after the agreed completion periods, the Seller/Contractor alone shall bear the impact for the upward revisions and for downward revisions, purchaser shall be given the benefit of reduction in taxes/duties. This will be without prejudice to the levy of penalty for delay in delivery/completion schedule.

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- 5.4 Any new tax structure (like Goods & Services Tax) as and when implemented by the Government shall become applicable in addition to or in lieu of existing tax structure.

6.0 **VARIATION OF CONTRACT VALUE:**

Prices shall remain Firm (or with PVC as specified in NIT) for any increase or decrease in the Order/Contract value (Ex-works) upto plus or minus 30% within 2 years from the date of original PO unless specified otherwise in NIT. The Purchaser shall have the right to increase or decrease quantities and scope upto the above extent of value and Seller/Contractor shall be bound to accept the same at the contracted prices without any escalation.

7.0 **DRAWING SUBMISSION & APPROVAL :**

Drawing submission as per L2 network (to be furnished by the Vendor and approved by BHEL). Obtaining drawing approval from customer is the responsibility of the vendor. However, BHEL shall assist the vendor in getting the approvals.

8.0 **TRANSPORTATION & FREIGHT CHARGES**

- 8.1 All dispatches shall be through road carriers approved by Purchaser/Bank, on freight pre-paid basis.
- 8.2 Road permit/entry permit, if required as per law of the State, shall be arranged by Purchaser.
- 8.3 Freight charges (including Service Tax) shall be payable after delivery of the goods at the project site, on receipt of MRC or receipted LR on pro-rata basis.

9.0 **TERMS OF PAYMENT**

9.1 **SUPPLY PACKAGES (Main Supply and Mandatory Spares)**

- 9.1.1 Ninety percent (90%) of basic price of materials supplied, as per PO, along with 100% taxes and duties (as applicable), shall be paid against clean receipted LR on pro-rata basis.
- 9.1.2 Ten percent (10%) of basic price of materials supplied will be released on pro-rata basis after receipt of Material Receipt Certificate (MRC) from project site engineer of Owner/ Purchaser, on submission of all final documents for the packages as detailed below, duly certified by Engg. Deptt. of purchaser, and submission of Form E1/ E2 against Form-C, if applicable.

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List of packages which requires final documents shall be as per technical specification

9.2 SUPPLY PACKAGES WITH PERFORMANCE GUARANTEE / DEMONSTRATION TEST AT SITE IN VENDOR'S SCOPE (Main Supply)

- 9.2.1 Eighty Five percent (85%) of basic price of materials supplied, as per PO /approved billing schedule, along with 100% taxes and duties (as applicable), shall be paid against clean receipted LR on pro-rata basis.
- 9.2.2 Ten percent (10%) of basic price of materials supplied will be released on pro-rata basis after receipt of Material Receipt Certificate (MRC) from project site engineer of Owner/ Purchaser and submission of Form E1/ E2 against Form-C, if applicable.
- 9.2.3 Five percent (5%) of the total basic price of materials and PG/ Demonstration test charges shall be released after submission of all final documents as per Technical Specifications and successful completion of the Performance Guarantee (PG)/Demonstration Test at site.

Note: If the Performance Guarantee/ Demonstration Test is not conducted up to 24 months from supply completion for reasons not attributable to the vendor, then last 5% payment will be released against Bank Guarantee of an equivalent amount, valid for 12 months. This bank guarantee will be in addition to Contract Performance Bank Guarantee for 10% of the contract value (excluding taxes, duties and freight).

9.3 SUPPLY PAYMENT FOR TURNKEY PACKAGES (E&C IN VENDOR'S SCOPE -

- 9.3.1 Eighty Five percent (85%) of basic price of materials supplied, as per approved billing schedule, along with 100% taxes and duties (as applicable),shall be paid against clean receipted LR on pro-rata basis.

OR

- i) Five percent (5%) lump sum payment of total basic price (excluding taxes, duties & freight) against approval of design documents and quality plans certified by Engineering. Design documents and quality plan shall be as defined in the Technical Specifications.
 - ii) Eighty percent (80%) of basic price of materials supplied, as per approved billing schedule, along with 100% taxes and duties (as applicable),shall be paid against clean receipted LR on pro-rata basis.
- 9.3.2 Five percent (5%) of basic price of materials supplied along with freight, if applicable, will be released on pro-rata basis after submission of Material Receipt

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Certificate (MRC) from project site engineer of Owner/ Purchaser and submission of Form E1/ E2 against Form-C, if applicable.

Collection of Material Receipt Certificate from Site/ Owner and its submission for claiming the payment shall be the responsibility of the Seller/Contractor. 9.3.3

9.3.3 Ten percent (**10%**) of the total basic price shall be released after i) submission of all final documents as per Technical Specification and ii) successful completion of Performance Guarantee (PG)/Demonstration Test and handing over of the system/package, if applicable, as per Order/Contract.

9.4 **ERECTION & COMMISSIONING PAYMENT FOR TURNKEY PACKAGES**

9.4.1 Eighty percent (**80%**) payment on pro-rata basis for the work completed, as per approved billing schedule, shall be released by BHEL-ISG, HQ on submission of protocols, duly signed by BHEL Site/Owner.

9.4.2 Ten percent (**10%**) of the total value shall be released by BHEL-ISG, HQ on successful commissioning of the complete system/package.

9.4.3 Ten percent (**10%**) of the total value shall be released by BHEL-ISG, HQ on successful completion of PG/ Demonstration test(s) and handing over system/package to the Owner, as applicable.

9.5 **PG TEST, INSTALLATION CHECK, SUPERVISION OF ERECTION / COMMISSIONING CHARGES**

100% payment shall be released after successful completion of the activity, on Site certification.

9.6 **Vendors shall submit documents for payment directly to BHEL. Payment will be released within 45 days after receipt of complete documents as per order/ contract.**

Note:

- 1) For indigenous suppliers, if the documents are routed through Bank, then all bank charges will be to vendor's account.
- 2) Foreign bidders can opt for payment (less agency commission, if applicable) through irrevocable and unconfirmed letter of credit. In that case for evaluation purpose, prices of foreign bidders will be loaded on account of payment through LC, equal to loading specified against 'Payment through Bank' in Annexure-VIII. No loading will be done if foreign vendors agree for 90 days issuance LC or

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submit the documents on collection basis for payment within 90days of submission of complete documents.

- 3) LC opening/ negotiation/ confirmation charges will be to vendor's account.
- 4) Form C/ E1/E2 are not applicable for foreign bidders.
- 5) In extreme case of vendors not agreeing to link 10% payment with submission of Form E1/ E2 against Form-C as above, their prices will be loaded as per Annexure-VIII.
- 6) Any negative PVC, if not adjusted in earlier payments, will be adjusted at the time of MRC payment.
- 7) Payment terms for mandatory spares shall be as per clause 9.1.

9.7 **DOCUMENTS TO BE SUBMITTED BY VENDOR**

9.7.1 **For Recognition of Dispatch**

Copy of the following documents by e-mail/ fax immediately on despatch:

- a. Invoice
- b. LR along with Delivery Order
- c. Packing List
- d. Insurance Intimation
- e. Dispatch Clearance

9.7.2 **For Claiming Payments (under clause 9.1.1, 9.2.1, 9.3.1):**

- a. Invoice – original+3 copies
- b. Receipted LR (signed & stamped)- original+3 copies (applicable only for clause 9.1.1, 9.2.1) or LR – original+3 copies (applicable only for clause 9.3.1)
- c. Packing List - clearly showing number of packages, gross weight and net weight. - original+3 copies
- d. MDCC from BHEL/ Customer – as per SCC – 4 copies
- e. Guarantee Certificate – Original + 3 copies
- f. Insurance Intimation - 4 copies
- g. PVC Calculation and copy of all applicable indices, if PVC applicable. – 4 copies
- h. Duty drawback documents (original excise invoice, original disclaimer certificate, original certificate from excise authority for payment of excise duty), if applicable. – original + 3 copies

9.7.3 **For Claiming Freight Payment**

- a. Invoice – Original + 3 copies

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- b. Receipted LR (signed & stamped)/ confirmation from site regarding receipt of packages/Boxes – original / copy.
- c. Transporter's document indicating the freight amount. Original money receipt to be submitted if required as per SCC.

9.7.4 For Claiming MRC Payment

- a. Invoice – Original + 3 copies
- b. Copy of MRC

9.7.5 For Claiming Payment for Services involving Service Tax

- a. Invoice as per rule 4A of Service Tax Act – Original + 1 copy
- b. Copy of Service Tax registration certificate
- c. Copy of challan for Service Tax payment corresponding to service tax claimed in the previous invoice / RAB

9.7.6 All your invoices against our order shall reach BHEL -ISG within one month from the date of LR/RR ,addressed to:

BHEL - ISG VENDOR BILLS BOX ,
 BHEL - Industrial Systems Group ,
 Opp. IISc, PROF. C N R RAO CIRCLE ,
 MALLESWARAM , BANGALORE - 560 012

- a. The envelope shall be super-scribed with Project Name / P.O No. / W.O No., and the Bill / Invoice numbers & Contact person.
- b. Bills / invoices which are brought personally by vendors to ISG are to be dropped in the "BHEL-ISG vendor bills Box" kept near Tender Box at the Reception Office.
- c. Any additional tax implication to BHEL due to delay in submission of bills by Vendor beyond one month shall be to vendor's account.

9.8 LOADING DETAILS IN CASE OF DEVIATIONS:-

Loading details in respect to deviations in Payment Terms, LD, PVC and Form-E1/E2 indicated in Annexure – VIII.

9.9 BHEL'S BANKERS

List of the consortium bankers of BHEL-ISG is as per Annexure-X.

9.10 MODE OF PAYMENT

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Payments shall be made directly to the Seller/Contractor by E-transfer. Seller/Contractor to provide necessary information for the same as per Annexure-VII.

- 9.11 No interest shall be payable by the Purchaser on the security amount, bank guarantee amount or balance payment or any money which may become due owing to difference or misunderstanding or any dispute between the Purchaser and the Contractor, or any delay on the part of Purchaser in making periodical or final payment or any other aspects incidental thereto.
- 9.12 In case of Turnkey packages (refer clause 9.3.3 & 9.4.3) , if the PG test is not conducted up to 24 months from the date of last dispatch for reasons not attributable to vendor, the last 5% payment will be released against Bank Guarantee of an equivalent amount, valid initially for 12 months and extendable till completion of PG test. This BG will be in addition to contract Performance Bank Guarantee for 10% of the contract value (Ex-Works / F.O.B.).

10.0 RECOVERY OF OUTSTANDING AMOUNT

In event of any amount of money being outstanding at any point of time against the Seller/Contractor due to excess payment or any other reason whatsoever, in the present order/contract or any other order/contract from any BHEL Unit, the outstanding amount shall be recovered from the payments due to the Seller/Contractor or at any other appropriate time and manner/mode as deemed fit by the Purchaser at its sole discretion.

11.0 CONTRACT PERFORMANCE BANK GUARANTEE

- 11.1 No Bank Guarantee is required where original Order/ Contract value is up to Rs. 25 Lakhs (excluding taxes, duties and freight).
- 11.2 For original order / contract values above Rs. 25 Lakhs (excluding taxes, duties and freight), the vendor shall submit Contract Performance Bank Guarantee (as per Annexure-IV) for 10% of Order/ Contract value (excluding taxes, duties & freight) before first submission of documents for payment to cover the due performance of Order/ Contract and to fulfill the guarantee conditions stipulated in the Order/ Contract. However, BG value can be proportionality reduced after completion of Guarantee period Unit-wise/ Lot-wise/ Set-wise, as applicable.

Foreign vendors seeking payment through Letter of Credit (LC) should submit the Bank Guarantee before LC opening.

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- 11.3 Value of the Bank Guarantee (at the time of submission) shall remain unchanged for any subsequent variations in order/ contract value up to 20%. Beyond this, the Seller/ Contractor shall arrange to enhance or reduce the value of the Bank Guarantee accordingly.
- 11.4 Validity of the Bank Guarantee shall be for the entire Guarantee period + 3 months claim period. Initially, it should be at least 18 months + 3 months claim period, later extended to cover the entire guarantee period, two months before its expiry.
- 11.5 Purchaser reserves the right to encash the bank guarantee and forfeit the amount in the event of any default, failure or neglect on part of the Seller/ Contractor in fulfillment of performance of the Order/ Contract.
- 11.6 Equivalent amount shall be recovered from payment due to the Seller/ Contractor, before releasing any payment, in absence of a valid bank guarantee.
- 11.7 Bank Guarantees shall be from Consortium Bank as per Annexure-X. Bank guarantees from cooperative banks/ non-scheduled banks are not acceptable.
- 11.8 In case of private sector banks, a clause to be incorporated in the text of bank guarantee that it can be enforced by being presented at any branch of the bank located in Bangalore.
- 11.9 Two witness signatures from bank officials, other than the bank official who has already signed is a must. BG is to be submitted directly by the issuing bank to Sr. DGM/MM/BG-1A, under registered post (A/D).
- 12.0 GUARANTEE FOR PLANT/ EQUIPMENT/ STORES**
- 12.1 Seller/ Contractor shall warrant that the stores supplied shall be free from all defects and faults in design & engineering, material, workmanship & manufacture and shall be of the highest grade and consistent with the established and generally accepted standards and in full conformity with the Order/ Contract specifications, drawing or samples, if any.
- 12.2 a) Guarantee period for **Supply** packages shall be eighteen (18) months from the date of last dispatch or as per SCC whichever is later.
- b) Guarantee period for **Turnkey** packages shall be as stipulated in Special Conditions of Contract or otherwise, 18 calendar months from the date of completion of supplies or 12 calendar months from the date of satisfactory commissioning of the package, whichever is later. Seller/ Contractor's liability in respect of any complaints, defects and claims shall not be limited to supply and

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installation of replaced parts free of charge, or repair of defective parts to the extent that such replacements are attributable to or arise from faulty workmanship, material or design, in the manufacture, of the stores but at the option of the Purchaser, to the payment of the value, expenditure and damages as mentioned hereafter, provided defects on being discovered are brought to the notice of the Seller/ Contractor within a period of three (3) months from the date of expiry of the guarantee period.

12.3 All replacements and repairs during the guarantee period shall be delivered and completed promptly and satisfactorily within a period of three months from the time of reporting the defect/ loss/ rejection etc. If the Seller/ Contractor so desires and the Purchaser agrees, subject to import control regulations, the replaced parts can be taken over by Seller/ Contractor or his representative or can be dispatched at Seller/ Contractor's cost. No claim, whatsoever shall be entertained by Purchaser on account of such replaced parts.

12.4 All the replaced and replenished stores shall also be guaranteed as per above clauses.

12.5 Decision of Purchaser with regard to Seller/ Contractor's liability and the amount involved, if any, payable by Seller/ Contractor under the guarantee shall be final, conclusive and binding. However, vendor's maximum liability will be limited to the total contract value including taxes, duties and freight.

13.0 DELIVERY / COMPLETION SCHEDULE

13.1 Supply of plant/equipment/stores shall not be considered complete until they have been inspected and accepted at the place and destination specified for delivery by the time stipulated under the terms & conditions of the Order/Contract. Mere payment by itself shall not constitute acceptance of the goods or materials in any manner, whatsoever.

13.2 Terms of delivery shall be FOR dispatch station for indigenous supplies.

13.3 Vendor shall strictly adhere to 'L2' schedule. In case of non compliance to agreed schedules / milestones, then it would be presumed that vendor / contractor is not fulfilling contractual obligations. BHEL reserves the right to take suitable action like operating "Risk & cost clause".

14.0 INSPECTION AND TESTING AT CONTRACTOR'S PREMISES

14.1 Purchaser's nominated Inspection Agency shall have at all reasonable times access to Seller/ Contractor's premises or works and shall have the power at all reasonable

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times to inspect drawings of any portion of the work or examine the materials and workmanship of the stores during their manufacture, and if part of the stores is manufactured at other premises, the Seller/Contractor shall arrange for inspection, examination and testing by the Inspection Agency as if the store is manufactured on the Seller/Contractor's premises.

Inspection calls should be given 15 working days in advance by indigenous supplier and 30 working days in advance by foreign supplier.

Such inspection, examination and testing by itself shall not relieve the Seller/Contractor from any obligation under the Order/Contract.

14.2 Seller/Contractor shall give Inspection Agency reasonable notice of any material being ready for testing and the Inspection Agency shall (unless the inspection of tests is voluntarily waived) attend at the Seller/Contractor's premises within fifteen (15) days of the date on which the material is notified as being ready. All standard shop tests, physical and chemical tests required by the standards or as may be prescribed or approved as per Order/ Contract shall be conducted by the Seller/Contractor. Purchaser/Inspection Agency reserves the right to waive any of the above tests requirements and to prescribe new tests, if found necessary, to complete the work so as to conform to the best practices. Seller/Contractor shall forthwith forward to the Inspection Agency, duly certified copies of the test certificates in quadruplicate, for approval. Further copies of the shop test certificates shall be bound with the instruction manuals referred to in "Seller/Contractor's documents, drawings and instruction manuals".

14.3 Where the Order/Contract provides for tests/inspections at the premises or works of the Seller/Contractor or any sub-contractor, the Seller/Contractor, except specified otherwise, shall provide free of charge such assistance, labour, materials, electricity, fuel, water, stores, apparatus, measuring instruments and test equipment including any other facilities as may be reasonably required to carry out such tests efficiently.

14.4 INSPECTION MEASURING AND TEST EQUIPMENTS

14.4.1 Inspection Measuring and Test Equipments (IMTE) whether used by the Seller/Contractor or sub-contractor shall be calibrated, maintained and controlled. Calibration shall be valid and IMTE maintained in sound condition during usage.

14.4.2 In addition to above, Seller/ Contractor shall ensure the following :

- a) Measurement uncertainty is known and consistent with required measurement capability of the IMTE.

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- b) Selection of IMTEs is compatible with the necessary accuracy and precision of required measurement.
- c) IMTEs are calibrated at the required intervals against certified equipments having known valid relationship to nationally recognized standards, at recognized calibration labs.
- d) Calibration records are available and traceable to the particular IMTE.
- e) In case, during recalibration, the IMTE is found out of calibration, report on action taken to validate the previous results along with both calibration records of the IMTE to be furnished to Inspection Agency.
- f) IMTEs are stored, handled and preserved such that accuracy and fitness are maintained and safeguarded from adjustments.

NOTE: Purchaser's decision on acceptability of the product in such cases shall be binding.

14.4.3 Responsibility of usage of valid and calibrated IMTEs by his sub-contractor(s) shall be of the Seller/ Contractor.

14.4.4 In case, calibration records are required by purchaser, copies of the same shall be furnished.

14.5 Seller/Contractor shall be fully responsible for the Quality of products supplied by sub-contractors.

15.0 MATERIAL DESPATCH CLEARANCE CERTIFICATE (MDCC)

15.1 When the tests have been satisfactorily completed at Seller/Contractor's works, the Inspection Agency shall issue a certificate to that effect within fifteen (15) days after completion of the tests, but if the tests were not witnessed by the Inspection Agency or his representative, the certificate would be issued within fifteen (15) days after receipt of the test certificates by the Purchaser.

15.2 Purchaser/Owner will issue MDCC to the Seller/Contractor based on inspection report/ test certificates.

15.3 **Seller/ Contractor shall not dispatch any material before issue of MDCC by Purchaser/Owner.**

15.4 Satisfactory completion of tests or issue of MDCC shall not bind the Purchaser/Owner to accept the supply/ equipment should it, on further tests after erection, be found not to comply with the contract provisions.

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16.0 DELIVERY FAILURE AND TERMINATION/LIQUIDATED DAMAGES

16.1 Timely dispatch/delivery and completion of other schedules as stipulated in Order/Contract shall be the essence of Order/Contract. If the Seller/Contractor fails to complete the dispatch/delivery and other schedules within the time period stipulated in Order/Contract, or within any extension of time granted by Purchaser, it shall be lawful for Purchaser to recover damages for breach of Order/Contract without prejudice to any other rights and/or remedies provided for, in the Order/Contract and hereunder. For any delay not attributable to the Seller/Contractor, the Seller/Contractor must report the same to Purchaser immediately.

16.2 DELAYED DELIVERY

16.2.1 Purchaser reserves the right to recover from the Seller/Contractor, as agreed liquidated damages and not by way of penalty, a sum equivalent to half ($\frac{1}{2}$) percent of the total contract price per week or part thereof, subject to a maximum of ten (10) percent of the total contract price **excluding** elements of taxes, duties and freight, if the Seller/ Contractor fails to deliver any part of the ordered stores within the period stipulated in the Order/Contract.

For Turnkey packages (Supply and E&C in vendor's scope), Liquidated Damages shall be levied on the total contract value of both Supply and E&C orders (excluding taxes, duties and freight) if E&C completion of the package is delayed beyond the contractual completion date or extension thereof. Liquidated Damages will not be withheld from supply payment.

NOTE:

1. LR/ GR/ RR date for indigenous supplies and AWB/ BL date for FOB contracts shall be treated as the date of dispatch for levying LD as per Clause 16. However, for indigenous supply if receipted LR date is beyond three months from the date of LR, such excess period shall also be considered for LD purpose.
2. In case of any amendment/revision, LD shall be linked to the amended/revised contract value and delivery date(s).
3. If Order/ Contract involves two or more Units/ Sets/ Lots, then Liquidated Damages shall be for order/ contract value of the delayed Unit/ Set/ Lot, provided delivery stipulated in the Order/ Contract is Unit/ Set/ Lot wise, however total LD amount shall be limited to 10% of total order value. (excluding taxes, duties and freight)

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16.2.2 Purchaser reserves the right to purchase from elsewhere on account of and at the risk and cost of Seller/Contractor, with notice to Seller/Contractor, the stores due for delivery but not so delivered, or their equivalent without cancelling the Order/Contract in respect of stores not yet due for delivery. The manner and method of such purchase shall be at the discretion of the Purchaser. The actual cost incurred for such purchases along with the departmental charges @ 15% will be recovered from the bidder.

16.2.3 Purchaser reserves the right to cancel the Order/Contract or a portion thereof for the stores not so delivered at the risk and cost of the Seller/Contractor and the Seller/Contractor shall be liable to the Purchaser for any excess cost thereof. The actual cost incurred for such purchases along with the departmental charges @ 15% will be recovered from the bidder.

16.2.4 Seller/Contractor shall continue performance of the Order/Contract, under all circumstances, to the extent not cancelled.

17.0 INSURANCE

17.1 Insurance shall be arranged by BHEL.

17.2 Vendors shall inform the Underwriters, appointed/ nominated by BHEL/ Purchaser, the details of dispatches under intimation to BHEL such as LR No. and date, Truck No., P.O. No., project and value.

17.3 Insurance as applicable for field work such as third party liability, workmen compensation, Seller/Contractor's own Tools & Plants and automobile shall be arranged by the Seller/ Contractor.

18.0 INTER-CHANGEABILITY AND CHANGES

18.1 All similar components or parts of similar equipment supplied by Seller/Contractor shall be interchangeable with one another.

18.2 Even though all the work and materials necessary for satisfactory completion of the works may not be detailed in the specifications and schedules, the cost will be considered to be within the contract price and no extra charges shall be payable. However, if there are substantial changes in the specifications of the stores/plant, consequential changes in prices shall be mutually agreed between Purchaser and Seller/Contractor.

19.0 PACKING

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- 19.1 Packing shall be in conformity with specifications and shall be such as to ensure prevention of damages, corrosion, deterioration, shortages, pilferage and loss in transit or storage.
- 19.2 In case of shipment by sea, the packing shall be sea-worthy and of international standards.
- 19.3 Packing List shall be submitted as per standard format along with advance set of documents for claiming payment which shall also indicate:-
- Packing size.
 - Gross weight and net weight of each package.
 - Contents of the package with quantity of each item separately.

19.4 **PACKING FOR SPARES**

Different types of spares i.e. start-up/commissioning spares and initial spares (Mandatory spares and recommended O&M spares) are to be packed separately. Mandatory and Recommended Spares shall not be packed with main equipment but shall be packed separately.

Packing of Mandatory Spares should have a Red colour band all around the box/package and words "MANDATORY SPARES" written in red colour, Project, Package description, BHEL's PO No. and date should also be clearly mentioned on the box.

19.5 **COLOUR CODING OF TAGS/MARKING/STICKERS**

- 19.5.1 Aluminium stickers are required to be attached to large components but plastic sheet tags should be tied with small components, giving details like purchase order, description of the component, quantity etc.
- 19.5.2 Tags should be of the colour as mentioned below:
- | | |
|-------------------------------|-----------------------|
| Main equipment | : Yellow or White tag |
| Mandatory spares | : Pink or Red tag |
| Start-up/Commissioning spares | : Blue tag |
| O&M spares | : Green tag |

- 19.5.3 Similar colour scheme to be followed wherever stickers are pasted on components.

20.0 **STORAGE INSTRUCTIONS**

Successful tenderer shall be required to submit detailed instructions for storage of supplies within three months of date of issue of LOA/ Order/ Contract.

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21.0 MATERIAL RECEIPT CERTIFICATE

Seller/Contractor shall arrange Material Receipt Certificate from the project site, duly signed by Purchaser/Owner Site Engineer after receipt & physical verification of the material at site, wherever E&C is in the scope of Seller/ Contractor.

For Supply packages, Material Receipt Certificate shall be arranged by BHEL. Vendor to provide copy of receipted LR's to enable BHEL to obtain MRC from site.

22.0 CONSIGNEE'S RIGHT OF REJECTION

- 22.1 Notwithstanding any approval of Purchaser or Engineer in respect of stores or materials or other particulars or work or workmanship involved in performance of order/contract (with or without any test carried out by Seller/Contractor or Inspection Agency or under direction of Contract Engineer), and notwithstanding delivery of the stores where so provided to the consignee, it shall be lawful for the consignee, on behalf of the Purchaser, to reject the stores or any part/ portion of consignment thereof, within 30 days after actual delivery at the stipulated place or destination, if such stores or part/ portion of consignment thereof is not in conformity with terms and conditions of order/contract whether on account of any loss, storage, deterioration or damage before despatch or otherwise, whatsoever.
- 22.2 Rejected goods or materials shall be removed by Seller/Contractor within a period of 15 days from the date of receipt of notice of such rejection. The expenses to be incurred in respect thereof shall be borne entirely by the Seller/Contractor.

23.0 RISK IN STORES (FOR E&C CONTRACTS)

Seller/ Contractor shall perform the order/ contract in all respects in accordance with terms and conditions thereof. Stores and every constituent part thereof, whether in possession or control of the Seller/Contractor, his agents or servants, or a carrier, or in joint possession of Seller/ Contractor, his agent or servants and Purchaser, his agents or servants, shall remain in every respect at the risk of Seller/Contractor until their actual delivery to consignee at the stipulated place or destination or where so provided in acceptance of offer, until their delivery to a person specified by Purchaser as interim consignee for the purpose of despatch to the consignee. Seller/Contractor shall be solely responsible for all losses, destructions, damages or deterioration to the stores from any cause whatsoever, while the stores await dispatch after approval by the Inspection Agency.

24.0 SHORTAGES/DAMAGES

24.1 FOR SUPPLY PACKAGES

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- a) Shortages in sound cases shall be replenished free of cost by the vendor, as early as possible.
- b) For shortages/damages during transit/ handling at site, vendor shall supply replacements, as early as possible, at the old contractual rates upon intimation to vendor within 3 months of receipted LR.

24.2 FOR E&C PACKAGES

Any shortages or damages during unloading and handling at site, including at the time of erection and commissioning, shall be made good by the Seller/ Contractor at his risk and cost, to meet the project schedule. In case of faults/discrepancies in any material, component, sub-assembly, assembly, etc., the same shall be supplied/replenished free of cost to enable the equipment to be put to service.

25.0 CONFIDENTIALITY

Seller/Contractor shall, at all times, undertake to maintain complete confidentiality of all data, information, software, drawings & documents, etc. belonging to the Purchaser and also of systems, procedures, reports, input documents, manuals, results and any other company documents discussed and/or finalised during the course of execution of order/contract.

26.0 DEFAULT/BREACH OF CONTRACT, INSOLVENCY AND RISK PURCHASE

- 26.1 If Seller/Contractor fails to deliver goods or materials or any installment thereof within the period(s) fixed for such delivery or delivers goods or materials not of the contracted quality and failing to adhere to the contract specifications or at any time repudiates or otherwise abandons the contract before expiry of such period or refuses or is unable to supply goods or materials covered by the Order/Contract either in whole or in part or otherwise fails to perform the Order/Contract or commits any breach of Order/Contract not herein specifically provided for or in the event of the death or insanity or if the Seller/Contractor being an individual or if a firm on a partnership thereof, shall at any time, be adjudged insolvent or shall have a receiving order for administration of his estate made against him or shall take any proceeding for composition under any Insolvency Act for the time being in force or make any assignment of the Order/Contract or enter into any arrangement or composition with his creditors or suspend payment or if the firm is dissolved under the Partnership Act or if the Seller/Contractor being a company is wound up voluntarily or by order of a Court or a Receiver, Liquidator or Manager on behalf of the debenture holders and creditors is appointed or circumstances shall have arisen which entitles the Court of debenture holder and creditors to appoint a receiver, liquidator or manager, the purchaser without prejudice to his right to recover any

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expenses, losses or damages to which the Purchaser may be put to incur or sustain by reason of Seller/Contractor's default or breach of Order/Contract, Purchaser shall be entitled to cancel the Order/Contract either in whole or portion thereof without compensation to Seller/Contractor and if the Purchaser so desires, may procure upon such terms and in such manner as deemed appropriate, stores not so delivered or others of similar description where stores exactly complying with particulars are not, in the opinion of the Purchaser, which shall be final, readily procurable, at the risk and cost of the Seller/Contractor and the Seller/Contractor shall be liable to the Purchaser for any excess costs provided that the Seller/Contractor shall continue the performance of the Order/Contract to the extent not cancelled under the provisions of this clause. The Seller/Contractor shall on no account be entitled to any gain on such repurchases.

Except for Clause 26.2, vendor's maximum liability will be limited to the total contract value including taxes, duties and freight.

26.2 Recovery on account of purchases made by Purchaser at the risk and cost of Seller/Contractor shall be worked out as follows:

a. Excess of new purchase cost over old purchase cost, where the total value of new PO is more than total value of old PO.

And

b. Additional 15% overheads as departmental charges on the ex-works value of new PO" as per clause 16.2.2 and 16.2.3 above.

27.0 TERMINATION OF CONTRACT

27.1 Purchaser shall have the right to cancel Order/Contract, wholly or in part, in case they are obliged to do soon account of any decline, diminution, curtailment or stoppage of their business and in that event, the Seller/Contractor compensation claim shall be settled mutually.

27.2 Purchaser shall have the right to cancel order/contract at the risk and cost of Seller/Contractor in case either the Seller/Contractor himself or any of his representative or agent is found to have been a previous employee of the Purchaser immediately before retirement and has within a period of two years of such retirement accepted the employment of the Seller/Contractor either as a Seller/Contractor or as an employee without having obtained prior permission of Purchaser.

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27.3 In case of cancellation of main supply order/ contract, all other associated orders/ contracts like mandatory spares/ recommended spares/ E&C/ supervision of E&C would also get cancelled.

28.0 TRANSFER, SUB-LETTING/ASSIGNMENT/SUB-CONTRACTING

28.1 Seller/Contractor shall not sublet, transfer or assign order/contract or any part thereof or interest therein or benefit or advantage thereof save with the prior consent in writing of Purchaser. In the event of Seller/Contractor sub-letting, transferring or assigning order/contract or any part thereof or interest therein or benefit or advantage thereof without such permission, the Purchaser shall be entitled to cancel the Order/Contract and to purchase the stores from elsewhere at risk and costs of Seller/Contractor and the Seller/Contractor shall be liable for any loss or damage which Purchaser may sustain in consequence of or arising out of such risk purchase.

28.2 If Seller/Contractor is an individual or proprietary concern and the individual or the proprietor dies or the partnership is dissolved or substantially affected, then unless the Purchaser is satisfied that legal representative of individual seller/contractor or proprietor of proprietary concern and surviving partners of partnership firm are capable of carrying out and completing the order/contract, the Purchaser shall be entitled to cancel the order/ contract as to its incomplete portion and without being in any way liable to payment of any compensation to estate of seller/contractor and/or to surviving partners of seller's/contractor's firm on account of cancellation of the order/contract.

28.3 Decision of Purchaser that legal representatives of deceased seller/contractor or surviving partners of the seller's/contractor's firm can not carry out and complete the order/contract shall be final and binding on the parties hereto.

28.4 Terms and Conditions shall not get affected in case of merger/amalgamation/takeover/re-arrangement etc.

29.0 FORCE MAJEURE

29.1 Notwithstanding anything contained in Clause 13.0, if at any time during the continuance of the Order/Contract, the performance in whole or in part by either party of any obligations under the Order/Contract shall be prevented or delayed by reason of any war hostilities, acts of the public enemy, restrictions by Govt. of India, civil commotion, sabotage, fires, floods, explosion, epidemics, quarantine restrictions, strike, lock-outs, or acts of God (hereinafter referred to as 'event'), then, provided notice of the happening of such event is given by either party to the other within fifteen (15) days from the date of occurrence thereof, neither party shall by

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reason of such event be entitled to terminate the Order/Contract nor shall have any claim for damages against each other in respect of such non-performance and delay in performance. Performance under the Order/Contract shall be resumed immediately after such event has come to an end or ceased to exist and decision of Purchaser as to whether the deliveries have to be resumed or not shall be final, conclusive and binding on the parties hereto.

- 29.2 In the event of the parties hereto not able to agree that a force majeure event has occurred, the parties shall submit the disputes for resolution pursuant to the provisions hereunder, provided that the burden of proof as to whether a force majeure event has occurred shall be upon the party claiming such an event.
- 29.3 Notwithstanding the above provisions, Purchaser shall reserve the right to cancel the Order/Contract, wholly or partly, in order to meet the overall project schedule and make alternative arrangements for completion of delivery and other schedules.

30.0 INDEMNIFICATION

Seller/Contractor shall fully indemnify and keep indemnified the Purchaser against all claims of whatsoever nature arising during the course and out of the execution of this Order/Contract.

31.0 SETTLEMENT OF DISPUTES

- 31.1 Except as otherwise specifically provided in the Order/Contract, all disputes concerning questions of the facts arising under the Order/Contract, shall be decided by Purchaser, subject to written appeal by the Seller/Contractor to the Purchaser, whose decision shall be final.
- 31.2 Any dispute or difference shall be, to the extent possible, settled amicably between the parties hereto, failing which the disputed issues shall be settled through arbitration.
- 31.3 Seller/Contractor shall continue to perform the order/contract, pending settlement of dispute(s).

32.0 ARBITRATION

- 32.1 In the event of any dispute or difference arising out of execution of order/ contract or the respective rights and liabilities of the parties or in relation to interpretation of any provision by Seller/Contractor in any manner touching upon order/ contract, such dispute or difference shall (except as to any matters, the decision of which is

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specifically provided for therein) be referred to the arbitration of the person appointed by the competent authority of Purchaser.

Subject as aforesaid, the provisions of Arbitration and Conciliation Act, 1996 (India) or statutory modifications or reenactments thereof and the rules made thereunder and for the time being in force shall apply to the arbitration proceedings under this clause. The venue of arbitration shall be at Bangalore.

32.2 In case of Order/Contract on Public Sector Enterprises (PSE) or a Govt. Deptt., the extant guidelines of Govt. of India shall be followed.

32.3 The cost of arbitration shall be borne equally by the parties.

33.0 LAWS GOVERNING THE CONTRACT

Contract, including all matters connected with contract, shall be governed by the Indian Law, both substantive and procedural, for the time being in force including modification thereto, and shall be subject to the exclusive jurisdiction of the Indian courts at Bangalore.

34.0 JURISDICTION OF COURT

Courts at Bangalore shall have exclusive jurisdiction to decide the dispute, if any, arising out of or in respect of the contract(s) to which these conditions are applicable.

35.0 ORDER OF PRECEDENCE

The order of precedence shall be NIT/ RFQ, Price format, Special Conditions of Contract (SCC), General Conditions of Contract (GCC) (if applicable).

36.0 SUPPLIER PERFORMANCE MONITORING AND RATING SYSTEM

Seller/Contractor's performance will be evaluated as per Supplier Performance Monitoring and Rating System of BHEL. Please refer BHEL website www.bhel.com for details.

37.0 DEALING WITH BANNED SUPPLIERS/ CONTRACTORS IN BHEL

Offers of the bidders who are on the banned list, as also the offers of the bidders who engage the services of the banned firms, shall be rejected. The list of banned firms is available on BHEL website www.bhel.com.

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38.0 E&C CLAUSES APPLICABLE FOR TURNKEY PACKAGES :

- 38.1 Receipt, unloading, storage of materials at site, security of the same round-the-clock & loading / unloading / transportation of materials to different erection locations is included in the scope of the bidder. Necessary manpower for all these activities will be made available at site from the date of opening of site office until closure of the project.
- 38.2 All consumables required for the erection are included in the scope of the bidder.
- 38.3 All material handling equipments like crane, fork lifter, tripods etc. are included in the scope of the bidder.
- 38.4 Providing tarpaulins & covering materials as required for protection of materials at temporary storage place is included in the scope of the bidder.
- 38.5 Bidder should have valid license to work in the state of project, if not, the same should be produced within one month of award of the contract.
- 38.6 Insurance by the bidder for his workers and tools & tackles workmen compensation insurance. Bidder shall also take third party insurance liability @ Rs. 2 lakhs per occurrence and maximum of Rs.10 lakhs.
- 38.7 Bidder should follow all the labour laws as applicable at the state/place of work including payment of minimum wages fixed by state government.
- 38.8 Round-the-clock security for the temporary stores, at temporary storage place & for the erected equipments till handing over to customer (by a reputed agency) is in the scope of the bidder.
- 38.9 Against any theft or loss of materials from the stores or from the erected equipments, coordination with local police authorities lodging the fir & obtaining the receipt for the same. Coordination with the insurance agencies also is in the scope of the bidder.
- 38.10 Any material or Service to be issued / rendered by BHEL (unless specially stipulated to be free of cost / cost recoverable basis) to the bidder on their demands, the same shall be made available along with 15% departmental charges over and above the cost. BHEL shall not be responsible for any delay due to this reason and delay shall be to the bidder's account.

38.11 RISK & COST

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BHEL reserves the following rights in respect of this contract during the original contract period or its extensions if any, as per the provisions of the contract, without entitling the contractor for any compensation :-

- a) To withdraw any portion of work and/or to restrict/alter quantum of work as indicated in the contract during the progress of work and get it done through other agencies to suit BHEL's commitment to its customer or in case BHEL decides to advance the date of completion due to other emergent reasons/ BHEL's obligation to its customer.
- b) To terminate the contract or get any part of the work done through other agency or deploy BHEL's own/hired/otherwise arranged resources , at the risk and cost of the contractor after due notice of a period of two weeks by BHEL, in the event of:-
 - i) Contractor's continued poor progress
 - ii) Withdrawal from or abandonment of the work before completion of the work
 - iii) Contractor's inability to progress the work for completion as stipulated in the contract
 - iv) Poor quality of work
 - v) Corrupt act of Contractor
 - vi) Insolvency of the Contractor
 - vii) Persistent disregard to the instructions of BHEL
 - viii) Assignment, transfer, sub-letting of contract without BHEL's written permission
 - ix) Non fulfillment of any contractual obligations.
- x) In the opinion of BHEL, the contractor is overloaded and is not in a position to execute the job as per required schedule .
- c) To meet the expenses including BHEL overheads on the differential cost at 15%, over and above the Liquidated damages/penalties arising out of "Risk & Cost" as explained above under SI. No. b BHEL shall recover the amount from any money due from Contractor, or from any money due to the Contractor including Security Deposit/ BG, or by forfeiting any T&P or material of the contractor under this contract or any other contract of BHEL or by any other means or any combination thereof

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- d) To terminate the contract or to restrict the quantum of work and pay for the portion of work executed in case BHEL's contract with their customer are terminated for any reason, as per mutual agreement:
- e) To effect recovery from any amounts due to the contractor under this or any other contract or in any other form, the moneys BHEL is statutorily forced to pay to anybody, due to contractor's failure to fulfill any of his obligations. BHEL shall levy overheads of 15% on all such payments along with interest.
- f) While every endeavour will be made by BHEL to this end, they cannot guarantee uninterrupted work due to conditions beyond their control. The Contractor will not be entitled for any compensation /extra payment on this account unless otherwise specified elsewhere in the contract.

38.12 , **Safety and Environment (HSE) requirements** :

All safety rules and codes applied by the Client/BHEL at site shall be observed by the contractor without exception. The contractor shall be responsible for the safety of the equipment/material and works to be performed by him and shall maintain all light, fencing guards, slings etc. or other protection necessary for the purpose. Contractor shall also take such additional precautions as may be indicated from time to time by the Engineer with a view to prevent pilferage, accidents, fire hazards. Due precautions shall be taken against fire hazards and atmospheric conditions. Suitable number of Clerical staff, watch and ward, store keepers to take care of equipment/materials and construction tools and tackles shall be posted at site by the contractor till the completion of work under this contract.

The contractor shall arrange for such safety devices as are necessary for such type of work and carry out the requisite site tests of handling equipment, lifting tools, tackles etc. as per prescribed standards and practices.

Contractor has to ensure the implementation of Health, Safety and Environment (HSE) requirements as per HSE management system manual (Document no-IS/HSE/CSSP/01) enclosed with technical documents. The contractor has to assist in HSE audit by BHEL/Customer and submit compliance Report. The contractor has to generate and submit record/reports as per HSE plan/activities as per instruction of BHEL/Customer.

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ANNEXURE No.	DESCRIPTION
I	OFFER SUBMISSION AS PER NIT
II	DEVIATION SHEET COST OF WITHDRAWAL)
III	DECLARATION
IV	CONTRACT PERFORMANCE BANK GUARANTEE
V	GUIDELINES FOR FOREIGN SUPPLIERS AND INDIAN AGENTS OF FOREIGN SUPPLIERS
VI	REQUEST FOR ISSUE OF FORM-C
VII	NEFT DETAILS
VIII	LOADING CRITERA
IX	INTEGRITY PACT
X	LIST OF CONSORTIUM BANKS
XI	REVERSE AUCTION GUIDLINES
XII	NO DEVIATION FORMAT
XIII	AUTHORISED SIGNATORY

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ANNEXURE-I

(To be filled up by the Bidder)

Ref. No.:

Date :

M/s Bharat Heavy Electricals Ltd.,
Industrial Systems Group
Prof. CNR Rao Circle
Malleshwaram
Bangalore - 560012

Attention : Shri

Dear Sir,

- 1 Having examined the tender documents against your tender Enquiry No _____ dated _____ and having understood the provisions of the said tender documents and having thoroughly studied the requirements of BHEL related to the work tendered for, in connection with _____ (name of work & project site), we hereby submit our offer for the proposed work in accordance with terms and conditions mentioned in the tender documents, at the prices quoted by us in your price schedule format and as per the indicated delivery schedule.
2. If the work or any part thereof is awarded to us, we undertake to submit security-cum-contract performance bank guarantee as per your requirement.
3. We have annexed to this tender the following documents:-

Part-I (Techno Commercial Bid) - in a properly sealed cover.

 - a) Complete Techno-Commercial Offer (in five sets).
 - b) Unpriced copy of deviation sheet (cost of withdrawal) – Annexure-II
 - c) Un-priced copy of Price Schedule using format given by BHEL.
 - d) Any other documents (please specify).

Part-II (Price Bid along with Priced Annexure-II) - in a separate, properly sealed cover, in the format given by BHEL.

Thanking you,

Yours faithfully,

(Signature of the bidder with Name, Designation and Company's Seal)

PROJECT:-
PACKAGE:-
NAME OF VENDOR:-

SL NO	VOULME/ SECTION	PAGE NO.	CLAUSE NO.	TECHNICAL SPECIFICATION/ TENDER DOCUMENT	COMPLETE DESCRIPTION OF DEVIATION	COST OF WITHDRAWAL OF DEVIATION	PORTION OF PRICE SCHEDULE ON WHICH COST OF WITHDRAWAL OF DEVIATION IS APPLICABLE	NATURE OF COST OF WITHDRAWAL OF DEVIATION (POSITIVE/ NEGATIVE)	REASON FOR QUOTING DEVIATION	REMARKS
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TECHNICAL DEVIATIONS

COMMERCIAL DEVIATIONS

PARTICULARS OF BIDDERS/ AUTHORISED REPRESENTATIVE

NAME	DESIGNATIONS	SIGN & DATE	

NOTES:

- For self manufactured items of bidder, cost of withdrawal of deviation will be applicable on the basic price (i.e. excluding taxes, duties & freight) only.
- For directly dispatchable items, cost of withdrawal of deviation will be applicable on the basic price including taxes, duties & freight.
- All the bidders have to list out all their Technical & Commercial Deviations in detail in the above format on cost basis (if any).
- Any deviation not mentioned above and shown separately will not be taken cognizance of.
- Bidder shall submit duly filled unpriced copy of above format indicating "quoted" in "cost of withdrawal of deviation" column of the schedule above along with their Techno-commercial offer, wherever applicable.
- Bidder shall furnish price copy of above format along with price bid.
- The final decision of acceptance/ rejection of the deviations quoted by the bidder shall be at discretion of the Purchaser.
- Bidders to note that any deviation (technical/commercial) not listed in above and asked after Part-I opening shall not be considered.
- For deviations w.r.t. Payment terms, Liquidated damages, Firm prices and submission of E1/ E2 forms before claiming 10% payment, if a bidder chooses not to give any cost of withdrawal of deviation loading as per Annexure-VIII of GCC, Rev-06 will apply. For any other deviation mentioned in un-priced copy of this format submitted with Part-I bid but not mentioned in priced copy of this format submitted with Priced bid, the cost of withdrawal of deviation shall be taken as NIL.
- Any deviation mentioned in priced copy of this format, but not mentioned in the un-priced copy, shall not at all be accepted.
- All techno-commercial terms and conditions of NIT shall be deemed to have been accepted by the bidder, other than those listed in unpriced copy of this format.
- Cost of withdrawal is to be given separately for each deviation. In no event, bidder should club cost of withdrawal of more than one deviation else cost of withdrawal of each deviation which have been clubbed together shall be considered as NIL.
- In case nature of cost of withdrawal (positive/negative) is not specified, it shall be assumed as positive.
- In case of discrepancy in the nature of impact (positive/negative), positive will be considered for evaluation and negative for ordering.

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ANNEXURE - III

DECLARATION

It is hereby declared that the original/ revised* price bids for _____

_____ (Name of Package) for
_____ project

is complete in all respects and contains prices for complete scope of supply, including tests etc., as per BHEL's requirement. If in the original/ revised* price bids where itemized price is not available for any part of scope of supply, including tests etc. for completion of the package, the same should be treated to have been included in our original/ revised* price bid.

It is also agreed that no further chance for seeking clarification/ confirmation to any missing point will be necessary.

Absence of itemized prices against some items does not mean that they are not included. Even though itemized prices are given for major items, those items which are not specially shown, are also included to meet the entire system as per BHEL requirements.

Signature of authorised Representative

Name and Designation :

Name & Address of the Bidder

Date

Forwarded to:

BHARAT HEAVY ELECTRICALS LTD

Industrial Systems Group

Prof. CNR Rao Circle

Malleswaram

Bangalore - 560012

* (Please delete whichever is not applicable)

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ANNEXURE - IV

PROFORMA OF PERFORMANCE BANK GUARANTEE (FOR INDIEGNOUS PURCHASE ORDERS)

- Note: 1) To be executed in Rs 100/- Non-Judicial stamp paper.
2) To be submitted to MM Dept. directly by the Banker

PERFORMANCE GUARANTEE (PROFORMA OF BANK GUARANTEE)

THIS DEED OF GUARANTEE made and executed on the _____ day of _____(month) _____(year), by the _____ (Bank), registered under the Companies Act 1956/Nationalised Bank constituted under the Banking Companies (acquisition and transfer of undertakings) Act/ constituted under the State Bank of India Act / Subsidiary Banks Act, having its registered / head office at _____ (Hereinafter called 'guarantor ' which term shall mean and include its successors and assigns)

IN FAVOUR OF BHARAT HEAVY ELECTRICALS LIMITED

a company registered under the companies Act, 1956 having its registered office at BHEL House at Siri Fort , New Delhi-100 049 and its Industrial Systems Group Division at Malleswaram, Bangalore-12 (hereinafter referred to as the 'Company' Which term shall include its successors and assigns):

Whereas the company has placed an order on _____ (State the name of the Seller- company / firm and its address) (hereinafter referred to as the 'Supplier' which term shall mean and include its liquidators, successors and assign) for the supply of system under Purchase Order No _____Dt _____.

AND WHEREAS the supplier has agreed to supply the materials and carryout the works as detailed and in accordance with the terms set out in the said order.

AND WHEREAS the Contract inter-alia provides that the SUPPLIER shall furnish to the Company a sum of Rs..... (Rupees.....)

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towards security deposit for due and faithful performance of the CONTRACT in the form and manner specified therein.

AND WHEREAS the SUPPLIER has approached the GUARANTOR and in consideration of the arrangement arrived at between the SUPPLIER and the GUARANTOR, the GUARANTOR has agreed to give the Guarantee as hereinafter mentioned in favour of the COMPANY.

NOW THIS DEED WITNESSES THAT in pursuance of the above said agreement, the guarantor hereby agrees and covenants with company is as follows :-

- 1) That during the period this contract of Guarantee remains effectual, the guarantor shall be liable in respect of the amount due and owing to the company in respect of the payments to the extent of Rs _____ (in words) _____ against any loss or damage caused to or suffered by the company by reasons of any breach of the terms of the said Purchase order by the supplier.
- 2) The Guarantor hereby undertakes to pay the amounts due and payable under this guarantee without any demur, merely on demand from the company intimating that the amount claimed is due by way of loss or damage caused to or suffered or would be caused or suffered by the supplier of any terms contained in the said Purchase order. Any such demand made on the guarantor shall be conclusive as regards the amount due and payable by the Guarantor irrespective of the fact whether the Supplier admits or denies.
- 3) The Guarantor further agrees that the agreement herein contained shall remain in force and effect till all the supplies to be made / Works to be performed / Services to be rendered under the said Purchase order are completed to the entire satisfaction of the company or till company certifies that the terms and conditions of the said order have been fully and properly carried out by the said supplier and accordingly discharges the Guarantee. Unless a demand or claim under this guarantee is made on the guarantor in writing on or before the expiry of claim period indicated in clause 6 below , the guarantor shall be discharged from all the liability under this guarantee thereafter.
- 4) The guarantor further agrees with the company that the company shall have the fullest liberty without the consent of the guarantor and without effecting in any manner the obligations of the guarantor hereunder to vary any of the terms of the

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said order or extend the time of performance by the said supplier from time to time or refrain from exercising the power exercisable by the company against the said supplier or to forebear or omit to enforce any of the terms and conditions relating to the said order, and the guarantor shall not be relieved of its liability in whole or in part, by reason of any act, commission or forbearance on the part of the company or by reason of any such variation, or extension being granted to the said supplier or by reason of any such matter or thing whatsoever which under the law relating to sureties would but for this provision have effect of so relieving the guarantor.

- 5) The guarantor undertakes not to revoke this guarantee during the period it is in force except with the previous consent of the COMPANY in writing, and agree that any liquidation or winding up or dissolution or any change in the constitution of the SUPPLIER or the GUARANTOR shall not discharge the GUARANTOR's liability hereunder.
- 6) Notwithstanding anything herein above contained, the liability of the guarantor under these presents is restricted to Rs_____. The guarantee shall be in force till its expiry on _____. Unless a demand is made on the guarantor within THREE months from the date of expiry, all the liability of the guarantor under this guarantee shall stand fully discharged. The decision of the claimant in regard to breach of contract is final and binding on the Bank.

(Seal of the Bank to be affixed)

NOTES: (NOT TO BE TYPED)

1. A minimum of TWO Bank Official Signatories
2. Signatories to sign on all pages of the Bank Guarantee
3. Any correction to be validated by the Banker Signatories
4. One common e-mail ID of issuing branch and e-mail & contact no of at least one issuing official should be provided on PBG forwarding letter.

FOREIGN SUPPLIERS & INDIAN AGENTS OF FOREIGN SUPPLIERS

1. BHEL shall deal directly with foreign vendors, wherever required, for procurement of goods/ services. However, if the foreign Principal desires to avail the services of an Indian Agent, then the foreign Principal should ensure compliance to regulatory guidelines – which require mandatory submission of an Agency Agreement.
2. It shall be incumbent on the Indian Agent and the foreign Principal to adhere to the relevant guidelines of Government of India, issued from time to time.
3. An Indian Agent of foreign Origin Equipment Manufacturer (OEM)/ Principal is an individual, a partnership, an association of persons, a private or public company, that carries out specific obligation(s) towards processing of BHEL tender or finalization or execution of BHEL's contract on behalf of the foreign supplier.
4. The Agency Agreement should specify the precise relationship between the foreign OEM/ Principal and their Indian Agent, and their mutual interest in the business. All services to be rendered by the Agent/ Associate, whether of general nature or in relation to the particular contract, must be clearly stated by the foreign Supplier/ Indian Agent. Any payment which the Agent or Associate receives in India or abroad from the OEM/ Principal, whether as commission or as general retainer fee should be brought on record in the Agreement and be made explicit in order to ensure compliance to laws of the country.
5. Any agency commission to be paid by BHEL to the Indian Agent shall be in Indian currency only.
6. Tax deduction at source is applicable to the agency commission paid to the Indian Agent as per the prevailing rules.
7. In absence of any Agency Agreement, BHEL shall not deal with any Indian Agent (authorized representative/ associate/ consultant, or by whatever name called) and shall deal directly with the foreign OEM/ Principal only for all correspondence and business purposes.
8. In a tender, either the Indian Agent on behalf of the foreign OEM/ Principal or foreign OEM/ Principal itself can bid but both cannot bid simultaneously for the same item/ product in the same tender.
9. If an Agent submits bid on behalf of one OEM/ Principal, the same Agent shall not submit a bid on behalf of another OEM/ Principal in the same tender for the same item/ product.
10. The "Guidelines for Indian Agents of Foreign Suppliers" at Annexure–A shall apply in all such cases.
11. The supply and execution of Purchase Order/ Contract (including indigenous supplies/ services) shall be in the scope of foreign OEM/ Principal. The foreign OEM/ Principal should submit their offer inclusive of all indigenous supplies/ services and evaluation will be based on the 'Total Cost to BHEL'. In case foreign OEM/ Principal recommends placement of order(s) towards indigenous portion of supplies/ services on Indian supplier(s)/ agent on their behalf, the credentials/ capacity/ capability of the Indian supplier(s)/ agent to make the supplies/ services shall be checked by BHEL as per its extant guidelines of Supplier Evaluation, Approval & Review Procedure (SEARP) before opening of price bids. In this regard, details may be checked as per Annexure–B. It will be responsibility of the foreign

OEM/ Principal to get acquainted with the evaluation requirements of Indian supplier/ agent as per SEARP available on www.bhel.com.

The responsibility for successful execution of the contract (including indigenous supplies/ services) lies with the foreign OEM/ Principal. All bank guarantees to this effect shall be in the scope of the foreign OEM/ Principal.

Guidelines for Indian Agents of Foreign Suppliers

- 1.0 There shall be compulsory registration of agents for all Global (Open) Tenders and Limited Tenders. An agent who is not registered with BHEL shall apply for registration in the registration form in line with SEARP.
- 1.1 Registered agents will file an authenticated photocopy duly attested by a Notary Public/ Original certificate of the Principal confirming the Agency Agreement and giving the status being enjoyed by the Agent and the commission/ remuneration/ salary/ retainership being paid by the Principal to the Agent before placement of order by BHEL.
- 1.2 Wherever the Indian representatives have communicated on behalf of their Principals and the foreign parties have stated that they are not paying any commission to the Indian agents, and the Indian representative is working on the basis of salary or as retainer, a written declaration to this effect should be submitted by the party (i.e. Principal) before finalizing the order.

2.0 Disclosure of particulars of agents/ representatives in India (if any)

2.1 Tenderers of Foreign nationality shall furnish the following details in their offers:

- 2.1.1 The Bidder(s)/ Contractor(s) of foreign origin shall disclose the name and address of the agents/ representatives in India, if any, and the extent of authorization and authority given to commit the Principals. In case the agent/ representative be a foreign Company, it shall be confirmed whether it is existing Company and details of the same shall be furnished.
- 2.1.2 The amount of commission/ remuneration included in the quoted price(s) for such agents/ representatives in India.
- 2.1.3 Confirmation of the Tenderer that the commission/ remuneration, if any, payable to his agents/ representatives in India, may be paid by BHEL in Indian Rupees only.

2.2 Tenderers of Indian Nationality shall furnish the following details in their offers:

- 2.2.1 The Bidder(s)/ Contractor(s) of Indian Nationality shall furnish the name and address of the foreign Principals, if any, indicating their nationality as well as their status, i.e. whether manufacturer or agents of manufacturer holding the Letter of Authority of the Principal specifically authorizing the agent to make an offer in India in response to tender either directly or through the agents/ representatives.
- 2.2.2 The amount of commission/ remuneration included in the price (s) quoted by the Tenderer for himself.
- 2.2.3 Confirmation of the foreign principals of the Tenderer that the commission/ remuneration, if any, reserved for the Tenderer in the quoted price(s), may be paid by BHEL in India in equivalent Indian Rupees on satisfactory completion of the Project or supplies of Stores and Spares in case of operation items.

2.3 In either case, in the event of contract materializing, the terms of payment will provide for payment of the commission/ remuneration, if any payable to the agents/ representatives in

India in Indian Rupees, on expiry of 90 days after the discharge of the obligations under the contract.

- 2.4 Failure to furnish correct and detailed information as called for in paragraph 2.0 above will render the concerned tender liable to rejection or in the event of a contract materializing, the same liable to termination by BHEL. Besides this, there would be a penalty of banning business dealings with BHEL or damage or payment of a named sum.

Annexure–B

This format is applicable only to Indian Suppliers/ Agents supplying indigenous portion of Foreign Purchases.

In all other cases, extant guidelines of SEARP, 2010 are to be followed.

SEARP (SRF) Clause No.	Detail
	Name & address of the firm
1.0	Products/ Systems / Services being considered for
2.0	General Information
2.2	Name of Chief Executive
2.3	Details of authorized signatory
3.0	Ownership Information
3.1	Type of Firm
3.2	Nature of Business <i>Attach authorization letter and agency agreement from Principal (from whom capital equipment is procured)</i> <i>Attach copy of declaration from Foreign Principal for total guarantee/ warranty of indigenous supplies</i>
3.3	Year of establishment
3.4	Year of commencement of business
4.0	Registration particulars
4.1	Permanent Account No.
4.2 / 4.3	Sales Tax / TIN No.
4.6	Service Tax No. (in case of Erection & Commissioning)
5.0	Organisational strength
6.0	Other particulars
6.1	If the company is already registered with other BHEL Units
6.2	Directors/ Partners, if related to any BHEL employee
6.9	If any Ex-BHEL personnel employed by the Company
6.12	Details of pending legal issues with BHEL
6.13	Bank Account information
9.0	Financial information
9.6	Sales/ Turnover details of last 3 years (or from the date of incorporation, whichever is less)

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ANNEXURE- VI

Request for Issue of Form-C

FINANCIAL YEAR -----

Supplier Name & Address	
Quarter-wise details of invoices for issuance of 'C' forms for a Financial Year	

Quarter	Seller Tin	Invoice No	Invoice Date	Net Value	Tax amount	Commodity Description	Purchase Order No	Purchase Order Dt
Q-1								

Quarter	Seller Tin	Invoice No	Invoice Date	Net Value	Tax amount	Commodity Description	Purchase Order No	Purchase Order Dt
Q-2								

Quarter	Seller Tin	Invoice No	Invoice Date	Net Value	Tax amount	Commodity Description	Purchase Order No	Purchase Order Dt
Q-3								

Quarter	Seller Tin	Invoice No	Invoice Date	Net Value	Tax amount	Commodity Description	Purchase Order No	Purchase Order Dt
Q-4								

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ANNEXURE-VII

NEFT Application Form

Vendors Name	
Vendor Address	
BANK NAME	
BANK BRANCH	
BANK ADDRESS	
BANK BRANCH CODE	
BANK 9 DIGIT MICR CODE	
BANK NEFT CODE(IFC)	
BANK SWIFT CODE	
BANK PHONE	
ACCOUNT NAME	
ACCOUNT TYPE	
ACCOUNT NO.	
PAN NO.	
SERVICE TAX NO.	
TIN NO.	
E-MAIL ID	

Authorised Signatory Seal

Above details are to be submitted on company's letterhead. The details may either be attested by vendor's bankers or accompanied by a cancelled cheque leaf with IFSC code & A/c no. Printed on it.

Undertaking to report immediately any changes in the above to be submitted in company's letterhead.

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ANNEXURE-VIII

LOADING CRITERIA

No deviations in GCC terms and conditions are generally acceptable, and bids with deviations are liable to be rejected. However, in exceptional circumstances, BHEL may accept deviations with Loading as given below:

A) PAYMENT TERMS

Payment will be released within 45 days after receipt of complete documents as per order/ contract.

Loading will be done for vendors seeking earlier payment w.r.t. above, for the value and the period of deviation, as per Clause 17.0 of 'Instructions to Bidders'.

Time periods assumed by BHEL/ ISG for a few activities are as follows:

Payment through Bank	- 30 days from receipt of invoice + documents.
Received LR	- 30 days from despatch.
Material Receipt Certificate (MRC)	- 120 days from despatch.

B) BANK GUARANTEE `

Non submission of Bank Guarantee – No deviation is permitted.

C) LIQUIDATED DAMAGES

If maximum limit asked for is 10% or 5% of Undelivered Portion – 10% value of the total quoted price including taxes, duties & freight.

If maximum limit asked is less than 10 % of contract value loading shall be to the extent to which not agreed by bidder (at offered value) .

D) PRICE VARIATION CLAUSE (PVC)

PVC Instead of Firm Price – Maximum ceiling of PVC as demanded by vendor.

E) DEVIATION TO SUBMISSION OF FORM-E1/ E2 BEFORE CLAIMING 10% PAYMENT

10% of Ex-Works supply value.

F) NO DEVIATION IS ALLOWED IN RISK PURCHASE/RISK & COST CLAUSE.

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

_____. 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 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.

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 enter into agreements with identical conditions as this one with all Bidders and Contractors.
- 6.3 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.
- 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 As soon as the Monitor notices, or believes to notice, a violation of this agreement, he will so inform the Management of the Principal and request the Management to discontinue or take corrective action, or heal the situation, or to take other relevant action. The Monitor can in this regard submit non-binding recommendations. Beyond this, the Monitor has no right to demand from the parties that they act in a specific manner, refrain from action or tolerate action.
- 8.6 The Monitor will submit a written report to the CMD, BHEL within 8 to 10 weeks from the date of reference or intimation to him by the Principal and, should the occasion arise, submit proposals for correcting problematic situations.
- 8.7 The CMD, BHEL shall decide the compensation to be paid to the Monitor and its terms and conditions.
- 8.8 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.

8.9 The number of Independent External Monitor(s) shall be decided by the CMD, BHEL.

8.10 The word 'Monitor' would include both singular and plural.

Section 9 – Pact Duration

9.1 This Pact begins and shall be binding on and from the submission of bid(s) by bidder(s). It expires for the Contractor 12 months after the last payment under the respective contract and for all other Bidders 6 months after the contract has been awarded.

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)

For & On behalf of the Bidder/ Contractor

(Office Seal)

Place-----

Date-----

Witness: _____

(Name & Address) _____

Witness: _____

(Name & Address) _____

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ANNEXURE-X

List of Consortium Banks			
Nationalised Banks		Public Sector Bank	
1	Allahabad bank	20	IDBI
2	Andhra bank		
3	Bank of Baroda	Foreign banks	
4	Canara Bank	21	CITI Bank N.A
5	Corporation bank	22	Deutsche Bank AG
6	Central bank	23	HSBC
7	Indian Bank	24	Standard Chartered Bank
8	Indian Oversea Bank	25	The Royal Bank of Scotland N.V.
9	Oriental bank of Commerce	26	J P Morgan
10	Punjab National Bank		
11	Punjab & Sindh Bank	Private banks	
12	State Bank of India	27	Axis Bank
13	State Bank of Hyderabad	28	The Federal Bank Limited
14	Syndicate Bank	29	HDFC
15	State Bank of Travancore	30	Kotak Mahindra Bank
16	UCO Bank	31	ICICI
17	Union Bank of India	32	Indusind Bank
18	United Bank of India	33	Yes Bank
19	Vijaya Bank		

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ANNEXURE-XI

Terms & Conditions of Reverse Auction

Against this enquiry for the subject item/ system with detailed scope of supply as per enquiry specifications, BHEL may resort to “REVERSE AUCTION PROCEDURE” i.e., ON LINE BIDDING (THROUGH A SERVICE PROVIDER). The philosophy followed for reverse auction shall be English Reverse (No ties).

- 1 For the proposed reverse auction, technically and commercially acceptable bidders only shall be eligible to participate.
- 2 Those bidders who have given their acceptance for Reverse Auction (quoted against this tender enquiry) will have to necessarily submit „online sealed bid” in the Reverse Auction. Non-submission of „online sealed bid” by the bidder for any of the eligible items for which techno-commercially qualified, will be considered as tampering of the tender process and will invite action by BHEL as per extant guidelines in vogue.
- 3 BHEL will engage the services of a service provider who will provide all necessary training and assistance before commencement of on line bidding on internet.
- 4 In case of reverse auction, BHEL will inform the bidders the details of Service Provider to enable them to contact & get trained.
- 5 Business rules like event date, time, bid decrement, extension etc. also will be communicated through service provider for compliance.
- 6 Bidders have to fax the Compliance form (annexure IV) before start of Reverse auction. Without this, the bidder will not be eligible to participate in the event.
- 7 In line with the NIT terms, BHEL will provide the calculation sheet (e.g., EXCEL sheet) which will help to arrive at “Total Cost to BHEL” like Packing & forwarding charges, Taxes and Duties, Freight charges, Insurance, Service Tax for Services and loading factors (for non-compliance to BHEL standard Commercial terms & conditions) for each of the bidder to enable them to fill-in the price and keep it ready for keying in during the Auction.
- 8 Reverse auction will be conducted on scheduled date & time.
- 9 At the end of Reverse Auction event, the lowest bidder value will be known on

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auction portal.

- 10 The lowest bidder has to fax/e-mail the duly signed and filled-in prescribed format for price breakup including that of line items, if required, (Annexure VII) as provided on case-to-case basis to Service provider within two working days of Auction without fail.
11. In case BHEL decides not to go for Reverse Auction procedure for this tender enquiry, the Price bids and price impacts, if any, already submitted and available with BHEL shall be opened as per BHEL"s standard practice.
12. Bidders shall be required to read the "Terms and Conditions" section of the auctions site of Service provider, using the Login IDs and passwords given to them by the service provider before reverse auction event. Bidders should acquaint themselves of the „Business Rules of Reverse Auction", which will be communicated before the Reverse Auction.
13. 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*, shall be initiated by BHEL and the results of the RA scrapped/ aborted.
14. The Bidder shall not divulge either his Bids or any other exclusive details of BHEL to any other party.
15. In case BHEL decides to go for reverse auction, the H1 bidder(s) (whose quote is highest in online sealed bid) may not be allowed to participate in further RA process.

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ANNEXURE-XII

FORMAT FOR NO DEVIATION CERTIFICATE

(To be submitted in the bidder's letter head)

TO
 BHARAT HEAVY ELECTRICALS LIMITED,
 Industrial Systems Group, Prof. CNR Rao Circle,
 Malleshwaram Bangalore – 560012

Sub :	No deviation certificate
Job :	----
Ref :	Your enquiry No -
	All the pertinent issues till date.

Dear Sirs,

With reference to above, this is to confirm that as per tender conditions, we have visited site before submission of our offer and noted the job content & site conditions etc. We also confirm that we have not changed/ modified the tender documents as appeared in the website/ issued by you and in case of such observance at any stage, it shall be treated as null and void.

We hereby confirm that we have not taken any deviation from tender clauses together with other references as enumerated in the above referred NIT. We hereby confirm our unqualified acceptance to all terms & conditions, unqualified compliance to technical specification, integrity pact (if applicable) and acceptance to reverse auctioning process.

In the event of observance of any deviation in any part of our offer at a later date whether implicit or explicit, the deviations shall stand null & void.

We confirm to have submitted offer in accordance with tender instructions and as per aforesaid references.

Thanking you,

Yours faithfully,

(Signature, date & seal of authorized representative of the bidder)

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ANNEXURE-XIII

DECLARATION BY AUTHORISED SIGNATORY OF BIDDER

(To be typed and submitted in the Letter Head of the Company/Firm of Bidder)

To,

(Write Name & Address of Officer of BHEL inviting the Tender)

Dear Sir,

Sub : Declaration by Authorised Signatory

Ref : 1) NIT/Tender Specification No:

2) All other pertinent issues till date

I /We, hereby certify that all the information and data furnished by me with regard to the above Tender Specification are true and complete to the best of my knowledge. I have gone through the specifications, conditions, stipulations and all other pertinent issues till date, and agree to comply with the requirements and Intent of the specification.

I further certify that I am authorised to represent on behalf of my Company/Firm for the above mentioned tender and a valid Power of Attorney to this effect is also enclosed.

Yours faithfully,

(Signature, Date & Seal of Authorized
Signatory of the Bidder)

Date:

Enclosed : Power of Attorney



Consolidated Site Safety Plan

(Includes all Safety Plan documents of ISG)



Bharat Heavy Electricals Limited
Industrial Systems Group
Prof. C.N.R.Rao Circle, Malleswaram,
BANGALORE 560 012
Phone: 080 - 23365096, Fax: 080 - 23562713

Regd. Office: "BHEL House" Siri Fort, New Delhi - 110 049.

Note: All documents issued from 2003 to 2006 are consolidated in this volume.



HSE Management System Manual

IS/HSE/CSSP/O1

CONSOLIDATED SITE SAFETY PLAN

DOCUMENT NO.	DESCRIPTION
IS/HSE/SSP/01	1. Details of Project
	2. Health, Safety and Environment Policy
	3. Roles of Site Personnel
	4. Safety Awareness & Training:
	5. Site Safety Inspection:
	6. Emergency Preparedness and Response Plan:
	7. Electrical Safety Inspection:
	8. Transportation and Material Handling Equipment:
	9. Erection of equipment:
	10. Commissioning of equipment:
	11. Use of Personal Protective Equipment (PPE):
	12. Housekeeping:
	13. Accident Investigation and Reporting:
	14. Protection against Fire
	15. Protection against Noise
	16. Welding Sets
	17. Civil / Structural Work
	18. FIRE FIGHTING PLAN
	19. NOISE STANDARDS
	20. List of Applicable Statutory / Regulatory requirements
Checklist / Formats / Guidelines	
IS-QII-4-409/010	SAFETY DECLARATION BY SUB-CONTRACTOR
IS:HSE:CL01	CHECK LIST FOR WORKING AT HEIGHT
IS:HSE:CL02	CHECK LIST FOR HOUSE KEEPING
IS:HSE:CL03	CHECK LIST FOR SCAFFOLDING
IS:HSE:CL04	CHECK LIST FOR GENERAL SAFETY INSPECTION
IS:HSE:CL05	CHECK LIST FOR HEAVY MATERIAL HANDLING EQUIPMENT INSPECTION.
IS:HSE:CL06	CHECK LIST FOR ARC WELDING TRANSFORMER
IS:HSE:CL07	CHECK LIST FOR DC ARC WELDING GENERATOR
IS:HSE:CL08	CHECKLIST FOR STAGING
IS/HSE/SSP/02	Hazards Risk & Preventive Measures at Construction Sites.
Dtd. 30.06.06	Guide lines for Resident Managers on Contract Labour, Safety & Accident Reporting System
Dtd. 30.06.06	List of Relevant Legislations applicable to Various Sites
IS:HSE:AIR:001	Accident (Personal injury / property damage) Report



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CONSOLIDATED SITE SAFETY PLAN

Annexures

IS-CW-01, Rev.01	Work instructions for Civil Work at Site
IS 3043-1987	Extracts from IS for Code of Practice for earthing
Copy No 18 07.12.06	Safety Manual – Health and Safety Plan for BHEL Power Sector
PSER : HSEOM: 004:02 Datd 25.11.02	Emergency Preparedness and Response Plan of PS ER
HSE / PPE Dtd 25.08.2006	Corporate Personal Protective Equipment (PPE) Safety Manual

Note:

1. This Site Safety Plan is to be used at all Sites. Project Specific Details and Site Organization Chart are to be added in Section –1.
2. The Checklists provided are to be used and maintained as records.
3. These documents and records are verifiable for compliance under Quality & HSE systems.



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CONSOLIDATED SITE SAFETY PLAN

1. Details of Project

1.	Name of the Project & Site	
2.	Job Number	
3.	Customer	
4.	Overall Scope of work: Design / Supply / Installation	Civil Structural Mechanical Electrical & Instrumentation Others
5.	Project Schedule	Starting Date: Completion Date:
6.	Erection & Commissioning Machinery / Tools / Instruments Required:	
7.	Sub-Contractor Details	Name of the Sub-contractor Job order No.: Duration of Completion:
8.	Name of BHEL Residence Manager	Attach Site Organization Chart of BHEL
9.	Designated Safety Officer of BHEL	
10.	Name of Sub-contractor person in-charge	Attach Site Organization Chart of Sub-contractor
10.	Designated Safety Officer of Sub-contractor	



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CONSOLIDATED SITE SAFETY PLAN

2. HEALTH, SAFETY & ENVIRONMENTAL POLICY

The Management is committed to be an environmentally sound company in its activities, products, services and to provide safe and healthy working environment to all employees as an integral part of business performance and strive towards zero accident through:

- Compliance with applicable Legislation and Regulations.
- Promoting the objective to minimize waste generation and to conserve/reduce/reuse resources such as raw materials, water and power.
- Enhancement of Environmental, Safety and Occupational Health awareness amongst employees, customers and suppliers by proactive communication and training.
- Continual improvement through periodical review of EMS and OHSAS to ensure its suitability, adequacy and effectiveness.
- Regular evaluation and proactive measures for prevention of accidents/ occupational diseases.
- Communication of HSE Policy to all employees and interested parties.
- Coordination with concerned agencies/regulatory bodies engaged in Occupational Health, Safety & Environmental activities.

3. Roles of Site Personnel:

Resident Manager:

- Ensuring that HSEMS requirements are implemented and maintained at sites. He shall have commensurate authority and organisational freedom in that regard.
- He shall report on the performance of the HSEMS to the MR for review.
- Identification and evaluation of Environmental Aspects & Impacts, Occupational Health & Safety Hazards and assess Risks at Site.

Duties & Responsibilities of the Designated Safety Officer at Site:

- To advise on safety aspects to all personnel at site including sub-contractors.
- To carry out Site safety inspection in order to observe the physical conditions of work and the work practices and procedures followed by Sub-contractors and to render advise on measures to be adopted for removing the unsafe physical conditions and preventing unsafe actions by sub-contractor's personnel.
- To organize / verify the availability of personal protective equipment
- To investigate select accidents
- Co-ordinate hazard and risk management
- Obtain Safety Declaration from Sub-Contractor.
- Impart Safety Training to sub-contractors and BHEL Personnel working at Site.

4. Safety Awareness & Training:

Safety Awareness and consciousness among workers, supervisors and executives is imparted by the Designated Safety Officer of BHEL / Sub-contractor. This is done by way of following.

- Talk on Safety issues as per Site Safety Plan



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CONSOLIDATED SITE SAFETY PLAN

- Posters and Notices at prominent places
- Display of warning boards
- Creating awareness and response for emergencies like Fire, Shock, accidents, dangerous occurrences and on First-aid, Emergency assistance agencies and their contact telephone numbers etc.
- Use of Personnel Protective Equipment

5. Site Safety Inspection:

Designated Safety Officer will inspect the site on Daily basis

- To identify unsafe conditions and unsafe actions by the labourers and bring to the notice of sub-contractor. The main objective of the Daily Inspection is to rectify the potentially dangerous situations and avoid occurrence of any incident.
- To suggest suitable remedial action to correct the unsafe conditions / acts.
- To use appropriate checklists IS:HSE:CL01 to CL08 to verify and record the safety observations.
- To follow the *Copy of Safety Manual – Health and Safety Plan for BHEL Power Sector (07.12.06 copy no. 18) issued on 26.12.06* and available at site.

6. Emergency Preparedness and Response Plan:

- Use the **Emergency Preparedness and Response Plan IS/HSE/EPR/01** available at site **together with PS & Customer.**
- First aid kits are to be kept in the site office or the locations in the vicinity of work place. The kit is to be maintained. Records of FIRST AID treatment given to be maintained in a register.
- Whoever first notices the accident occurrence shall immediately notify the same to Designated Safety Officer / Other BHEL executives.
- Determine the area of accident and organize for evacuation of the personnel.
- Organize for sending the injured person to nearby First-aid / Health Center / Hospitals depending on the emergency.
- In the event of fire organize for extinguishing the fire using the apparatus available and for major fire notifies the local / nearby Fire Station.

7. Electrical Safety Inspection:

- All the electrical distribution system, sub system, relevant protection unit at electrically powered machines and tools are inspected periodically including earthing at two points, to avoid electrical shocks.
- Checklist for House keeping -IS:HSE:CL02 and General safety inspection -IS:HSE:CL04, is used for periodical inspection.
- For safe operation all the Electrical portable tools and devices are connected with Earth Leakage Circuit Breaker (ELCB) protection at Distribution Board and continuity of earth connection is to be ensured.
- The ELCBs are tested periodically and records of such tests are maintained.



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CONSOLIDATED SITE SAFETY PLAN

- After each inspection the filled up check list date wise is to be retained by Resident Manager.

8. Transportation and Material Handling Equipment:

- Checklist of Inspection of Material Handling Equipment - IS:HSE:CL05 shall be used and records are to be maintained.

9. Erection of equipment:

- The instructions given in Erection Manual IS: EM-1 to IS:EM-5 in FIVE Volumes are to be followed during erection of equipment. SAFETY MANAGEMENT AT ERECTION SITES is elaborated in Document No. IS; EM-4/1 (Erection Manual Issued on 24.01.1995).
- Wherever Checklists are provided, the same shall be used and records are to be maintained.

10. Commissioning of equipment:

- The instructions given in Commissioning Manual IS-QCM in SIX Volumes are to be followed during Commissioning of Standard equipment.
- Wherever Checklists are provided, the same shall be used and records are to be maintained.

11. Use of Personal Protective Equipment (PPE):

- The PPE in use shall conform to IS or other relevant standard and the same shall be discarded in case it is damaged or worn out.
- Wherever Checklists are provided, the same shall be used and records are to be maintained.
- *Soft copy of Corporate Personal Protective Equipment (PPE) Safety Manual Document No. HSE / PPE Dtd 25.08.2006 available at site to be followed.*

12. Housekeeping:

- The Housekeeping Checklist IS:HSE:CL02 available in this document shall be followed and records are to be maintained.

13. Accident Investigation and Reporting:

- *Guide lines for Resident Managers on Contract Labour, Safety & Accident Reporting System issued on 30.06.06 needs to be referred.*
- The Investigation findings shall be reported to Designated Safety Officer, Concerned Project Manager and MR at Head quarters for taking proper preventive action to avoid such accidents in future.
- The Accident / Incident Reporting format IS:HSE:AIR:001 to be followed



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CONSOLIDATED SITE SAFETY PLAN

14. Protection against Fire

- This is elaborated in Document No. IS; EM-4/1 (Erection Manual Issued on 24.01.1995) SAFETY MANAGEMENT AT ERECTION SITES.
- The GENERAL SAFETY INSPECTION Checklist - IS:HSE:CL04 available in this document shall be followed and records are to be maintained.
- **FIRE FIGHTING PLAN** Extract from: Chapter 4 – Internal Appliances of Fire Protection Manual Issued by Tariff Advisory Committee Bombay as elaborated below is to be followed for finalizing the requirement of fire extinguishers at site.

15. Protection against Noise

- The Equipment used at Construction site must follow the acceptable ambient noise level as detailed below in **NOISE STANDARDS**.

16. Welding Sets

- Whenever Welding sets are brought by the contractor to site, the healthiness of the equipment is to be checked and inspected and the record is to be maintained as per the checklist IS:HSE:CL06 and CL07.

17. Civil / Structural Work

Wherever Civil work is involved the following work instructions / checklist are to be referred and followed.

- **Work Instructions for Civil Work at Site** – IS:CW:01, Rev:01, Dated 04.09.1996.
- Checklist for Scaffolding IS:HSE:CL03
- Checklist for Working at Height IS:HSE:CL01
- *Checklist for Staging IS: HSE: CL 08*
- Formats for Field Quality Plan IS:CW:01, Rev.02, Dated 15.05.1997.

18. FIRE FIGHTING PLAN

Extract from: Chapter 4 – Internal Appliances of Fire Protection Manual Issued by Tariff Advisory Committee Bombay.

Class of Fire	Suitable type of appliances
A. Fire in ordinary combustible (wood, vegetable, fiber, paper etc.)	Chemical extinguishers of soda acid, gas / expelled water and anti-freeze types and water buckets.
B. Fires in flammable liquids, paints, grease, solvents etc.	Chemical extinguishers of Foam, Carbon Dioxide and Dry powder type and sand buckets.



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C. Fire in gaseous substances under pressure	Chemical Extinguishers of Carbon Dioxide and Dry Powder Type.
D. Fire in reactive Chemicals, active metals	Special type of Dry Powder extinguishers and sand buckets.
E. Fire in electrical equipments.	Chemical Extinguishers of Carbon Dioxide and Dry Powder Type and sand buckets.
Clause 4.1.3.2	One 9 litre Water / Sand Bucket for every 100 sq.metre area
Clause 4.1.3.5.1	One no. of Not less than 2 kg, Dry Powder CO ₂ extinguisher within 15 metres of apparatus for rooms containing electrical transformers & switchgear.
Clause 4.1.3.5.2	One no. 5 kg, Dry Powder CO ₂ extinguisher within 15 metres of Motors / other Electrical equipment.

The following example will illustrate the method of determining the number of fire extinguishers required to give adequate protection for a given property:

Light engineering workshop (light hazards).

Area: 315m X 112m = 35300 sq.m

Type of fire:

1. Class A Fire due to normal combustibles
2. Class B Fire due to existence of spray painting process and storage of flammable liquids
3. Class E Fire due to two electrical DB and motors

Number of appliances

Basic protection

353 buckets and

59 water type extinguishers

OR

90 Water type extinguishers if buckets are dispensed with.

For Class B fires 2 Water type extinguishers are replaced by 2 Foam Extinguishers.

For Class E fires 6 Dry Powder Extinguishers are provided. Thus the total no. of fire extinguishers are

Water type: 88

Foam type: 2

Dry powder type: 6

TOTAL 96

Reference Standards for Fire Extinguishers:

Sl.No.	Standard / Year	Description
1.	IS940 : 1989	Specifications of Portable fire extinguisher, water type (gas cartridge)
2.	IS2171 : 1999	Specifications of Portable fire extinguisher, Dry powder (Cartridge type)



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3.	IS2878 : 1986	Specifications for Fire extinguisher, Carbon Di-oxide Type (Portable & trolley mounted)
4.	IS10204 : 2001	Specifications of Portable fire extinguisher, mechanical foam type
5.	IS10658 : 1999	Specifications for Higher capacity Dry powder Fire extinguisher (Trolley mounted)
6.	IS13385 : 1992	Specifications for Fire extinguisher, 50 capacity wheel mounted water type (Gas Cartridge)
7.	IS13386 : 1992	Specifications for Fire extinguisher, 50 l capacity, mechanical foam type
8.	FPM / June 1995	Fire Protection Manual (Part-I) By Tariff Advisory Committee

19. NOISE STANDARDS

NOISE : (Ambient standard)

Area Code	Category of Area	Limit in dB (A) Leq	
		Day time (6 AM to 9 PM)	Night time (9 PM to 6 AM)
A	Industrial area	75	70
B	Commercial area	65	55
C	Residential area	55	45
D	Silence Zone	50	40

Silence Zone is defined as area upto 100 metres around such premises as hospitals, educational institutions and courts.

Source: EPA Notification [G.S.R. 1063(E), DT. 26th Dec.1989]

Domestic appliances & Construction equipment acceptable noise level:

Sl.No.	Type of Appliances	Standard dB(A)
1.	Window Air-conditioner to 1 Ton to 1.5 Tons	68
2.	Air Coolers	60
3.	Refrigerators	46
4.	Diesel Generators for Domestic Purpose	85-90
5.	Compactors (Rollers) Front Loaders, Mixers, Crane movable, Vibrators and Saws	75

Source: EPA Notification [G.S.R. 742(E), DT. 30th Aug.1990]



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20. List of Applicable Statutory / Regulatory Requirements:

Sl.No.	Standard	Applicable or Not
1.	Indian Electricity Rules, 1956	Yes/ No
2.	The Motor Vehicle Act, 1988	Yes/ No
3.	The Central Motor Vehicle Rules, 1989	Yes/ No
4.	The Gas Cylinder Rules, 1981	Yes/ No
5.	The Environment (Protection) Act, 1986	Yes/ No
6.	The Noise Pollution (Regulation & Control) Rules, 2000	Yes/ No
7.	Battery (Management and Handling) Rules, 2000	Yes/ No
8.	Ozone Depleting Substances (Regulation and Control) Rules, 2000	Yes/ No
9.	The National Environment Tribunal Act, 1995	Yes/ No
10.	Pollution Control Act, Rules and Notifications, September 2001	Yes/ No
11.	Pollution Control Law – Environmental Standard for Ambient Air, Automobiles, Fuels, Industries and Noise – July 2000	Yes/ No
12.	CBIP Guidelines	Yes/ No
13.	Indian Standards as applicable	
14.	<i>List of Relevant Legislations Applicable to Various Sites ISG document issued on 30.06.06</i>	Yes / No
15.	International Standards as applicable	
16.	Project Specific Standards as applicable	

Note: Refer to register of regulations in the HSE system document IS/HSE/ROR/E1.1 to E1.6, IS/HSE/WZS/W1, W2, W3 & IS/HSE/SCH/S1



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SAFETY DECLARATION BY SUB-CONTRACTOR

1. Name of Sub-contractor
 2. Work Order No.
 3. Nature of work
 4. Project
 5. Number of workers deployed
- | | | |
|-----------|---|------|
| Category: | | |
| 1. | - | Nos. |
| 2. | - | Nos. |
| 3. | - | Nos. |
| 4. | - | Nos. |
6. Number of workers attended safety induction training.
 7. Safety appliances issued to workmen
- | | |
|-------------------------|--|
| Name of the appliances: | |
| 2. Safety Helmet | |
| 3. Safety Boots | |
| 4. Hand gloves | |
| 5. Safety belts | |
| 6. Safety goggles | |
| 7. Dust masks | |
8. First Aid box provided at site
 9. Safety clearance taken from concerned authority for starting the job.
 10. Sand and water provided at the welding station
 11. Fire extinguishers provided at site

Signature of sub-contractor with seal

Date:



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CHECK LIST FOR WORKING AT HEIGHT

Name of Sub-contractor

Work Order No.

Nature of work

Name of the Project site

Job. No.

Date

Sl. No.	Check Points	Observation	Measures
1.	Safety Plan is available from Sub-contractor	Yes / No	Document No. Dtd.
2.	All the workers have been explained safe work procedure	Yes / No	Verify with few
3.	Effective communication system have been established and explained to the workers.	Yes / No	Type of communication
4.	Adequate illumination is ensured	Yes / No	Good / fair / poor
5.	Work area inspected prior to starting of the job. Joint protocol signed for site clearance.	Yes / No	Verify document
6.	Area below the work place is cordoned.	Yes / No	Verify compliance
7.	Arrangement made for fastening hand tools.	Yes / No	Check
8.	Workmen provided with bag / box to carry nut, bolts and hand tools.	Yes / No	Check
9.	All work plate forms are of adequate strength and ergonomically suitable	Yes / No	Verify
10.	Work at more than one elevation at the same segment is restricted.	Yes / No	Check
11.	Availability of supervision staff at work place.	Yes / No	Check
12.	Availability of controlled copy of drawing and document at work place.	Yes / No	Verify

ACCESS / EGRESS

1.	Walkways provided with handrails, mid rail & toe guard.	Yes / No	
2.	All chequered plates, gratings properly welded and bolted.	Yes / No	Verify
3.	Are ladders inspected and maintained in good condition.	Yes / No	Verify
4.	Are ladders spliced	Yes / No	Verify
5.	Are ladders properly secured to prevent slipping, sliding or falling	Yes / No	Verify
6.	Do side rails extended 36" above top of landing	Yes / No	Verify
7.	Are buildup ladders constructed of sound materials.	Yes / No	Verify
8.	Rungs and cleats not over 12" on center.	Yes / No	Verify



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Sl. No.	Check Points	Observation	Measures
9.	Metal ladders not used around electrical hazards.	Yes / No	Check
10.	Proper maintenance, storage.	Yes / No	Check
11.	Ladder placed at right slope	Yes / No	Check
12.	Ladders, stair cases are welded / bolted properly	Yes / No	Check
13.	Any obstruction in the stairs	Yes / No	Check
14.	Are landings provided with handrails, knee rails, toe boards etc.	Yes / No	Check
15.	Whether ramp is provided with proper slope	Yes / No	Check
16.	Proper hand rails / guards provided in ramps.	Yes / No	Check
HOUSEKEEPING			
1.	Walkways, aisles & all overhead work places cleared of loose materials.	Yes / No	Check
2.	Flammable material, if any, is cleared.	Yes / No	Check
3.	All shuttering materials are removed after de-shuttering is done.	Yes / No	Check
4.	Platforms and walkways free of oil / grease or other slippery spillage.	Yes / No	Check
5.	Collected scraps are brought down or lowered and not dropped from height.	Yes / No	Ensure
Personnel Protection Equipment & Safety Devices			
1.	Use of Safety Belts and Safety Helmets are ensured for all workers as per IS / applicable standard.	Yes / No	Verify
2.	Anchoring point provided at all places of work	Yes / No	Verify
3.	Common life-line provided wherever linear movement at height is required.	Yes / No	Verify
4.	Safety nets are in use wherever required.	Yes / No	Verify
5.	Proper fall arrest system is deployed at critical work place.	Yes / No	Verify
6.	Crawler boards / safety system for work on fragile roof are used.	Yes / No	Verify

Signature of Sub-contractor Supervisor.

Signature of BHEL Supervisor



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CONSOLIDATED SITE SAFETY PLAN

CHECK LIST FOR HOUSE KEEPING

Name of Sub-contractor

Work Order No.

Nature of work

Name of the Project site

Job. No.

Date

Sl. No.	Check Points	Observation	Measures
1.	Walkways, passages kept clear of material	Yes / No	Verify
2.	Area and roads kept clear for maneuvering of cranes and material handling equipment.	Yes / No	Verify
3.	Scrap, cut-pieces, welding electrodes stubs, hand tools kept tidy in workarea and disposed suitably.	Yes / No	Verify
4.	Scrap bin available at site.	Yes / No	Verify
5.	Welding cables, power cables routed properly to avoid run over by vehicle or tripping hazards and obstruction to personnel movement.	Yes / No	Verify
6.	Compressed gas hoses routed properly in the site.	Yes / No	Verify
7.	Compressed gas cylinders and hoses kept away from hot work and grinding work.	Yes / No	Verify
8.	Floor is kept clear of water, oil spillage / accumulation	Yes / No	Verify

CIVIL WORK AREA

1.	All approach, aisle, ingress / egress to / from site, excavated pits, ramps, walkways kept clear of material debris tools etc.	Yes / No	Verify
2.	Scaffolding material (H-beam, H-D tower frames, bracings, clamps), shuttering boards, across pans etc. are stacked properly at site.	Yes / No	Verify
3.	Stacking of bricks, hollow blocks are done in safe manner.	Yes / No	Verify
4.	Nails removed from wooden planks / timbers and not protruding out.	Yes / No	Verify
5.	Saw dust, wood chips and scraps wood cleared from carpentry shop and disposed suitably.	Yes / No	Verify
6.	Debris from demolition and excavated earth cleared from site and accesses.	Yes / No	Verify

ELECTRICAL INSTALLATION & BOOTHS

1.	Approach to DB, panels, Switches kept clear	Yes / No	Verify
2.	Fire extinguishers installed at an easy accessible location.	Yes / No	Verify
3.	Shock treatment chart is placed nearby place.	Yes / No	Verify



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CONSOLIDATED SITE SAFETY PLAN

Sl. No.	Check Points	Observation	Measures
4.	Welding cable and power cables are routed separately to avoid obstruction and tripping hazards.	Yes / No	Verify
5.	Welding cable and power cables are not damaged one.	Yes / No	Verify
6.	Floor of electrical booths kept dry.	Yes / No	Verify
7.	Proper grade Rubber mats are placed in front of Electrical panels	Yes / No	Verify
STORES			
1.	Walkways, entry and exits are kept clear	Yes / No	Verify
2.	Materials placed on racks are safely accessible.	Yes / No	Verify
3.	Compressed gas cylinders are segregated as full or empty and types of gas.	Yes / No	Verify
4.	Vertically stored cylinders are secured chained to avoid toppling and horizontal once guarded against rolling down.	Yes / No	Verify
5.	Flammable storage areas are isolated from store, office and work areas.	Yes / No	Verify
6.	Cement bags are stacked in proper gradient safely.	Yes / No	Verify
7.	Corrosive material (eg. Acids, alkalies) are stored away from other material and kept on collection trays to safe guard against accidental leakage.	Yes / No	Verify
8.	Storing area for lifting tools & tackles, ropes, wire ropes & Personnel Protection Equipment is dry, clean & free of corrosive material.	Yes / No	Verify
9.	Easy accessibility to installed fire extinguishers ensured in store.	Yes / No	Verify
GENERAL			
1.	Separate scrap yard is allocated for the site.	Yes / No	Verify
2.	Approaches to workstations, offices, stores are well laid and demarcated.	Yes / No	Verify
3.	Site roads are kept clear of stacked material for free & safe vehicular movement.	Yes / No	Verify
4.	Heavy materials stacking are taken care of to prevent slips, collapse and rolling.	Yes / No	Verify
5.	For house keeping at elevated work places refer to Checklist for Working at height - IS:HSE:CL01	Yes / No	Verify

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Signature of BHEL Supervisor



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CONSOLIDATED SITE SAFETY PLAN

CHECK LIST FOR SCAFFOLDING

Name of Sub-contractor

Work Order No.

Nature of work

Name of the Project site

Job. No.

Date

Sl. No.	Check Points	Observation	Measures
1.	Is site having a practice of providing suitable and sufficient scaffolds so that the work could safely be done at a height. Refer Scaffolding Standard IS-3696.	Yes / No	Check
2.	Is site engaging suitable / properly trained / experienced workmen for constructing / dismantling / shifting scaffolding works.	Yes / No	
3.	Are scaffold platforms designed / constructed with a safety factor of minimum FOUR.	Yes / No	
4.	Is there a safe means of access to the working platform?	Yes / No	
5.	Are scaffolding structure having a solid base avoiding pavements & manhole covers.	Yes / No	
6.	Is the scaffolding structure free from excavation pit / proper distance is maintained.	Yes / No	
7.	Is verticality of the structure properly maintained?	Yes / No	
8.	Are ties for scaffolding structure properly maintained (vertical as well as horizontal position)	Yes / No	
9.	Is there a provision of toe board / guardrails and are they secured.	Yes / No	
10.	Plank used for working platforms are wooden or metallic.	Yes / No	
11.	If wooden plank, whether thickness is maintained as per standard or not, viz.; • For 1.5 M span - 1.5" thick. • For 2.6 M span - 2" thick.	Yes / No	
12.	Is there a system of inspecting the scaffolds by a competent person atleast once a week and also after every prolonged interruption in the work / bad weather / heavy wind condition?	Yes / No	
13.	Is there a system of inspecting materials of scaffolds on each occasion before erection.	Yes / No	
14.	Is overhanging of the working platform restricted to less than 50mm / four times the thickness of the	Yes / No	



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CONSOLIDATED SITE SAFETY PLAN

Sl. No.	Check Points	Observation	Measures
	board.		
15.	Is awareness of workmen on the importance of load distribution on a given working platform palpable?	Yes / No	
16.	Is there a check for the condition and correct usage of fittings for scaffolds?	Yes / No	
17.	Is the width of a working platform properly maintained according to usage, viz. • Minimum 600mm for footing only and not for deposit of material. • Minimum 800mm for footing and deposit of material. • Minimum 1050mm when used for heavier loads or to support higher platforms.	Yes / No	
18.	Are all the materials stored on the platforms properly secured or not.	Yes / No	
19.	Are openings in working platform kept safely covered / fenced	Yes / No	
20.	Whether planks are tied using proper binding wires.	Yes / No	
21.	Are mobile scaffolds used on a firm and level surface?	Yes / No	
22.	Does the height of mobile scaffold exceed four times the smaller base dimension?	Yes / No	
23.	Are all materials stacked on the platform properly secured while in motion?	Yes / No	
24.	Is the safety rule “ not to ride on a scaffold while in motion violated”	Yes / No	
25.	Is there a system of checking for obstructions before the tower is moved?	Yes / No	
26.	Are suitable / correct lifting tackle (wire ropes, chains, shackles) selected for suspension & use.	Yes / No	
27.	Is there a system for using manila rope / coir rope for suspension at any place where such rope would be liable to damage by heat / flames/ sharp edges etc.	Yes / No	
28.	Are all precautionary measures taken to prevent contact between arc welding apparatus and suspension ropes.	Yes / No	
29.	Is hanging platform secured?	Yes / No	
30.	Is there a provision of anchoring safety belts- lanyards to be tied to guy ropes?	Yes / No	

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CONSOLIDATED SITE SAFETY PLAN

CHECK LIST FOR GENERAL SAFETY INSPECTION

Name of Sub-contractor

Work Order No.

Nature of work

Name of the Project site

Job. No.

Date

Sl. No.	Check Points	Observation	Measures
PILING WORK			
1.	Condition of tripod and its stability	OK / Not OK	
2.	Condition of wire ropes, D shackles, bulldog grips etc.	OK / Not OK	
3.	Removal of loose earth, slush etc.	OK / Not OK	
4.	Entry in register, details of periodical checking & maintenance.	OK / Not OK	
5.	Guards for rotating parts of machines.	OK / Not OK	
EXCAVATION			
1.	Verification of underground electrical cable	Yes / No	
2.	Condition of storing material	OK / Not OK	
3.	Cutting earth from top & ensuring no undercutting.	OK / Not OK	
4.	Storing of material from the edge of excavated pit 5' or half of the depth whichever is more.	OK / Not OK	
5.	Barricade / fencing / Displaying of danger sign, warning sign by way of red flag / tape/ light etc.	OK / Not OK	
6.	Provision of dewatering facilities.	OK / Not OK	
7.	Provision of ladders for deep trench	OK / Not OK	
8.	Stability of nearby structure	OK / Not OK	
9.	Avoid traffic movement, piling work in the vicinity.	OK / Not OK	
DEMOLITION			
1.	Cordoning of surrounding area	OK / Not OK	
2.	Displaying of warning sign Red Flag / Tape / Light	OK /	



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CONSOLIDATED SITE SAFETY PLAN

Sl. No.	Check Points	Observation	Measures
	etc.	Not OK	
3.	Demolition from top in a planned manner	OK / Not OK	
4.	Disconnection of electrical cable connection / water / steam / gas line etc.	OK / Not OK	
5.	Removal of debris immediately at a safe place	OK / Not OK	
6.	Emergency Transport	OK / Not OK	
7.	Fire extinguishers kept nearby for emergency.	OK / Not OK	
BLASTING			
1.	Blasting record incorporating number of holes made / type of explosive used / firing pattern & sequence with date and time of blast.	OK / Not OK	
2.	Handling of explosives by licensed blaster.	OK / Not OK	
3.	Intensity of the charge calculated before use.	OK / Not OK	
4.	Before drilling presence of unfired explosives checked.	Yes / No	
5.	Blasting is carried out only during lean period (lunch / night hours)	Yes / No	
6.	Standard warning signal / all clear signal is ensured before and after firing.	Yes / No	
7.	Competent persons equipped with red flags are posted at possible approaches to stop traffic and by passers.	Yes / No	
GROUND SURFACES			
1.	Ground level, no soft spot	OK / Not OK	
2.	Footing timber level adequately supported	Yes / No	
3.	No unauthorized entry.	Yes / No	
SCAFFOLDS			
1.	Base plate level	OK / Not OK	
2.	Spindle jack vertical	OK / Not OK	
3.	Standard plumb (vertical tubes), no damage.	OK / Not OK	
4.	Ledgers level (horizontal tubes) no damage	OK / Not OK	



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Sl. No.	Check Points	Observation	Measures
5.	Diagonal bracing, check secure and non-missing.	OK / Not OK	
6.	Lock pin in place and secure.	OK / Not OK	
7.	Support from permanent structure.	OK / Not OK	
LADDERS			
1.	Check ladder is placed on level ground	OK / Not OK	
2.	Position at an angle of 1:4	OK / Not OK	
3.	Adequately secured	Yes / No	
4.	No damage, check welds	OK / Not OK	
5.	Extent 4 rungs above stepping off point	OK / Not OK	
6.	Uniform and proper spacing of rung and no missing rung.	OK / Not OK	
WORKING PLATFORM			
1.	Should not be less than 600mm wide	OK / Not OK	
2.	Guard rails adequate check - Top rails at least 910mm height - No gap greater than 470mm	OK / Not OK	
3.	Boards free of defects - No gaps - Adequate support - No risk of trips - Properly secured / tied.	OK / Not OK	
PERSONNEL PROTECTIVE EQUIPMENT			
1.	Helmet & Footwear worn	Yes / No	
2.	Safety harnesses as required and secured above shoulder level	Yes / No	
3.	USE of safety belt while working at height.	Yes / No	
4.	Safety goggles during welding / gas cutting / grinding etc.	Yes / No	
5.	Condition / Maintenance of safety appliances	Yes / No	
6.	Use of body guards, gloves etc.		



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CONSOLIDATED SITE SAFETY PLAN

Sl. No.	Check Points	Observation	Measures
STRUCTURAL FABRICATION & ERECTION			
1.	All electrically operated equipment has proper earthing and connected through ELCB.	Yes / No	
2.	Safety guards for drilling & grinding machine are in position.	Yes / No	
3.	Use of Scotch block / wedge on wheels of trailers during unloading of material.	Yes / No	
4.	End stoppers fixed and maintained for rail mounted gantry cranes and limit switches are in operating condition.	Yes / No	
5.	Checking lifting tool & tackles before use.	OK / Not OK	
6.	Precaution during slinging on sharp edges.	Yes / No	
7.	Signaling to crane operators by one person at a time.	Yes / No	
8.	Withdrawal of persons beneath suspended loads.	Yes / No	
9.	Cordoning on all sides displaying Red flags, tapes / light and warning signs.	Yes / No	
10.	Ascertain center of gravity for the load to be lifted.	Yes / No	
11.	Easy access for cranes to move with suspended loads.	OK / Not OK	
12.	Proper tag line is used for guiding lifting loads.	Yes / No	
13.	Proper sequence of erection is followed.	Yes / No	
14.	Guy ropes are used and secured during and after erection if heavy lift.	Yes / No	
15.	Wire ropes are maintained and its safe working load inscribed.	Yes / No	
16.	Adequate illumination provided.	Yes / No	
GAS CUTTING AND WELDING			
1.	Storing of gas cylinders in proper manner	OK / Not OK	
2.	Proper handling of gas cylinder	OK / Not OK	
3.	Condition of regulator, hose, torch etc.	OK / Not OK	
4.	Welding generators / transformers condition and its proper earthing.	OK / Not OK	



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CONSOLIDATED SITE SAFETY PLAN

Sl. No.	Check Points	Observation	Measures
5.	Condition of welding cables and joints	OK / Not OK	
6.	Electrode holder	OK / Not OK	
7.	Area free from combustible material	Yes / No	
8.	Cordoning when welding / gas cutting is in progress at height.	Yes / No	
9.	Provision of fire extinguisher.	Yes / No	
10.	Stacking of cylinders not near live wires, battery charging rooms / oil rooms.	OK / Not OK	
MEANS OF ACCESS			
1.	Platform, toe board and railing	OK / Not OK	
2.	Scaffolding and its condition and maintenance	OK / Not OK	
3.	Stair case and railing	OK / Not OK	
4.	Ladder & fixing	OK / Not OK	
5.	Safe access to and from	OK / Not OK	
ELECTRICAL WORKS			
1.	Earthing of electrically operated equipment.	OK / Not OK	
2.	Provision of Shed / Canopy / Cover of Distribution Board and sub-distribution board.	Yes / No	
3.	Insulation of Cables and Joints	OK / Not OK	
4.	Cable laying above 7 feet from ground level	Yes / No	
5.	Fire extinguishers and Main Distribution Board Room.	OK / Not OK	
6.	Periodical checking of portable tools.	Yes / No	
7.	Use of ELCBs	Yes / No	
8.	“MEN WORKING DON'T SWITCH ON” board and other related Warning boards and Tags.	OK / Not OK	
9.	Insertion of loose wires and sockets	OK / Not OK	
10.	Use of proper plug and sockets.	Yes / No	



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CONSOLIDATED SITE SAFETY PLAN

Sl. No.	Check Points	Observation	Measures
11.	Job safety analysis for shut-down jobs and its proper action.	OK / Not OK	
12.	Permit to work.	Yes / No	
HOUSEKEEPING			
1.	Material stacking and storing	OK / Not OK	
2.	Working / Moving area clean	OK / Not OK	
3.	Access / Main Approach / Passages free from obstacles.	OK / Not OK	
4.	Cordoning / covering of pit, vat, machine foundation etc.	OK / Not OK	
5.	Displaying of Red Flags / Tape / Light.	Yes / No	
6.	Removal of unwanted materials like excavated earth debris etc.	Yes / No	
FIRE PREVENTION / PROTECTION			
1.	Combustible material away from source of heat / fire.	OK / Not OK	
2.	Provision of fire extinguishers and its maintenance.	OK / Not OK	
3.	“No Smoking” Board / “Caution” Board displayed.	OK / Not OK	
4.	Stacking / Storing of different type of combustible materials.	OK / Not OK	
ROAD SAFETY			
1.	Driving by unauthorized person.	Yes / No	
2.	Loading of material on truck, dumper securely.	Yes / No	
3.	Material falling from vehicle while transporting.	Yes / No	
4.	Speed Limit.	Yes / No	
5.	Transportation of persons by dumper.	Yes / No	
6.	Going up and coming down from moving vehicle.	Yes / No	
7.	Indulging in Horse Play on job.	Yes / No	
8.	Reverse Horn.	Yes / No	



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CONSOLIDATED SITE SAFETY PLAN

Sl. No.	Check Points	Observation	Measures
9.	Location of Overhead Lines identified and pre-cautions taken.	Yes / No	
MISCELLANEOUS			
1.	First Aid Box with proper medicine and its maintenance.	OK / Not OK	
2.	Validity Date of medicine.	OK / Not OK	
3.	Illumination.	OK / Not OK	
4.	Safety board and safety promotional materials i) Posters. ii) Stickers.	Yes / No	
5.	Accident Report form.	Yes / No	
6.	Reporting System with Head Quarters.	Yes / No	
7.	Arrangement of drinking water and sanitation.	OK / Not OK	
8.	Provision of emergency vehicle.	Yes / No	
9.	Telephone Nos. of nearby hospitals displayed at prominent place • For Burns • For Fractures • For Head Injuries • General	Yes / No	
10.	Telephone Nos. of nearby Fire Stations / Police Stations / Other establishments nearby for emergency help, displayed at prominent place	Yes / No	

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Signature of BHEL Supervisor



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CONSOLIDATED SITE SAFETY PLAN

CHECK LIST FOR HEAVY MATERIAL HANDLING EQUIPMENT INSPECTION

Name of Sub-contractor

Work Order No.

Nature of work

Name of the Project site

Job. No.

Material Handling Equipment Type

Identification Number

Date

Sl. No.	Check Points	Observation	Measures
1.	Marking of Maximum Safe Working Load	OK / Not OK	
2.	Crane Hook and Latch for the Hook	OK / Not OK	
3.	Availability of Trained operator with Licence	Yes / No	
4.	Training of persons involved in proper signaling	Yes / No	
5.	Checking of various safety limit switches	OK / Not OK	
6.	Condition of Boom	OK / Not OK	
7.	Condition of Rope	OK / Not OK	
8.	Condition of Battery and Lamps	OK / Not OK	
9.	Safety Guards for operator and other personnel	OK / Not OK	
10.	Fire Extinguisher availability	Yes / No	
11.	Warning and Danger boards where required	Yes / No	
12.	Use of Pilot vehicle / warning by personnel during transport of heavy / oversized material	Yes / No	
13.	Vehicle condition of tyres, brake, clutch, lamps and horn.	OK / Not OK	

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Signature of BHEL Supervisor



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CONSOLIDATED SITE SAFETY PLAN

CHECK LIST FOR ARC WELDING TRANSFORMER

(Reference Standard IS-1851 – 1975 Specification for Single operated type Arc Welding Transformer)

Test to be done before first use at site and repeated periodically once in 6 months

Name of Sub-contractor

Work Order No.

Nature of work

Name of the Project site

Job. No.

Welding Set make, model and

Capacity

Serial Number

Date of Testing

Date of Testing					
Sl. No.	Check Points			Measured Value / Observations	Observation
1.	General Condition of the Set				OK / Not OK
2.	Earthing of Welding Set at Two Places				Yes / No
3.	Open Circuit Voltage in Volts (Measure Output voltage with rated input voltage without loading the set)				OK / Not OK
4.	Physical Inspection, Check Cable, termination, Insulation , cleanliness, Guard against live parts, fuse rating and healthiness				OK / Not OK
5.	Insulation Test (IR value in Megohms) • Primary Terminal • Secondary Terminal • Continuity of Coil - Primary • Continuity of Coil - Secondary • Use appropriate Meggar				OK / Not OK
6.	Load Test U= 20 + 0.04 I Where U is the Load Voltage in Volts I is the Load Current in Amps. Check the results as per the above formula.				<u>Results</u> Accepted / Rejected
Sl.No.	Welding Current	Voltage	Electrode Size	Remarks	

Signature of Sub-contractor Supervisor.

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CONSOLIDATED SITE SAFETY PLAN

CHECK LIST FOR DC ARC WELDING GENERATOR

(Reference Standard IS-2635 – 1975 Specification for DC Electric Welding Generator)

Test to be done before first use at site and repeated periodically once in 6 months

Name of Sub-contractor

Work Order No.

Nature of work

Name of the Project site

Job. No.

Welding Set make, model and

Capacity

Serial Number

Date of Testing

Date of Testing

Sl. No.	Check Points			Measured Value / Observations	Observation
1.	General Condition of the Set				OK / Not OK
2.	Earthing of Welding Set at Two Places				Yes / No
3.	Open Circuit Voltage in Volts Speed of Machine in RPM (Measure Output voltage with DC Voltmeter without loading the set) Check value measured with Nameplate rating.				OK / Not OK
4.	Physical Inspection, Check Cable, termination, Insulation , cleanliness, Guard against live parts, fuse rating and healthiness				OK / Not OK
5.	Insulation Test (IR value in Megohms) • Earth to Coil A • Earth to Coil B • Earth to Coil C • Continuity of Coil A • Continuity of Coil B • Continuity of Coil C (Use appropriate Meggar)				OK / Not OK
6.	Load Test (Check the results as per the formula) U= 20 + 0.04 I - Where U is the Load Voltage in Volts I is the Load Current in Amps.				Accepted / Rejected
Sl.No.	Welding Current	Voltage	Electrode Size	Remarks	

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CONSOLIDATED SITE SAFETY PLAN

CHECK LIST FOR STAGING

Name of Sub-contractor

Work Order No.

Nature of work

Name of the Project site

Job. No.

Date

Sl. No.	Check Point	Details action	Observation OK / Not OK
1	Staging material	All load bearing vertical pipe/tubes shall be minimum medium thickness as per BIS 1161(Light gauge thickness pipe shall not be used without approval of engineer in charge).	
		No warped, cracked, bend and damaged material shall be used. Staging pipe shall be checked for adequacy of thickness due to rusting.	
2	Vertical supports	Size and intervals shall be as shown in staging drg.	
		Shall be erected to true vertical and shall not be placed in slope.	
		Verticals shall not be placed over the earth / ground directly.	
		Either wooden planks of good quality or steel plate shall be placed between vertical supports and earth base.	
3	Ties & Bracings	Size and intervals shall be as shown in staging drg.	
		Shall be erected to true line and shall not be placed in slope.	
4	Clamps	Clamps shall be properly cleaned in suitable oil before put into use so that to ensure the tightness of bolt and nut to the required level.	
		Damaged clamps shall not be used. All clamps & wedges shall be periodically checked for tightness till clearance issued by engineer in charge for de-centering.	
5	Base	Base shall be strong enough to receive the load. In case of earth base it shall be well compacted to desired level and no loose pockets shall be found.	
6	Wedges	Wedges if any to be provided between staging and form work shall be of good quality of wood and shall be fixed with the form work properly by nailing etc.	
7	Joints	All joints between vertical supports and Ties / bracings shall be properly clamped to the required tightness.	
		Care shall be taken to ensure that no joints are left unclamped.	



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CONSOLIDATED SITE SAFETY PLAN

8	Rigidity	Rigidity of staging as whole shall be verified thoroughly before allowing for concrete by a team of engineers concerned and a joint protocol shall be made.	
9	Removal of form work / staging	No form work or staging shall be removed before completion of allowed curing and setting time for concrete and without prior permission from the Engineer in writing.	
10	Construction Loads	Construction loads over temporary staging shall be well with in DEAD LOAD + LIVE LOAD as per approved staging design assumptions.	
11	Impact Loads	Impact load over staging shall not be allowed due to movement of construction vehicles, concrete conveying equipment etc. Ready made concrete delivered from batching plant through chocked pipes shall not be tied to staging without approval of engineer in charge. Engineer in charge to verify of condition free flow of pumped concrete through the pipe without excessive pumping pressure to avoid any accidental loads over staging pipes etc.	
12	Illumination	Sufficient illumination below the centering shall ensured for verification of above check points during night hours & wherever clear visibility is absent for checking.	
13	Curing	Excessive ponding of water beyond 25 mm over cast RCC slab during rains or curing shall not be allowed to avoid overloading of staging pipes.	
14	Workforce/skilled labours	Separate required skilled work force with fitters & carpenters etc. shall be kept to attend to above points during concreting.	
15	Approach to workplace	Proper safety ladder or approach stool shall be provided for access to inspection of staging.	
16	Fire hazards	Ensure prevention of fire hazards due to welding & electrical short circuit etc. in the total staging area.	
17	Flooding of water at base of staging	Ensure required dry conditions are maintained at the base level of the staging to avoid slippages of wedges with required pumps & other facilities.	
18	Camber	Ensure that for beams above 6 m span required camber as per approved drawings are maintained by adjustment of the staging props.	

Signature of Sub-contractor Supervisor	Signature of BHEL Supervisor
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CONSOLIDATED SITE SAFETY PLAN

Hazards Risk & Preventive Measures at Construction Sites.

(SITE SAFETY PLAN – 2)

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CONSOLIDATED SITE SAFETY PLAN

1. SURVEY / RECEIPT OF MATERIAL AT STORES & STORAGE

ACTION BY : Concerned Site Engineer / Supervisor

Sl.No.	HAZARDS / RISK	PREVENTIVE MEASURE
1	Snakes / Insects bite, inclement weather, water borne diseases etc.	• Provide gumboots, water bag, train personnel in first Aid treatment, provide First Aid Box
2	Injuries due to fall of material on workmen during striping of packing & unloading	• Proper instruction to workmen about work at work and Carry out work under effective supervision by skilled personnel. • Manufacturers instructions if any, to be followed during these activities. • Use of proper ramps and stoppers while unloading the material and also to ensure that the ramp used will have sufficient load bearing capacity. • Ensure that the equipment is stored on leveled firm floor / ground to prevent tilting / toppling.
3	Injuries due to fall of material on workmen due to improper stacking and tying	• Proper tying, stacking of material and necessary support to the equipment in storage area. • Regular check up of storage area / work shop for removal of material / unwanted scrap. • Display of necessary safety precaution boards and Do's & Don't's charts at workplaces and storage areas. • Oxygen and Acetylene cylinders are to be stacked separately and label mentioning full or empty to be displayed for easy identification. • Chains, slings, cables etc. are to be stacked under the tarpaulin or asbestos / GI shed with tarpaulin covered over shed to avoid seepage of water during raining season. • Proper sequence / labeling of material stacking be followed for quick retrieval.
4	Fire	• Ensuring that the materials stacked are classified as combustible, inflammable, explosive and stored separately. • Ensure right type & quantity of extinguishers are available and personnel trained for using the extinguishers.
5	Handling chemicals, paints etc	• Ensure availability of Material Safety Data Sheets (MSDS). • Ensure strict adherence to the requirement of MSDS.



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CONSOLIDATED SITE SAFETY PLAN

2. MARCHING & PILING

ACTION BY : Concerned Site Engineer / Supervisor

Sl.No.	HAZARDS / RISK	PREVENTIVE MEASURE
1	Fall of material / slings cut off / fall of person from same level	• Use of proper slings and checking adequacy before use. • Selection of proper hitch while shifting sleepers. • Path should be free from interruption. • Carrying out work by Skilled operator / Signal man under supervision of knowledgeable supervisor. • Use of PPE's like Safety shoe, helmet, hand gloves.
2	Hand injury, head injury, fall from same level, struck by, struck against etc.	• Distance must be maintained while inserting the wooden plank. • No one shall be entertained under the rig to insert plank, pouring water, grease etc. while marching. • Marching must be done in the presence of skilled supervisor. • While shifting the sleepers by the winch following needs to be ensured: ➤ The correct hitch must be selected ➤ Path should be cleared from barriers ➤ No one should have direct touch with sleepers ➤ Guy rope should be tied to control the swings of sleepers ➤ Safety helmet, shoe, gloves and belt will be tied by the lifeline on workers shoulder level ➤ Operator should not use loose shirt
3	Toppling of rig	• Sleepers should be provided equally on both the sides and under the eye • Exact counter weight should be placed at rear end • Dumps would be compensated by placing the wooden pieces over the sleepers / filling with sand to make the surface level • Care must be taken while rolling the wire rope on Ballard for marching straight and returning to a required angle.
4	Fall of person from height	• Safety belt must be used and lifeline be tied at shoulder level while putting the channel under the helmet for resting the hammer.



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CONSOLIDATED SITE SAFETY PLAN

2 MARCHING & PILING --Contd

ACTION BY : Concerned Site Engineer / Supervisor

Sl.No.	HAZARDS / RISK	PREVENTIVE MEASURE
5	Greasing and maintenance of rigs	• Greasing should be done while the machine is in rest • Gloves should not be used for doing any repair in case of running machine • Greasing gun must be used • Structural frame should be cleaned from grease to avoid slippery surface. • All nuts & bolts should be tightened before it get broken off by shear. • Wire rope should be checked visually and be changed if needs.
6	Injuries while operating / piling	• Wearing gloves is necessary before handling the wire ropes / handling bitumen • Wearing shoes • Operation must takes place under the supervision of piling in charge / front line supervisor • All workers are clearly told about their responsibility & they must understand clearly. • Do not allow any body to sit near by the rig while in operation. • Wearing of helmet with chin strap • Fly wheel and gear pulleys are properly guarded • While pouring the concrete, worker will ensure that the belts are used properly.
7	Fire	• Fire extinguisher of Halon type be placed with each rig. • All workers are to be trained to operate the extinguishers • Water buckets be placed near by piling area to control the class A fires.
8	Slipping of tripod legs for piling / Injury	• Tripod legs should be properly spiked in the ground. This will prevent the accident due to slip of the tripod legs when rested on a paved ground or sleepers. The shear legs and bases become fatigued with usage. Those should be replaced frequently.
9	Failure of pulley	• The failure of a pulley due to shearing of pin is quite common. Therefore frequent check up of pulley is essential.



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CONSOLIDATED SITE SAFETY PLAN

2 MARCHING & PILING --Contd

ACTION BY : Concerned Site Engineer / Supervisor

Sl.No.	HAZARDS / RISK	PREVENTIVE MEASURE
10	Failure of wire rope	The wire rope linked between main piling tools should be checked frequently.
11	General	- All workers must wear tight fitting clothes. Use helmets, hand gloves, protective foot-gears, earmuff and eye goggles. - Electrical connections must be handled with a great deal of care. Direct tapping of power should be prohibited. Each unit should have its own switchboard. All cables should be properly insulated. Earthing is to be ensured. - All movable part of the winch should be suitably guarded. - Engine must be stopped before replacing belts.
12	Damage of near by structure	Piling work causes vibration, that may damage near by structure, particularly old ones. It is thus essential to keep watch on the old structure while piling is in process. Condition of the structure around the piling area should be examined before starting of work.
13	Pile breaking	For pile breaking operation piles projected more than 2 m may be considered for groove chipping and gas cutting at a level of 5 m height above the cutoff level avoiding tilting or collapsing of the upper part.



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CONSOLIDATED SITE SAFETY PLAN

3. EXCAVATION

ACTION BY : Concerned Site Engineer / Supervisor

Sl.No.	HAZARDS / RISK	PREVENTIVE MEASURE
1	Under ground cables / HT lines / Electrocutation	Site clearance and information on location of specific area be obtained from concerned customer's department.
2	Improper shoring / collapse of trench	- Excavate as per the angle of repose of the particular soil. - Provide shoring wherever required - The excavated soil shall be kept at a distance of more than 5 feet or half of the depth of the trench, whichever is more from edge. Proper slope must be given. - Vehicle movement should not be allowed near by the edge of the trench. Necessary protection should be taken care. - Cutting should be done from top to bottom. Under cutting should not be allowed. - While providing steps for access / egress, slippery surface must be avoided. Proper ramp must be provided. - Work must be done under the control of skilled supervisor.
3	Ground water seepage & accumulation	- Dewatering to be done before allowing workmen in or around the pit - Suitable pump must be used if heavy seepage exists.
4	Personnel falling into excavated pit	- Provide proper sign / warning board - Use proper means of access. Ladders to be provided which should be projected (extended) more than 3 feet from the ground level. 3 feet height Barricade be provided near the excavated area. - Proper illumination be provided. - In deep excavation (more than 4 feet), persons working at slope or bench of the pit should wear safety belt. - One ladder should be placed at the pit site all the times. One ladder for each 100 m length.
5.	Material falling into excavated pit	- Store material away from the edge of the pit (away from the barricade) - Edge preparation be ensured - Vehicle movement permitted away from the pit barricade.



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3. EXCAVATION Contd.

ACTION BY : Concerned Site Engineer / Supervisor

Sl.No.	HAZARDS / RISK	PREVENTIVE MEASURE
6	Occupation health hazards	• Water spraying be ensured over the fly ash or fines for suppression of dust • Nose / dust mask must be used • Safety shoe with ankle must be used • Ensure eye protection using goggles.

4. BACK FILLING & SAND COMPACTION

ACTION BY : Concerned Site Engineer / Supervisor

Sl.No.	HAZARDS / RISK	PREVENTIVE MEASURE
1	Reversing of vehicle / personnel injury / toppling of vehicle	• Reversing horn (back gear horn) of each vehicle should be working • Driving near to the edge of the excavation be avoided. • Back view mirror must be fitted and intact in proper position on each vehicle • Proper approach to be made to pit, which required to be backfilled as well as to the source of backfilling material. • Proper signaling be ensured while reversing the vehicle. • Activities are to be performed under the control of skilled supervisor.
2	Compactors	• All the drivers should possess a valid license. • For mini hand operated compactors, all rotating parts should be guarded. • Near by persons should be alerted while reversing the compactors • Hand gloves should be used in case of mini hand operated compactors • Care must be taken while starting the hand operated compactors.
3	Excavation area / toppling of rollers & compactors	• Area under excavation should be barricaded. • Warning sign should be displayed. • Drivers / operators should be advised suitably • Constant supervision must be provided. • Repair and maintenance of compactors or rollers should be done out of compactor area • Proper illumination be provided. • JCBs need not go nearer to edge of excavated area. • JCB operators must use helmet.



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CONSOLIDATED SITE SAFETY PLAN

5. CONCRETING / SHUTTERING.

ACTION BY : Concerned Site Engineer / Supervisor

Sl.No.	HAZARDS / RISK	PREVENTIVE MEASURE
1	Person working at height / fall from height	• Make proper platform with handrail • Use safety belt at height • Use safety net if necessary • Use personal protective gears as required
2	Placing of loose material at top / fall of material	• Provide toe boards throughout periphery of the platform • Avoid gap between platform planks • Do not place loose materials over or near by the edge of the platform • Keep the hand tools in a particular box and the box should be tied / fixed with the platform. • Use hand tools by tying with rope to a fixed structure, so that it does not fall off due to inadvertent slippage etc. • Use safety net having smaller mesh size. • Avoid standing just below the working area.
3	Improper approach way / fall of person from height	• Use proper ladder with handrail placed on firm ground and lashed / fixed both ends of the ladder • Make proper landing place
4	Lifting of materials like shutters, concrete etc.	• Check wire ropes & brakes of the machines daily • Check lifting tools and tackles daily • Proper slinging • Check the locking system of concrete bucket regularly
5	Noise pollution while operating vibrator, compressors, improper handling of material, electrocution, electrical fire etc.	• Use of ear plug or ear muff • Use of hand gloves • Electrical connection to be taken through ELCB • Checking of electrical grounding system periodically • Overhead work to be coordinated properly to avoid injury to people working underneath. • Proper instruction to be given to the workmen by supervisor while working • Constant supervision must be provided • Greasing need not be done on running mixer machine • Carbon dioxide type extinguisher should be placed nearby DB / SDB



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5. CONCRETING / SHUTTERING. Contd.

ACTION BY : Concerned Site Engineer / Supervisor

Sl.No.	HAZARDS / RISK	PREVENTIVE MEASURE
6	Protruding of nails / injuries, scratch	- Protruding nails from the shuttering planks should be removed before put into the use. - Nails should not be thrown or spread at site. - Nails must be kept in proper box.
7	Pouring of concrete using transit mixer	- Reversing horn (back gear horn) of each vehicle should be working - Helper should be provided to operate the lever to unload the concrete and guide the vehicle while reversing. - Concrete should not be collected by bond carrying on hand for making cubes - Before making move, the helper should check that nothing is lying / nobody is sleeping under the tyres - On daily basis maintenance work shall be carried out. Maintenance work shall be taken place after shutdown of engine fully and informing driver. - No one should be permitted to sit over the tyre shield. - Speed limit permitted at work site must be followed. - Hand break and wedge should be placed under the tyre while parking at site for unloading the concrete. - Each and every rotating part of transit mixer should be guarded properly - Tyre pressure needs to be checked at regular interval. - Mixer fitness test validity to be ensured - Break efficiency, head lights, reverse horn coordination should be checked periodically. - Concreting activity must be done under the control of skilled supervisor.
8	Defects in wire rope and its clamping in mixer chain	Proper examination by a competent person before taking in use. Lubricant should be applied as per norms.
9	Inhaling of exhaust gases / health injury	Inhaling of exhaust gases coming out of Diesel mixer may cause diseases so it should be directed away from the operator.



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5. CONCRETING / SHUTTERING. Contd.

ACTION BY : Concerned Site Engineer / Supervisor

Sl.No.	HAZARDS / RISK	PREVENTIVE MEASURE
10	Cleaning of mixer drum / health injury	• Accident normally occurs during cleaning mixer drum , so care should be taken to display the notice “ UNDER REPAIR” while cleaning the Drum.
11	Contact of body parts with power transmission belt / health injury	• Each and every rotating part of transit mixer should be guarded properly using protective guard.
12	Electric Shock	• All part of electrical installations should be so equipped so as to prevent danger of electrical shock. • Personal protective equipment such as rubber boots should be considered as providing adequate protection against risk of electric shock.



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6. HANDLING OF REINFORCEMENT

ACTION BY : Concerned Site Engineer / Supervisor

Sl.No.	HAZARDS / RISK	PREVENTIVE MEASURE
1	Sharp edge / scratch / injury	- Persons handling reinforcement rod should wear hand gloves and safety shoes. - While shifting the lengthy rods, the group of persons involved in shifting should be of nominal heights. - While shifting the rods, the passage clearance must be ensured.
2	Rod cutting machine / cutting injury / caught in rotating parts	- While bending the rod the nearby persons should be alerted. - The rotating part of the machine should be guarded - Avoid using loose shirts. - Ensure proper earthing of machine and connection taken through ELCB.
3	Persons falling from height / Injury.	- Safety belts must be used while handling the reinforcement at a height of more than 2 meters. - Safety net to be tied. - People working underneath area should be alerted.
4	Tying of reinforcement bars / hand puncturing	- Hand gloves should be used. - Only one person should do this job in one place.
5	Fall of reinforcement rod	- Proper stacking of rods to be done if required to store at some elevated level - Required quantity of rod should be shifted to elevated work spot.
6	Projected edge / Eye injury	The projected edge of the stacked rods should be covered.
7	Bending / breaking of rod	Carbon content in reinforcement to be checked.



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7. PRECASTING

ACTION BY : Concerned Site Engineer / Supervisor

Sl.No.	HAZARDS / RISK	PREVENTIVE MEASURE
1	Reinforcement bar / personnel injury, scratches	• Gloves should be used • Reinforcement bars should be stacked properly • Care should be taken while tying bars with steel wire • Good house keeping should be maintained.
2	Mixer machine	• Rotating parts should be guarded • Greasing of gears / other maintenance should be done in switch off mode. • Ear plug should be provided if necessary • Person should carry only 50 Kg • Connection should be given through ELCB.
3	Pouring of concrete / fall of person / injury	• Neat and strong walk way should be provided over the network of reinforcement bar • Safety shoe should be used • Load carrying helmet should be used • Hand gloves should be used.
4	Vibrator / noise, electrocution,	• Gloves should be used • Use of ear plugs • Proper earthing of equipment and supply provision through ELCB • Keeping the vibrator unit at one side to avoid hindrance to movement



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8. FABRICATION

ACTION BY : Concerned Site Engineer / Supervisor

Sl.No.	HAZARDS / RISK	PREVENTIVE MEASURE
1	General	• Space should be earmarked for fabrication yard at least 40 – 50 feet away from a rail track, road and overhead transmission lines. • All equipment electrically operated must have proper earthing and guards in position. • Electrical supply should be taken through ELCB. • The use of rubber gloves or leather gloves in dry condition is an absolute must, while operating hand held electric tools. • Drilling machine , grinding machine should have safety guard in position. • While unloading structural steel from trailers or wagons by cranes adequate protection should be taken to make the trailers or wagons stationary by putting scotch blocks or wedge on the wheels. • No persons should stand under hanging or swinging load area. • While fabricating heavy structures, adequate props to be given to avoid toppling of the component under fabrication. • Material should not be dumped haphazardly. It should be stacked properly in order. • All the confined space such as tanks, control equipments etc should be ventilated properly.



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9. ERECTION

ACTION BY : Concerned Site Engineer / Supervisor

Sl.No.	HAZARDS / RISK	PREVENTIVE MEASURE
1	Location of cranes / unlevelled surface of earth / toppling of crane / Overloading of cranes / Setting of cranes / Collapse of boom Physical injury of men and damage of equipment material etc.	- Ground surface should be leveled. - Stability of earth should be checked. Mobile crane should be parked on hard soil. - Crane should not be placed near the edges of pit or excavations. 1'' thick metallic plate or wooden sleeper to be placed on the ground to increase the stability of the crane to be positioned and distribute the load equally. - Suitable approach shall be made for crane marching. Wooden sleepers shall be used wherever necessary. - Proper boom angle and radius shall be ascertained before going to lift a load. - Boom over hoisting limit/ cut off switch should be checked before use. - Check tires condition / pressure. - Overloading shall never be allowed at site. - Tag line should be used while hoisting heavy and bulky materials. - Limit switches of cranes should be tested frequently for ensuring its proper functioning. - Operator should be able to see the hook and load throughout the hoisting period.
2	Poor signaling / operation	- Employ experienced signalman only - Crane operator should be familiar with those signal - Operator should possessed with valid license - Hindrance to operators cabin should be avoided.
3	Overconfidence / negligence / inexperience on the part of workmen	- Check for people movement underneath the lifted load. - Continuous PEP talk to create awareness - Provide constant supervision
4	Reversing the crane	- Healthy ness of reverse horn to be ensured. - Use of reverse horn before movement - Instruct the helper to guide crane operator while reversing - Stop people movement behind the crane area
5	Failure of lifting tackle, sling, chain pulley / fall of material	Before lifting any load its actual weight should be ascertained. Center of gravity should be identified and mode of load transfer at sling point to be considered.



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9. ERECTION Contd.

ACTION BY : Concerned Site Engineer / Supervisor

Sl.No.	HAZARDS / RISK	PREVENTIVE MEASURE
		- Exact determination of sling capacity, sling angle, factor of safety - Factor of Safety should be at least 2.5 - Radius of swing should be identified - A visual check must be done regarding fitness of all lifting tackles, ropes, slings etc. before every use. - The common tendency of checking gear meshing, lubrication, coupling, hole matching etc. by feeling with a finger must be strictly curbed. - Selection of bars, rollers, skid etc. should be made depending the type of equipment to be handled. - No slings should be overloaded. - Proper quality of pulley block should be used. In no case pulley block suitable for fiber rope should be used for steel wire ropes. - No person shall walk, stand or work beneath suspended load. - During erection only one signaler shall give signals. However STOP signal should be obeyed whoever gives.
6	Lifting of structure / improper hitch / fall of material	- Correct hitch to be selected respective to the structure to be lifted - Sudden jerk should be avoided. - The structural members should be kept in orderly manner on the ground so that those items do not roll down while being handled. - Clear passages should be left for easy handling and transportation of structures. - All persons shall stand clear when a crane is sorting or shifting steel girders or other structural materials. - While using spanners, reverting hammer etc. at height should be tied with rope fixed to nearby structure so that it will not drop in case of slip. - Care should be taken while lifting loads. Proper tag line must be used for guiding while lifting loads. - While positioning a beam of fabricated structure etc. it shall be so held that the workers hand does not get jammed against other objects.



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9. ERECTION - Contd

ACTION BY : Concerned Site Engineer / Supervisor

Sl.No.	HAZARDS / RISK	PREVENTIVE MEASURE
		- Loose bolt, nuts, and tools must be kept in a box and not on structures. Box must have proper anchorage. - Care should be taken to fasten the erected members properly and secure by guys etc. wherever necessary. - Providing packing over sharp edges should protect ropes and slings. - Slinging should be carefully done so as to prevent the load from slipping. - Proper sequence of erection should be followed. - All electrically operated equipments like grinding machine, drilling machine, welding machines etc. must be properly earthed. - The structural member should be able to taken out as per sequence of erection without disturbing the stack. At the same time light structure should not be stacked below heavy structural member to avoid damage. - Safety appliances like safety Helmets, gloves, belts must be used suitably at erection sites.
7	Barricade of working area / Fatal hit	- Area should be barricaded - Appoint experienced signalman.



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10. ROAD MAKING

ACTION BY : Concerned Site Engineer / Supervisor

Sl.No.	HAZARDS / RISK	PREVENTIVE MEASURE
1	Hot mix plant / Burns	• Ascertain the direction of wind and then locate. • Provide fire fighting equipment • Avoid open fire near fuel tank • Helmets, Gumboots, Goggles and Hand gloves should be provided for operators, mechanics and helpers • Avoid using loose clothes • Ensure that the guards on moving parts are firmly fixed and properly • The platform for operation should be strong and spacious and provided with side railing. Ladder should be provided for access. • Avoid direct contact with dryer drum / its aggregate. • Avoid leaning over the chamber mixer. • Avoid back fire
2	Heating Bitumen / Handling	• Container should be leak proof & kept closed. • Temperature should be maintained • Avoid back fire • Ensure the buckets for carrying bitumen are intact • Hand gloves shall be used
3	Stones, crushed stones / Injuries	• Stones should be kept at side. • Reverse horn of the truck must be healthy
4	Road rollers / injury	• Operator should have valid license • Repair / Maintenance work should not be done while in motion / engine "ON" condition. • Roller operating area should be indicated by planting red flag on both sides.



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11. ROOF WORK

ACTION BY : Concerned Site Engineer / Supervisor

Sl.No.	HAZARDS / RISK	PREVENTIVE MEASURE
1	Standing on and moving above roof under construction / Falling and injury	• Fabricate temporary structure / surface of adequate strength and supported at a number of points to distribute load. • If site is dusty, then dust control measure must be provided to avoid dust deposition on the roof. • Suitable platform should be furnished with width of more than 600 mm for moving along horizontally. • Cat boards, flat ladder, crawling boards should be used for moving along vertically. • A safety net or catch platform should be installed under the roof if it is necessary. • Evacuate all workers under the roof where work is in progress. • Suitable precaution board should be displayed on working spot. • Guard rails be installed around the roof edge and roof openings along with toe guard and middle rail. • Proper egress and access to be provided to reach the work spot. • All roof materials should be stored at ground level and shifted as per requirements and do not be stored at elevated work spot. At most care must be taken while transporting the fragile material from store to work spot. • Proper PPEs like suitable clothing, footwear, with non-slip soles safety belts, fall arresting system (made preferably from rope).
2	Electrocution / Injury	• The electricity supply to adjacent overhead wires should be interrupted or the wire should be rendered harmless by some other means. • Proper illumination arrangement must be made.
3	Health	• Medical examination would be done to detect any defects of equilibrium before being engaged at work. • Emergency vehicle should be parked at site for round the clock. • First aid hospital shall be identified and phone number would be displayed at all visible locality.



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12. WORKING WITH PORTABLE TOOLS

ACTION BY : Concerned Site Engineer / Supervisor

Sl.No.	HAZARDS / RISK	PREVENTIVE MEASURE
1	Electric shock, Burns, Electrocutation / Injury	• Earthing of all electrical equipment must be ensured. • Supply through ELCB should be provided. • Regular checking of ELCB operation is to be done. Register should be maintained . • Double earthing should be followed. • Electrical cable should be neatly traced along the platform and handrail. Avoid placing them on the platform or routing in haphazard way. • 3 pin plug should be used for power tapping. • Proper shed should be provided to DBs to protect the same from extreme weather condition. • Avoid number of intermediate cable joints. One joint per 25 meter is allowed with necessary insulated taping. • Appropriate PPE should be used. • “DANGER BOARD”, “ MEN ON THE JOB” “DO NOT SWITCH ON” boards shall be put up as required. • Insertion of loose wires in the socket shall not be allowed. • Dry chemical type fire extinguisher shall be kept in the DB / FDB location. Use of these must be known to workers & supervisors.
2	Caught in rotating parts, slip from hand / injury	• Ensure that the guards are firmly and correctly fixed. • Avoid doing repair / maintenance work during in motion. • Avoid stagnation of water in and around. • Avoid wearing loose shirts • Retain hold of hand tools until moving parts have stopped. • Avoid leaving the equipment as it is without “ switch off”. • Use hand gloves free from oil & grease. • Never carry the machine by its power cord.
3	Occupational health hazards / Noise	• Use ear plug if necessary. • Change portable tools if noise level is not controllable.



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13. HANDLING OF DIESEL

ACTION BY : Concerned Site Engineer / Supervisor

Sl.No.	HAZARDS / RISK	PREVENTIVE MEASURE
1	Flammable and toxic vapors on exposure to atmosphere. Being heavier than air become difficult for it to disperse.	- Care should be taken to prevent accidental ignition and explosion of the vapors. - Electrical cables should be properly insulated to prevent spark and fire. - Incandescent lamps (if used) , shall have glass cover and protective cage. - To take out flammable liquids from 200 L drum to small containers, manually operated hand pump with funnel shall be used. Lid of containers shall be immediately replaced. - Match box or gas ignited lighters use must be avoided. NO SMOKING / NO NAKED LIGHTS board must be displayed. - Container should be stored in upright position in an open air compound and securely fenced and surrounded by a bund sufficient to hold the content of the largest drum stored plus 10%. - In case drums are stored horizontally wedges must be used. “ Highly Inflammable Liquid” caution board should be displayed at the entrance of the storage area. - Care must be taken to avoid spillage & leaks by maintaining screw caps and the use of funnels, spouts or a symphonic device. - Spillage can be soaked with dry sand, which could then be placed at least 4 M away from any possible vapour source or combustible stock of materials.
2	Cleanliness and disposal of rubbish / Fire	- It is vital that all waste of highly flammable liquids or materials contaminated by them is disposed off immediately and workplace kept clean all times to remove hazards. - Within workplace, metal bins with lids are required to receive rags and waste. - All bins should be removed to store overnight. Rubbish is to be incinerated in small quantities in the open at least 8 m from any building. Cleaning should be done with nonflammable solvent in well-ventilated places. Detergent, degreaser, cleanser are often satisfactory.



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13. HANDLING OF DIESEL - Contd.

ACTION BY : Concerned Site Engineer / Supervisor

Sl.No.	HAZARDS / RISK	PREVENTIVE MEASURE
		• Wooden, plastic or non-sparking alloy implements should be used to clean residues from floor or other surfaces. • Heat should never be applied to normally empty vessels as they still contain explosive mixture. • Empty containers with cap removed should be crushed and disposed off as rubbish, but not incinerated. • The cleaning or repairing of drums on site is not recommended. They should be returned to the supplier if they are not to be removed.



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14. SITE TRANSPORTATION

ACTION BY : Concerned Site Engineer / Supervisor

Sl.No.	HAZARDS / RISK	PREVENTIVE MEASURE
1	Site access or routing at site / accidents	- Site entrance should be located in such a way so as to cause minimum inconveniences to the public or other road users. - Suitable warning notice should be displayed at the convenient locations (adjacent to overhead lines or near storage areas or excavated pits etc.) - Provision of one way system and the avoidance of vehicle reversal recommended upto a satisfactory level. - Protective embankment should be provided at the all excavated sites particularly at the areas where lorries or dumpers trip into excavations.
2	Vehicles & drivers / Accidents	- Fitness of vehicle needs to be checked. - Driver must possess valid license. - Tiers condition / Battery condition be checked.
3	Violation of driving rules / accidents	- Drivers must follow the traffic rules and signals. - Speed limit and sharp bends must be avoided. - Stop and proceed carefully at unmanned junction points.
4	Over loading / Accidents	- Over loading causes more wear & tear of tires, road surfaces and decreasing efficiency of the moving components of the vehicle. - It also causes less control on steering, inadequacy of break power, overturning while negotiating sharp bends.
5	Stacked material / Accidents	- Transport vehicle usually should go to the stacked material site for loading either manually or by machine. - In case of loading by a ladder strong canopy or cap should be provided for the safety of the driver. - The engine of the vehicle should not be kept running during the period of stacking. - In case of loading or transporting of material such as built up columns or MS rods which are projected beyond the vehicle should be provided with precautionary signs suitable (Flag or Signal man), to avoid injuries to the people. - Human being should not be transported in Truck / Dumpers / Cranes etc. - Filled Oxygen and Acetylene cylinders should not be thrown from vehicle. It must be shifted through bottom rim.



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CONSOLIDATED SITE SAFETY PLAN

15. WORKING AT HEIGHT

ACTION BY : Concerned Site Engineer / Supervisor / Site Safety Engineer

Sl.No.	HAZARDS / RISK	PREVENTIVE MEASURE
1	Fall of a person / injury	- Fabricate temporary structure / surface of adequate strength and supported at a number of points to distribute load. - Suitable stable platform should be furnished with width of more than 600 mm for moving along horizontally. - Proper access / egress should be provided. - Good house keeping should be maintained at elevated work place. - PPE like safety belts, fall arresting system should be incorporated / anchored of lifeline with permanent structure at a height of person shoulder level. - Guy ropes shall be used for anchoring lifeline of safety belt to facilitate safe horizontal movement at height. - In special circumstances fall arrestor should be used where usage of safety belt is non-practical.
2	Fall of material / Injury	- Platform should be spacious to allow placement of material and space for working person. - Barrication / handrails, toe boards should be provided if necessary. - Guard / Safety net is provided suitably for preventing falling of material from height.. - Overloading on temporary platform is avoided. - Protect structures against external impact. - Build and dismantle the structures in accordance with design.
3	Improper scaffolding	- Erected on firm and level ground - Proper approach should be provided by ladders, Ramps etc. - Gangway jalties, which are used to form platform at top, should be tied firmly. - Slippery / wet condition over the working platform should be avoided. - Safety belt & safety helmet are must for the people who are working on scaffolding platform.



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16. WELDING & GAS CUTTING

ACTION BY : Concerned Site Engineer / Supervisor

Sl.No.	HAZARDS / RISK	PREVENTIVE MEASURE
1	Fire, explosion, backfire / Injury	- DA and Oxygen cylinders should be kept in upward position and tied firmly. - Cylinders should be shifted by wheel trolley. - DA cylinders should be covered by wet cloths or gunny bags. - Flash back arrester should be fitted in all DA cylinders. - Nozzle of cutting torch should be properly tightened and kept clean from dirt, dust, metal depositions etc. - No joints and extension of hoses are allowed for DA. - If any crack is found on the hose pipe it shall be thoroughly checked and replaced. - Provide right type of fire extinguishers near by the work spot. - Gas cylinder should be stored properly in a shed. Empty and full cylinders should be kept separately and labeled. - Oil or Paint drums (empty or with content) shall not be allowed to be kept near the vicinity of weld area.
2	Bare wire or improper insulation / Electrocutation	- Earthing of all electrical equipment must be ensured. - Supply through ELCB should be provided. - Double earthing should be followed. - Electrical cable should be neatly traced along the platform and handrail. Avoid placing them on the platform or routing in haphazard way. 3 pin plug should be used for power tapping. - DBs must be protected from rains. - Avoid number of intermediate cable joints. One joint per 25 meter is allowed with necessary insulated taping. - Appropriate PPE should be used. - Electrode holder shall be of good quality with proper insulation. The welder should never be allowed to weld when he is wet. - Install power generators of suitable capacity. - Provide emergency light / torches in the job site. - Provide emergency ladder for elevated work spot.



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16. WELDING & GAS CUTTING - Contd.

ACTION BY : Concerned Site Engineer / Supervisor

Sl.No.	HAZARDS / RISK	PREVENTIVE MEASURE
		Incase of confined area, forced ventilation shall be provided.
3	Exposure to spark hot metal and fumes	- The welder shall use apron and Helmet with weld screen. - Provide adequate ventilation in the working area.
4	Continuous working / Heat Stress	- Provide adequate ventilation. - Continuous working should be avoided. Adequate interval should be provided. - Incase of confined area, forced ventilation shall be provided.
5		

17. Grinding

ACTION BY : Concerned Site Engineer / Supervisor

Sl.No.	HAZARDS / RISK	PREVENTIVE MEASURE
1	Contact with grinding wheel / electric shock	- Wheel guard should be placed in proper position. - Machine should be earthed properly. - Frequent checking of power cord and use of plugs & sockets. - Proper use of PPEs such as grinders goggles, face shields, safety shoes, hand gloves etc. - Wheel should be mounted properly on the suitable grinding machine. - Grinding machine RPM and wheel RPM should match. - Use of safety belt during grinding at height more than 2 m.
2	Damage of wheel	Check the expiry date.
3	Cable / cord	- Double insulated power cable should be used in grinding machine. - Joints in cable should be avoided or protected properly.



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18. FIRE PREVENTION

ACTION BY : Concerned Site Engineer / Supervisor

Sl.No.	Causes of fire	PREVENTIVE MEASURE
1	Malicious ignition, careless gas cutting, welding, smoking, throwing of lighting match sticks, uncontrolled rubbish burning Incorrect storage and careless use of flammable liquids and compressed gases.	• Portable extinguishers containing Foam, DCP or BCF should be used on fire involving flammable liquids. Such fire extinguishers shall be conspicuously located. • Nobody shall be allowed to misuse or horseplay with this emergency equipment. • Demonstration on the usage of fire extinguishers shall be arranged. • Employees shall be instructed to report all fires immediately and notify their supervisor about the discharge of the fire extinguisher and its need of servicing. • The extinguisher should be readily available for use and not more than 15 m away from the area of use. • Employees, especially those involved in actually using these liquid must be adequately trained in the proper use of fire extinguishers. These employees in case of emergency and for other measures can use extinguisher in the event of fire. • Fencing of loading area like flammable liquid stores, paint oil storage and material stores (especially timber stacks) should have prominent displaying of “ NO SMOKING”.

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GUIDELINES FOR RESIDENT MANAGERS ON CONTRACT LABOUR, SAFETY & ACCIDENT REPORTING SYSTEM

CONTRACT LABOUR

- 1) Form V under Contract Labour (Regulation and Abolition Act) may be arranged from the customer, who is the principal employer, in the name of sub-contractor directly and ensure that the sub-contractor shall obtain licence under Contract Labour (Regulation and Abolition Act) 1970.
- 2) Ensure PF coverage in respect of all the contract labour deployed by our sub-contractors.
- 3) Ensure ESI coverage, wherever applicable, in respect of all the contract labour deployed by our sub-contractors.
- 4) Ensure gate pass issued by the customer to all the contract labour deployed by our sub-contractors.
- 5) Ensure Insurance coverage in lieu of Workmen's Compensation in respect of all the contract labour deployed by our sub-contractors.
- 6) Ensure payment of minimum wages, bonus, gratuity and other statutory payments to the contract labour
- 7) Please keep the labour law books containing the labour legislations applicable to each site. For example Factories Act Rules of the state where in the site situated, etc.

SAFETY

- 8) Ensure compliance of all safety measures/aspects by sub-contractors.
- 9) Ensure usage of PPEs as per the safety norms for each work / site by BHEL employees and persons engaged by the sub-contractors.
- 10) Ensure compliance of safety aspects envisaged in HSE Management System Manual.

ACCIDENT REPORTING SYSTEM

- 11) In case of major accidents resulting in serious bodily injury or death, report the same to Business Manager, Head(HR), etc. at HQ immediately.



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- 12) If the accident happened to any contract labour, please obtain a letter from the contractor regarding the accident and forward the same to the customer after obtaining concurrence from HQ.
- 13) In case of Fatal Accident to contract labour, local Police shall be informed by the contractor under intimation to you. A copy of the FIR may be forwarded to HQ.
- 14) In case of Fatal Accident to BHEL employee, local Police shall be informed by the Resident Manager under intimation to HQ.
- 15) Obtain the concurrence and approval of Business Manager & Head(HR) before signing any Accident Notice Forms under the Factories Act or Form EE under Workmen's Compensation Act, etc. or any other documents related to the accident.
- 16) In case of Fatal Accident to contract labour, ensure contractor shall arrange for postmortem and other formalities and hand over the body to the relatives.
- 17) In case of major accidents resulting in serious bodily injury or death to contract labour, Resident Manager shall forward the prescribed Form (Notice of Accidents or Dangerous Occurrences Resulting in Death or Bodily Injury under the Factories Act Rules of the state in which site is situated) filled and submitted by the sub-contractor to the Customer for onward transmission to the Assistant Labour Commissioner and other concerned Authorities within the prescribed time limit. For example Form 22 under Chatisgarh Factories Act Rules is applicable to Korba East site and Form 18 under Punjab Factories Act Rules is applicable to Lehramohabat site.
- 18) In case of major accidents resulting in serious bodily injury or death to BHEL employee, Resident Manager shall fill and submit the prescribed Form (Notice of Accidents or Dangerous Occurrences Resulting in Death or Bodily Injury under the Factories Act Rules of the state in which site is situated) to the Customer for onward transmission to the Assistant Labour Commissioner and other concerned Authorities within the prescribed time limit. For example Form 22 under Chatisgarh Factories Act Rules is applicable to Korba East site and Form 18 under Punjab Factories Act Rules is applicable to Lehramohabat site.
- 19) Contact Resident Manager / HR executive of Power Sector Site at the same location, if available, and take their assistance, in case if they had already handled a similar accident case at the same location.
- 20) Ensure providing of details like age (date of birth), wages of the person met with an accident and injured or expired to the concerned authorities.

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- 21) Ensure depositing of Workmen's Compensation amount decided by the authority under the Workmen's Compensation Act with the Commissioner of Workmen's Compensation by the contractor or their Insurance Company.
- 22) Inform HQ regarding the payment of Workmen's Compensation through the authorities to the dependents of the person expired.
- 23) Ensure payment of other statutory payments also, if any.

HSE ACCIDENT / INCIDENT REPORTING

- 24) Strictly comply with section 17.0 of HSE Management System Manual in respect of Accident / Incident reporting system
- 25) Submit the Accident / Incident Report format to HQ immediately after occurrence of accident.
- 26) Submit the Accident / Incident Investigation Report format to HQ after completion of the investigation



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LIST OF RELEVANT LEGISLATIONS APPLICABLE TO VARIOUS SITES

1. Contract Labour (Regulation and Abolition) Act, 1970
2. Factories Act, 1948 with relevant state rules
3. The Buildings And Other Construction Workers (Regulation Of Employment And Conditions Of Service) Act, 1996
4. The Inter-state Migrant Workmen (Regulation Of Employment And Conditions of Service) Act, 1979
5. The Child Labour (Prohibition and Regulation) Act, 1986
6. Minimum Wages Act, 1948 with relevant state amendments
7. Payments of Wages Act, 1936
8. Payment of Bonus Act, 1965
9. Payment of Gratuity Act, 1972
10. Employees' State Insurance Act, 1948
11. The Employees' Provident Funds And Miscellaneous Provisions Act, 1952
12. Fatal Accidents Act, 1855
13. The Personal Injuries (Compensation Insurance) Act, 1963
14. Workmen's Compensation Act, 1923
15. The Industrial Disputes Act, 1947
16. The Electricity Act, 2003
17. The Indian Electricity Act, 1910
18. The Indian Electricity Rules 1956
19. Environmental Standards for TPP
20. The Indian Boilers Act, 1923
21. Tariff Advisory Committee - Insurance
22. Hazardous goods TAC
23. The Motor vehicle Act 1988
24. The national Environment Tribunal Act 1995
25. The Environment (Protection) Act, 1986
26. The Gas Cylinder Rules 2004

All the above legislations are made available in ISG web under HSE (<http://isgweb/hse.html>) Business Managers / Project Managers / Resident Managers are requested to go through the above legislations and ensure strict compliance of the relevant legislations and its specific clauses applicable to their respective sites. Resident Managers are also requested to enquire with the customer regarding applicability of any local legislation.



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IS:HSE:AIR:001

ACCIDENT (PERSONAL INJURY / PROPERTY DAMAGE) REPORT

1.	NAME OF SITE:				
2.	SCOPE OF WORK:				
3.	ACTIVITY OF AREA:				
4.	NAME OF CONTRACTOR:				
5.	NAME & DESIGNATION OF BHEL ACTIVITY INCHARGE:				
6.	DATE & TIME OF ACCIDENT:				
7.	DATE RESUMED:				
8.	NO. OF WORKING DAYS LOST BY VICTIM (if duty not resumed give estimated figure):				
9.	NO. OF MAN HOURS LOST BY OTHERS:				
10.	PERSONAL DETAILS OF INJURED AND/OR DETAILS OF MATERIALS / EQUIPMENT / PROPERTY DAMAGED:				
NAME:			NAME OF MATERIAL/ EQUIPMENT/ PROPERTY:		
PERIOD OF EMPLOYMENT:					
AGE:		SEX:	MARRIED / SINGLE:	ESTIMATED COST	ACTUAL COST
OCCUPATION:			PART OF BODY INJURED		NATURE OF DAMAGE
NATURE OF INJURY					
11.	AGENCY (OBJECT / EQUIP / SUBSTANCE) MOST RESPONSIBLE FOR CAUSING ACCIDENT / INJURY / DAMAGE:				



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ACCIDENT (PERSONAL INJURY / PROPERTY DAMAGE) REPORT

12.	PERSON (NAME & DESIGNATION) WITH MOST CONTROL OVER AGENCY (OBJECT / EQUIP/ SUBSTANCE) CAUSING ACCIDENT / INJURY / DAMAGE:	
13.	DESCRIBE CLEARLY HOW THE ACCIDENT OCCURRED (IF SPACE INSUFFICIENT USE SEPARATE SHEET & ATTACH):	
ANALYSIS:		
14.	WHAT ACTS AND/OR CONDITIONS CONTRIBUTED MOST DIRECTLY TO THIS ACCIDENT?	
15.	WHAT ARE THE BASIC REASONS FOR THE EXISTENCE OF THESE ACTS AND / OR CONDITIONS?	
16.	WHAT CORRECTIVE ACTIONS HAVE BEEN TAKEN TO PREVENT ACCIDENT RECURRENCE?	
DATE :		SIGNATURE OF CONCERNED ENGINEER:
17.	COMMENTS OF SITE IN-CHARGE OF BHEL:	
DATE :		SIGNATURE OF SITE INCHARGE

Note:

- 1) The Report shall be prepared by the Concerned engineer and to be submitted to Head quarters through Resident Manager.

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These Conditions shall be read in conjunction with General Condition of Contract (GCC Rev 01) enclosed along with the tender enquiry. In case of any conflict or inconsistency, the requirement of SCC shall prevail over the GCC.

Customer/ Owner's Information:		
1.	Name of the Customer/ Owner and address	MEJA URJA NIGAM PRIVATE LIMITED FIFTH FLOOR SANGAM PALACE CIVIL LINES, ALLAHABAD-211001, UTTAR PRADESH
2.	Customer/Owner Order Ref No.	First Contract : MUNPL/C&M/Contracts/12-13-FC-NOA-0009 Dtd. 30.04.2012 Second Contract : MUNPL/C&M/Contracts/12-13-SC-NOA-0010 Dtd. 30.04.2012
3.	Customer/Owner's (MUNPL) TIN No.	09712706769
Project Information:		
1.	Project Name	2 X 660 MW Meja Thermal Power Project
2.	Site Location	Meja, Dist: Allahabad, PO: Kohdhar
3.	Item Description	Cable Trays & Accessories Lot-2
Terms & Conditions:		
1.	Type of Contract	Supply
2.	Consignee Address	RESIDENT MANAGER BHEL-ISG SITE OFFICE MEJA THERMAL POWER PROJECT P.O. KOHDAR TEHSIL : MEJA DISTRICT –ALLAHABAD Uttar Pradesh PIN- 212301 Notes : 1) Consignee address in LR should be strictly as per above for the <u>self-manufactured items of the vendor</u> . However, the material shall be consigned to the site address of the vendor only for the <u>bought out items of the vendor</u> , which are directly dispatchable to site. 2) Vendor to note that to effect "Sale in Transit", BHEL shall issue "Delivery Note" to the Transporter for transferring the ownership from BHEL to the customer (MUNPL). In the case of directly dispatchable bought out items of the vendor, the "Delivery Note" shall also be issued to the transporter by the vendor for transferring ownership from vendor to BHEL. 1) Delivery Note(s) shall be carried by the transporter along with other dispatch documents and shall be submitted along with the invoice for payment purpose.
3.	Buyer and Paying	A) For Inter-state sales (where CST is applicable): BHEL-ISG, Bangalore

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	Authority	B) For Intra-state sales (where VAT is applicable): Paying Authority shall be same as referred above. However, Buyer will be BHEL-PSNR, Noida. Detail requirements are enclosed as Annexure-I which are to be followed strictly.
4.	BHEL-ISG TIN	29630078284
5.	BHEL-ISG CST No.	70160429 dt. 19.09.02
6.	Mode of Dispatch	By Rail/Road/Sea. Note : It is Vendor's responsibility to ensure availability of trucks well in advance for dispatch of material to meet contractual delivery requirement
7.	Road Permit Requirement	Required. To be issued by customer, vendor TIN to be mentioned.
8.	Transit Insurance	In BHEL Scope. A) Policy numbers - 500300/44/12/04/40000024 - SCE 500300/21/12/02/00000094 –MARINE PERIOD OF INURANCE 15.01.2013 -14.11.2016 B) Contact details :- Rajat Khanna UIIC-LCB Delhi 8745002426 (Mobile) E-mail: rajatkhaana@uiic.co.in Prior Dispatch intimation shall be issued to Insurance agency about the value of consignment, dispatch details, along with one set of documents consisting of LR / RR copy, Packing List/ Challan indicating the items dispatched (with their weights). A copy of above should be sent to the following : a) BHEL. Site office (Address same as Consignee address) b) D.S Pradeep Kumar Sarma Senior Engineer (Commercial) BHEL ISG, Prof CNR Ro Circle, IISc Post, Malleswaram, Bangalore-560012 Email ID- dsp@bhelisg.com
9.	Unloading at Site	In the scope of BHEL .
10.	Storage at Site	In the scope of BHEL .
11.	Movement of Material Within Site	In the scope of BHEL .
12.	Delivery Schedule	Completion of supply: Within Ten (10) weeks from date of drawing approval, QAP approval and/or manufacturing clearance. NOTE: This is subjected to submission of drawings/documents by vendor within 2 weeks of LOI and vendor to re-submit documents within 10 working days taking care of all comments. In case there are delays of submission of documents beyond 2 weeks of order or 10 working

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		days of comments, that much days of delay would be reduced from delivery period.
13.	Guarantee period	Twenty four (24) months from the date last dispatch or twelve (12) months from the date of commissioning whichever is earlier.
14.	Price basis	Ex-works inclusive of packing & forwarding charges, subjected to PVC as per Annexure-II. Taxes, duties and freight shall be payable in line with GCC.
15.	Inspection Agency	Inspection of packages shall be carried out by agency as per below Inspection category of packages: 1) Cat-I: Inspection shall be done jointly or separately by MUNPL and BHEL. 2) Cat II: Inspection shall be done by BHEL only. 3) Cat-III: Certificate of Compliance shall be furnished by Vendor. Please note, for Cat I & II items BHEL reserve the right to carry inspection by themselves or through nominated third party. For Inspecting Agency for various items, vendor may refer to Quality Plan.
16.	Inspection	a) At manufacturer's works, prior to dispatch by BHEL / Customer / Consultant. Inspection call with internal TC's to be given 15 working days in advance. Inspection call should be furnished in the enclosed format only. b) Penalty for items not ready after inspection call / failure during inspection: The expenses incurred by Customer / BHEL for travel, stay etc. shall be recovered from the vendor's bills. c) Inspection calls shall be addressed to BHEL-ISG Purchase Department irrespective of inspection categories. d) No item / equipments shall be dispatched without obtaining Material Dispatch clearance certificate from from BHEL-ISG Material Management Department irrespective of inspection categories.
17.	Payment terms	For Supply : As per clause 9.1 of general commercial terms & conditions of GCC Rev-01 Collection of Material Receipt Certificate from Site/ Owner and its submission for claiming the payment shall be the responsibility of the Seller/Contractor. (The documents to be submitted for claiming supply payments shall be as per clause no-9.7.2, 9.7.3 & 9.7.4 of GCC Rev 01).

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18.	Dispatch Documents Required (to be furnished by Vendor)	A) For Customer/Owner billing by ISG, the supplier shall provide the following documents to BHEL-ISG in 4 sets : For Supplies from within India: 1) Copy of Vendor Invoice (Original Invoice in case of VAT) 2) Copy of Packing List indicating Quantity/ Gross weight! Net weight and BHEL approved BBU item no. wherever applicable against each item dispatched. 3) Copy of Excise Duty Gate Pass 4) Original LR / RR 5) Receipted LR / delivery challan acknowledgement by MUNPL / BHEL site engineer B) For Vendor payments following documents are required in 4 sets: As per GCC (The documents to be submitted for claiming supply payments shall be as per clause no-9.7.2, 9.7.3 & 9.7.4 of GCC Rev 01). In addition to the above, vendor shall enclose delivery note(s). Additionally vendor may furnish mfg clearance/drg/docs approval date for the purpose of determining contractual delivery for expeditious processing of Invoices. It is the responsibility of the vendor to submit invoices along with documents required for effecting payment within the stipulated period mentioned in the applicable statute for this tender. Non-submission of invoices due to delay/reasons attributable to vendor resulting in / leading to loss of tax credit for BHEL will be into vendor's account.
19.	Dispatch Markings	Each package/Drum delivered under the Contract shall be marked by Supplier as per details listed below and such marking must be distinct and in English language. 1) Name and address of the consignee (as given in sl. no 10) 2) Dispatched by: (Vendor name) : A/c BHEL ISG, Bangalore 3} LR No 3) Package No / Total Package No eg: 1 of N, 2 of N; where N=Total no of packages in a particular consignment. 4) Type of Supply: "Main equipment supply" "Mandatory Spares" "Commissioning Spares" as the case may be. Besides above necessary, packing shall bear a special marking "TOP", "BOTTOM", "DO NOT TURN OVER", "KEEP DRY", "HANDLE WITH CARE", etc.
20.	Submission of Performance Bank Guarantee (PBG)	PBG, in line with clause no. 11 of general commercial terms & conditions of GCC, rev-01, is to be submitted within 10 days from the date of Letter of Intent (LOI). (Refer Annexure-III for PBG format) Clause no. 11.4 of GCC, rev-01 shall be read as "Validity of the Bank Guarantee shall be for the entire Guarantee period + 3 months claim period. Initially, it should be at least 27 months + 3 months claim period, later extended to cover the entire guarantee period, two months before its

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		expiry”. Note: The Bank Guarantee to be provided in the hard and not in the SFMS format”. Our bank detail is as follows: Name of Site/division: BHEL ISG Name of Bank: ICICI BANK LIMITED Branch Address: ICICI BANK TOWER, # 1, COMMISSARIAT ROAD, BANGALORE – 560025 Phone No. of the Bank: 022-28308110 Branch Code: 0002 Branch IFSC Code: ICIC00000002 Account No: 000205003783 Nature of account: COLL A/C
21.	Taxes & Duties	a) All Bidders to note that this is a Mega ICB (International Competitive Bidding) Project. Accordingly the benefits applicable to Mega project would be granted for this project (Project with deemed export benefits). In this regard applicable documents such as Project Authority Certificate (PAC) will be issued by MUNPL (Customer). b) Equipment to be cleared through Customs on MERIT. Customs Duty to be included in Price. No concession/exemption is available for Customs Duty. c) All bidders to note being a Mega Project, Excise Duty shall not be included in their prices to BHEL as per the nature of the project. BHEL shall issue PAC to main vendor for their self manufactured item only. Concessional CST presently 2 % against Form 'C' & E1/E2 is to be considered in their prices. Concessional CST/ VAT shall be considered for evaluation of offers to arrive at the L1 bidder. The benefit of Nil Excise duty and concessional CST must be passed on to BHEL in their offer. VAT on your intra-state dispatch shall be paid subject to conditions specified in Annexure-I. PAC shall be provided to the vendor as per their request in Annexure-II (PAC requisition format). Entry tax: If any, shall be payable by ultimate customer (MUNPL) directly to sales tax authority. Hence the same should not be considered in the offer.
22.	Submission of E1/E2 forms	Submission of E1/E2 forms shall be ensured by Vendor within the time specified in sales tax act.
23.	Drawing submission and approval	Drawing submission as per L2 network (to be furnished by the vendor and approved by BHEL). Obtaining drawing approval from the

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		customer/consultant is the responsibility of vendor. However, BHEL shall assist the vendor in getting the approvals.
24.	Final Drawings / Documents submission	As per technical enquiry specifications, In addition to the no. of copies indicated and desired by NTPC, bidder to ensure submission of additional 4 sets of all engineering drg./doc to BHEL and for all such subsequent revisions in hard form along with a soft copy sent through email addressed to Project Manager and concerned project team.
25.	Arbitration	All questions and disputes/difference relating to the meaning of the specifications, design, drawings and instructions and or interpretation of the contract or its clauses and as to the quality of workmanship or materials used on the work or as to any other question, claim, right, matter or thing whatsoever in any way arising out of or relating to the contract, designs, drawing, specifications, estimates, instructions, orders or these conditions or otherwise concerning the works or the execution or failure to execute the same whether arising during the progress of the work or after the completion or abandonment thereof shall be referred to the sole arbitration appointed by the Chairman & Managing Director/Executive Director (In charge of the Unit) / General Manager (In charge of the Unit) / concerned Additional General Manager of the Unit of BHEL. The cases referred to arbitration shall be other than those for which the decision of the Dy. General Manager / Sr. Manager /Project Manager/Manager/Sr. Engineer/Engineer, is expressed in the contract to be final and conclusive. The arbitrator to whom the matter is originally referred being unable to act for any reason, Chairman & Managing Director/Executive Director (In charge of the Unit) / General Manager (In charge of the Unit) / concerned Additional General Manager of the Unit of BHEL, shall appoint another person to act as sole arbitrator and such person shall be entitled to proceed with the reference from the stage at which it was left by his predecessor. Subject as aforesaid the provisions of the Arbitration and Conciliation Act, 1996 or any statutory modification or re-enactment thereof and the rules made there under and for the time being in force shall apply to the arbitration proceedings. It is a term of the contract that the party invoking arbitration shall specify the dispute or disputes including specifying the quantum of financial claim, if any, to be referred to arbitration under this clause together with the amount or amounts claimed in respect of each such dispute. The arbitrator (s) shall complete the entire arbitration and publish an award within a period of twelve months from the date the Tribunal enters upon the reference. The parties to this arbitration agreement may before or at the time of

 	INDUSTRIAL SYSTEMS GROUP (PROJECT PURCHASE/WORKS-1)	SPECIAL CONDITIONS OF CONTRACT (SCC) Revision No. 00 Enquiry No : 77/16/6287/SK Dtd. 04.01.2017	2X660 MW Meja Thermal Power Project Cable Trays & Accessories Lot-2
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		invoking the Arbitration clause, may indicate in writing for FAST TRACK PROCEDURE wherein the Arbitrator shall pass an award within six months from the date the Tribunal enters upon the reference and to that effect, the Tribunal may dispense with any technical formalities and conduct the proceedings without oral hearing, subject to acceptance of such Fast Track procedure by other party. The work under the Contract shall continue during the arbitration proceeding and no payment due to the Contractor shall be withheld on account of such proceedings. The Arbitrator shall be deemed to have entered on the reference on the date one party issues notice to other party invoking arbitration clause under this. The Venue of arbitration shall be Bangalore and the language will be English only. The award of the arbitrator shall be final, conclusive and binding all parties to this contract. “
26.	Ethics In Business Dealings	The offers of the bidders who are under suspension as also the offers of the bidder, who engage the services of the banned firms, shall be rejected. The list of banned firms is available on BHEL website www.bhel.com Commitment by Bidder/Supplier/Contractor: 1. The bidder/supplier/contractor commit to take all measures to prevent corruption and will not directly or indirectly influence any decision or benefit which he is not legally entitled to nor will act or omit in any manner which tantamount to an offence punishable under any provision of the Indian Penal Code, 1860 or any other law in force in India. 2. The bidder/supplier/contractor 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 and shall adhere to relevant guidelines issued from time to time by Govt. of India/ BHEL. 3. The bidder/supplier/contractor will perform/execute the contract as per the contract terms & conditions and will not default without any reasonable cause, which causes loss of business/money/reputation, to BHEL. In order to protect its commercial interests, BHEL may take action against suppliers/ contractors by way of suspension of business dealings with them, who either fail to perform or are in default without any reasonable cause, cause loss of business/ money/ reputation, indulge in malpractices, cheating, bribery, fraud or any other misconduct or formation of cartels so as to influence the bidding process or influence the price as per the guidelines for Suspension of Business Dealings with Suppliers / Contractors available at www.bhel.com under “supplier registration page”.

Annexure-I

Special conditions of Contract for 2 x 660MW Coal Handling Plant Package for Meja Thermal Power Project, Meja, Dist: Allahabad, UP.

In order to avail the benefit of input tax credit available to BHEL in case of VAT leviable on intra-state transaction between BHEL and vendor and to fulfill the compliances as per requirements of applicable state's VAT law, the following modality shall be applicable.

BHEL has identified a nodal agency in each state to take care of VAT compliances in the state in which project is located. For the subject project nodal agency shall be :

BHEL – PSNR
HRDI & PSNR Complex,
Plot No. 25, Sector 16-A,
Noida – 201 301
TIN no. 09365800914

Nodal agency is defined as buyer and BHEL-ISG shall be paying agency in such cases, where VAT is applicable.

Vendors original tax invoice of intra-state transactions is one of important documents for availing input Tax credit. In this regard the following may be noted by all vendors for strict compliance.

- As a general rule, a tax invoice must be original, must contain vendors TIN no. with full address invoice no. & date, product description with unit rate, quantity, value, VAT rate, VAT amount, gross value of bill, buyer i.e., BHEL's address with TIN No. (as given as above) special marking like "Original" and/or "valid for input credit" / "buyer can take credit against this" etc as per applicable state VAT law.
- Please note that BHEL's address and TIN to be mentioned in vendors tax invoice shall be principal place of business & applicable TIN No. of nodal agency of BHEL, as given above. In no case the vendors invoices shall be addressed to BHEL-ISG nor shall they contain our TIN. However for payment purposes, the invoice may mention BHEL-ISG as paying authority.
- As original tax invoice of vendors are to be furnished to nodal unit for assessment/VAT audit purposes. Extra copy of original invoice is required to be submitted by vendors for retaining with ISG bank payment voucher.
- Original tax invoice along with extra copy of original Tax invoice in line with respective state VAT law shall be essential document to be submitted by vendor for claiming payment.
- Vendor shall also furnish a certificate/statement/document as prescribed under applicable State VAT law. Please note that some of the states requires additional certificate/documents e.g. Haryana requires certificate in form C-4 in addition to original tax invoice.
- Please note that reimbursement payment of VAT shall be subject to furnishing of VAT compliant tax invoice and other certificate/document as per applicable State VAT law.
- Tax invoice must show VAT rate & VAT amount separately and in no case all inclusive prices is to be shown in the tax invoice since input credit is not admissible in case VAT is not indicated separately.
- In case vendor is unable to furnish VAT compliant tax invoice & other certificate/document, VAT shall not be reimbursed by BHEL.
- Where the supplies are made from within the same state where the project is located, the vendor has to provide VAT invoice for such supplies even if the price quoted is all inclusive.

ANNEXURE -II

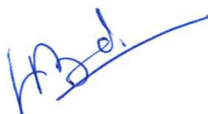
To Amendment No. 33 to Project Authority Certificate (PAC) Ref. No MUNPL/2012-13/PAC-6/121/200 dated 18.01.2013 *Coal Handling Plant Package for Meja Urja Nigam Private Limited(MUNPL)'s Meja Thermal Power Project (2X660MW)*

S.No	ITEM DESCRIPTION	QUANTITY	NAME OF THE SUB CONTRACTOR	BBU.NO
A	Particulars of supplies to be made by the sub-contractors include in this Amendment No. 33 to PAC No. MUNPL/2012-13/PAC-6/121/200 dated 18.01.2013			

BHEL- ISG, BANGALORE 	Coal Handling Plant for 2x660MW Meja Thermal Power Project. Technical Enquiry Specification for Cable trays & accessories Customer : Meja Urja Utpadan Nigam Pvt. Ltd. (A Joint Venture between NTPC Ltd. & Govt. of U.P./Uttar Pradesh Rajya Vidyut Utpadan Nigam Limited)	DOCUMENT NUMBER IS-1-11-2007/137/Cable trays & accessories LOT2
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Technical Enquiry specification for CABLE TRAYS & ACCESSORIES

SI. No.	DESCRIPTION	SHEET No.		
I	GENERAL SITE INFORMATION	02	of	12
II	APPLICABLE STANDARDS	03	of	12
III	SCOPE OF SUPPLY	04	of	12
IV	TECHNICAL SPECIFICATION	06	of	12
V	INSPECTION & TESTING	10	of	12
VI	TECHNICAL DOCUMENTATION	12	of	12

Prepared By	Checked by	Approved by
 Rakesh Sonwani	 Rakesh Sonwani	 L. Bindu

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	Customer : Meja Urja Utpadan Nigam Pvt. Ltd. (A Joint Venture between NTPC Ltd. & Govt. of U.P./Uttar Pradesh Rajya Vidyut Utpadan Nigam Limited)	IS-1-11-2007/137/Cable trays & accessories LOT 2

SECTION – I

1.00.00 GENERAL SITE INFORMATION

1.01.01 BACKGROUND

The present proposal is for setting up of a coal based Meja Thermal Power Project (2x660 MW) be owned by Meja Urja Utpadan Nigam Private Limited, which is a Joint venture between NTPC and Govt. of U.P/ Uttar Pradesh Rajya Vidyut Utpadan Nigam Limited (UPRVUNL).

1.01.02 LOCATION AND APPROACH

The proposed site for Meja TPP is to be located near Kohdar, Mai khurd and Patai Dandi villages of Meja Tehsil in Allahabad district of Uttar Pradesh, south west of Allahabad-Mirzapur highway with having coordinates as latitude 25°-09'-10" N and longitude 81°-56'-50" E respectively. The site is approachable from Meja-Khiri road on Allahabad-Mirzapur highway at a distance of about 45km from Allahabad. Nearest railway station is at Meja Road RS on Allahabad- Mughal Sarai section of North Central Railway at about 20 Kms from the project site.

1.01.03 Air Port

Meja project site is located about 45 kms from Allahabad. Nearest commercial airport is Allahabad at about 50 km. Lucknow airport is situated at a distance of about 250 km and Varanasi airport at about 120 km.

1.01.04 LAND

About 2500 acres of land (mostly barren, rocky and highly undulating terrain to the tune of 10 to 15 Metres and not prone to flood) has been identified for Main Plant.

1.01.05 Railway Siding

Employer intends to construct the Railway siding to project site from the nearest existing railway line. However, the same may not be available to the bidder for his use to transport equipment & material.

1.02.00 SITE CONDITIONS

Maximum ambient temperature	- 50 deg C
Design ambient temperature	- 50 deg C
Maximum relative humidity	- 95 %
Atmosphere	- Highly polluted with coal dust
Altitude above MSL	- Less than 1000 metres

Maximum ambient temperature and maximum relative humidity are not likely to occur simultaneously.

BHEL- ISG, BANGALORE 	Coal Handling Plant for 2x660MW Meja Thermal Power Project. Technical Enquiry Specification for Cable trays & accessories Customer : Meja Urja Utpadan Nigam Pvt. Ltd. (A Joint Venture between NTPC Ltd. & Govt. of U.P./Uttar Pradesh Rajya Vidyut Utpadan Nigam Limited)	DOCUMENT NUMBER IS-1-11-2007/137/Cable trays & accessories LOT 2
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1.03.00 POWER SUPPLY SYSTEM

1.03.01 11/3.3KV System and LT system.

System voltage	- 11/3.3 KV	+/- 6 %
System voltage	- 415/240 V	+/- 10 %
System frequency	- 50 Hz	+3/-5 %
Combined Variation	- +/- 10 %	
System fault level (11/3.3Kv)	- 40 KA RMS for 1 second	
System fault level (415V)	- 45 KA RMS for 1 second	
System earthing(415V)	- Solidly Grounded	

1.03.02 Ambient Conditions

Cable trays, fittings & accessories shall be suitable for operating satisfactorily in humid and dusty(coal & ash) atmosphere found in Thermal Power plants. Service conditions shall be as specified above.

1.03.03 AUXILLARY VOLTAGE SYSTEM

Control Voltage

AC	:	110V +/- 6 %
		50 Hz +3 /- 5 %
DC	:	240 V

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SECTION II: APPLICABLE STANDARDS

- 2.01.01 The tray shall conform to the latest Indian Electricity Rules as regards safety, earthing and other essential provision specified therein for installation and operation of electrical plant and equipment.
- 2.01.02 The tray and hardware shall be manufactured and tested in accordance with following Standards.
1. IS:4759 - 1984
 2. IS 1079 – Grade O
 3. IS 1852
 4. IS:1573 - 1985
 5. IS:2633 - 1986
 6. IS:8500 - 1992
 7. IS: 1367- 1983
 8. IS:4759 – 1984
 9. IS:2629 – 1985
 10. IS:2633 – 1986
 11. Indian Electricity Rules 1956

This above list is not exhaustive. Standards not listed above but are applicable also to be followed to meet requirement.

SECTION – III: SCOPE OF WORK

- 3.01.00: Description**
 This specification defines the requirement of design, manufacture, testing at work shop and supply of Hot dip Galvanized Ladder type with perforated rungs and its accessories. **Galvanization to be carried out at NTPC approved sources. Galvanizer's name shall be mentioned in QAP**
- 3.01.01 Cable trays shall be complete with matching fittings (like elbows), accessories (side coupler plates, etc). and hardware (bolts, nuts, washers etc.) as required.
- 3.01.02 Cable trays, fittings and accessories shall be fabricated out of rolled mild steel sheets free from flaws such as laminations, rolling marks, pitting etc. These (including hardware) shall be hot dip galvanized as per relevant IS.
- 3.01.03 Cable trays shall have standard width of 150 mm, 300 mm & 600 mm and standard lengths of 2.5 metre. Minimum thickness of mild steel sheets used for fabrication of cable trays and fittings shall be 2 mm. The thickness of side coupler plates shall be minimum 3 mm. Typical details of cable trays, fittings and accessories are shown in the enclosed drawings

BHEL- ISG, BANGALORE 	Coal Handling Plant for 2x660MW Meja Thermal Power Project. Technical Enquiry Specification for Cable trays & accessories	DOCUMENT NUMBER
	Customer : Meja Urja Utpadan Nigam Pvt. Ltd. (A Joint Venture between NTPC Ltd. & Govt. of U.P./Uttar Pradesh Rajya Vidyut Utpadan Nigam Limited)	IS-1-11-2007/137/Cable trays & accessories LOT 2

3.02.00 SCOPE OF SUPPLY:

SL.NO	DESCRIPTION	Quantity in nos.
3.0	A. Design, manufacture, Testing and supply of Hot dip Galvanized pre fabricated Ladder cable trays, perforated cable trays , fittings and accessories of width size 600 mm, 300 mm ,150mm of standard length 2500 mm along with coupler plates, earth continuity connections, nuts, bolts, washers etc. Typical drawing enclosed for reference. Details of items are as follows. a. Cable trays shall be fabricated from min 2mm thick hot rolled mild steel sheets. b. Coupler plate shall be 3mm thick c. Trays, bends and covers shall be hot dip galvanized after fabrication. d. All nuts and bolts shall be zinc plated.	
3.1	Ladder type cable tray (2.5m length), 600mm width, 100mm depth with 2 nos coupler plates per tray and necessary hardware such as nuts, bolts, washer etc. Each tray shall be supplied with 16 sets of hardware; each set consisting of one no. M8x25 long hex bolt, nut, 2 nos spring washer , 2 nos plain washers etc	4700 nos
3.2	Ladder type cable tray (2.5m length), 150mm width, 100mm depth with 2 nos coupler plates per tray and necessary hardware such as nuts, bolts, washer etc. Each tray shall be supplied with 16 sets of hardware; each set consisting of one no. M8x25 long hex bolt, nut, 2 nos. spring washer, 2 nos plain washers etc	800 nos
3.4	Perforated type cable tray (2.5m length), 600mm width, 100mm depth with 2 nos coupler plates per tray and necessary hardware such as nuts, bolts, washer etc. Each tray shall be supplied with 16 sets of hardware; each set consisting of one no. M8x25 long hex bolt, nut, 2 nos. spring washer, 2 nos plain washers etc	300 nos
3.5	Perforated type cable tray (2.5m length), 300mm width, 100mm depth with 2 nos coupler plates per tray and necessary hardware such as nuts, bolts, washer etc. Each tray shall be supplied with 16 sets of hardware; each set consisting of one no. M8x25 long hex bolt, nut, 2 nos. spring washer, 2 nos plain washers etc	2000 nos

Note :

- 1) Length of different size tray can vary as per requirement. Unit rate shall be indicated for all items. For variation in quantities, unit rate shall be applicable.
- 2) Typical drawing received from NTPC is enclosed for reference. Supplier shall follow these drawings in general.
- 3) **Galvanization to be carried out at NTPC approved sources. Galvanizer's name shall be mentioned in QAP.**

BHEL- ISG, BANGALORE 	Coal Handling Plant for 2x660MW Meja Thermal Power Project. Technical Enquiry Specification for Cable trays & accessories Customer : Meja Urja Utpadan Nigam Pvt. Ltd. (A Joint Venture between NTPC Ltd. & Govt. of U.P./Uttar Pradesh Rajya Vidyut Utpadan Nigam Limited)	DOCUMENT NUMBER IS-1-11-2007/137/Cable trays & accessories LOT 2
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SECTION – IV

DETAILED TECHNICAL SPECIFICATION

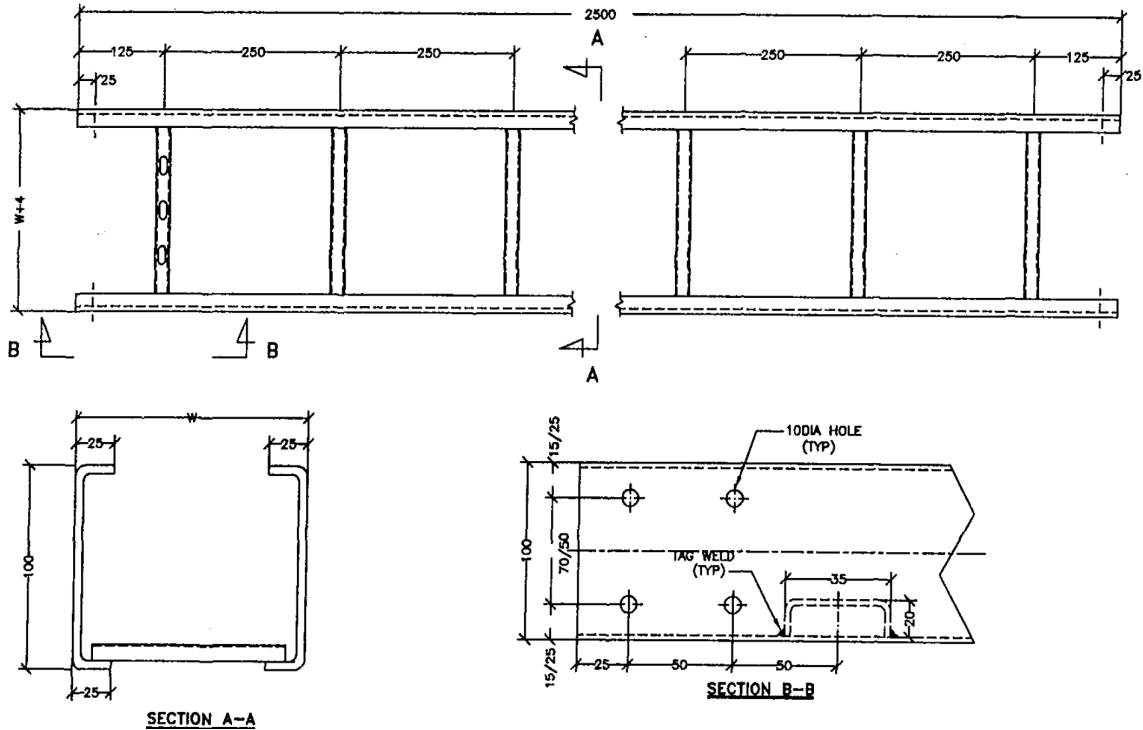
4.00.00

Pre – Fabricated Cable Trays.

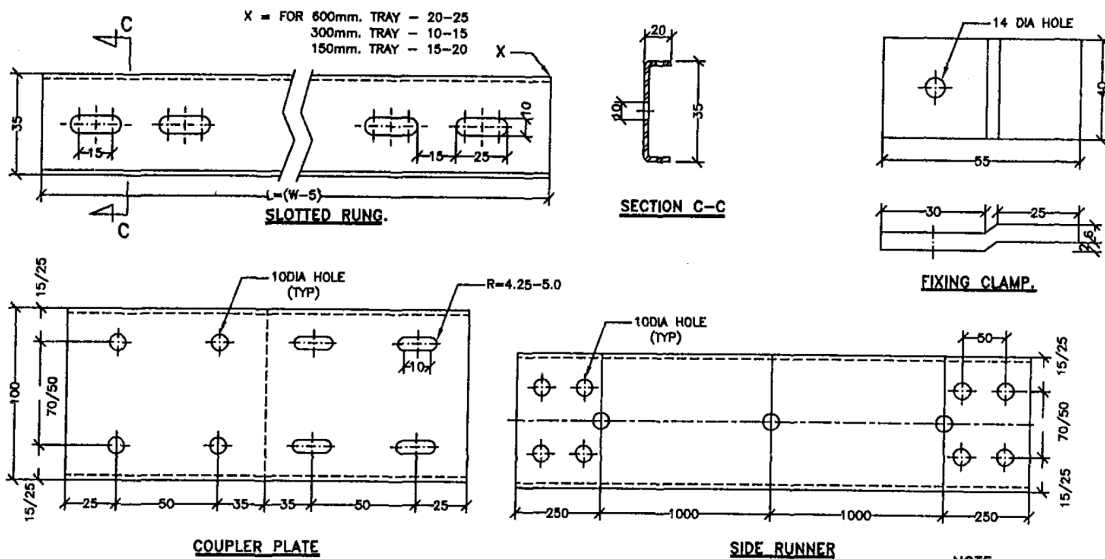
- a. Cable trays shall be pre-fabricated type, constructed from minimum 2 mm thick sheet steel for trays and hot-dip galvanized after fabrication.
- b. All hardware shall be hot-dip galvanized.
- c. Ladder type Cable trays shall be with 250mm rung spacing, 100mm depth and rung width not less than 35mm.
- d. All weld for cable tray supports shall have a minimum throat thickness of 6 mm.
- e. The cable trays, fittings & accessories including all bolts, nuts, screws, washers , etc. shall be hot dip galvanized after fabrication as per IS:2629, IS:2633 & IS:4759. Galvanising shall be uniform, clear, smooth & free from acid spots. Should the galvanizing of the samples be found defective, the entire batch of steel will have to be regalvanised at supplier's cost.
- f. The amount of zinc deposited over threaded portion of bolts, nuts, screws and washers shall be as per IS:1367. Customer reserves the right to measure the thickness of zinc deposit by elcometer or any other instrument & reject any component, which shows thickness of zinc at any location to be less than specified.
- g. The removal of extra zinc on threaded portion of components shall be carefully done to ensure that the threads shall have the required zinc coating on them as specified. However nuts and bolts of size lesser than M12 can be electro galvanized / electro plated.
- h. Cable trays shall be ladder/perforated type as specified complete with matching fittings, (like elbows, bends etc.) accessories (like side coupler plates, etc. and hardware (like bolts, nuts, washers, G.I. strap, hook etc.) as required.
- i. Cable trays, fittings and accessories shall be fabricated out of rolled mild steel sheets free from flaws such as laminations, rolling marks, pitting etc. These (including hardware) shall be hot dip galvanized as per relevant IS. Cable trays shall be ladder type for power/control cables and shall be perforated type for instrumentation cables.
- j. Cable trays shall have standard width of maximum 600 mm and standard length of 2.5 metre. Minimum thickness of mild steel sheets used for fabrication of cable trays and fittings shall be 2 mm. The thickness of side coupler plates shall be minimum 3 mm. Typical details of cable trays, fittings and accessories are shown in the enclosed drawings.

BHEL- ISG, BANGALORE 	Coal Handling Plant for 2x660MW Meja Thermal Power Project. Technical Enquiry Specification for Cable trays & accessories Customer : Meja Urja Utpadan Nigam Pvt. Ltd. (A Joint Venture between NTPC Ltd. & Govt. of U.P./Uttar Pradesh Rajya Vidyut Utpadan Nigam Limited)	DOCUMENT NUMBER IS-1-11-2007/137/Cable trays & accessories LOT 2
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Drawing no 1: Ladder type cable tray



Coupler plate:

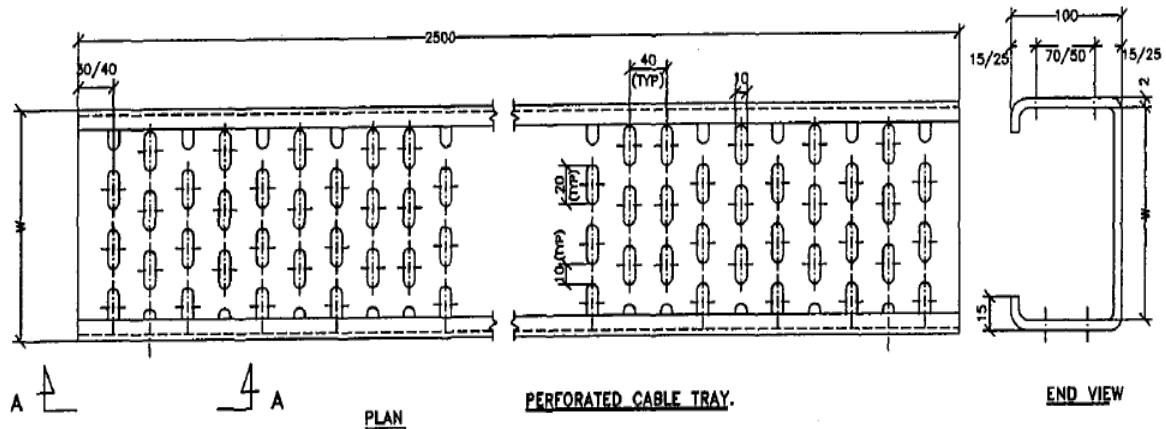


NOTE.

1. MATERIAL :- M.S. SHEET MIN. 2mm. THK.
2. FINISH :- HOT DIP GALVANISED
3. COUPLER PLATE- MIN. 3mm THK
M.S. HOT DIP GALVANISED.

BHEL- ISG, BANGALORE 	Coal Handling Plant for 2x660MW Meja Thermal Power Project. Technical Enquiry Specification for Cable trays & accessories Customer : Meja Urja Utpadan Nigam Pvt. Ltd. (A Joint Venture between NTPC Ltd. & Govt. of U.P./Uttar Pradesh Rajya Vidyut Utpadan Nigam Limited)	DOCUMENT NUMBER IS-1-11-2007/137/Cable trays & accessories LOT 2
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Drawing no 2: Perforated type cable tray

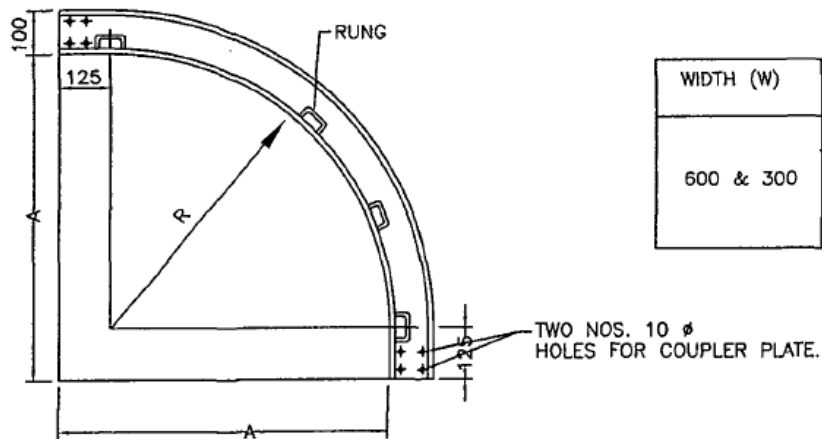


NOTE.

1. ALL DIMENSIONS ARE IN mm.
2. IN-SIDE W (WIDTH) :- 150, 300 & 600mm
3. MATERIAL :- 2mm. M.S. SHEET Min.

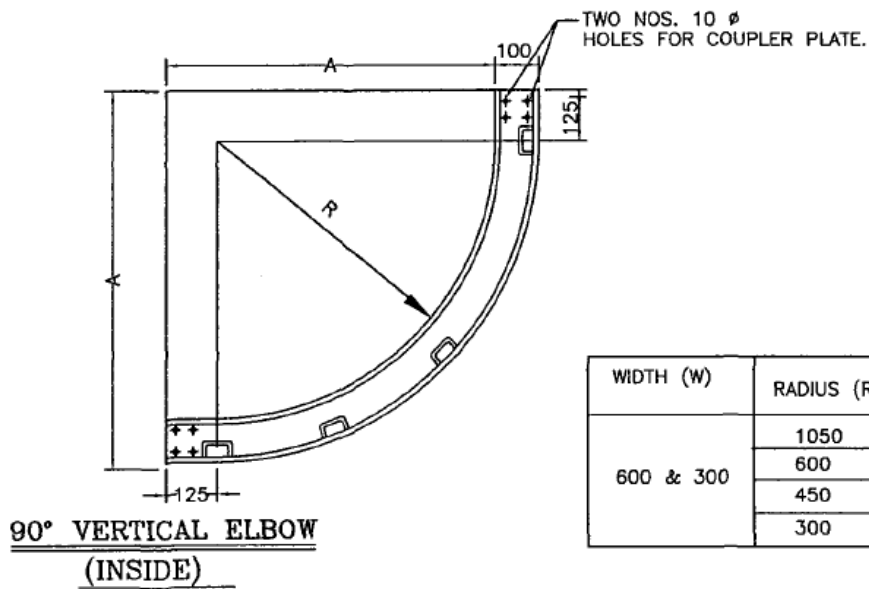
BHEL- ISG, BANGALORE 	Coal Handling Plant for 2x660MW Meja Thermal Power Project. Technical Enquiry Specification for Cable trays & accessories Customer : Meja Urja Utpadan Nigam Pvt. Ltd. (A Joint Venture between NTPC Ltd. & Govt. of U.P./Uttar Pradesh Rajya Vidyut Utpadan Nigam Limited)	DOCUMENT NUMBER IS-1-11-2007/137/Cable trays & accessories LOT 2
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Drawing no 3: 90° vertical elbow (inside & outside)



WIDTH (W)	RADIUS (R)	A
600 & 300	1050	1175
	600	725
	450	575
	300	425

ELEVATION
90° VERTICAL ELBOW
(OUTSIDE)



WIDTH (W)	RADIUS (R)	A
600 & 300	1050	1175
	600	725
	450	575
	300	425

90° VERTICAL ELBOW
(INSIDE)

BHEL- ISG, BANGALORE 	Coal Handling Plant for 2x660MW Meja Thermal Power Project. Technical Enquiry Specification for Cable trays & accessories	DOCUMENT NUMBER
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SECTION - V INSPECTION & TESTING

- 5.00.00 The Cable Tray has to be tested at manufacturers work in presence of BHEL/ NTPC representative as per approved QAP. QAP for the Cable Tray will be submitted by vendor for approval by BHEL/NTPC . Typical QAP is enclosed for reference. This is an indicative list of tests /checks. The manufacturer is to furnish a detailed Quality Plan indicating the practice and procedure along with relevant supporting documents. Deflection Test on cable trays and Proof Load test on cable trays support system will be as per details given in the NTPC technical specification & approved MQP. The above acceptance tests shall be done only on one sample from each size of offered lot.
Make of all items will be subject to NTPC approval.
- 5.01.01 **Routine Test for Tray** : Test shall be conducted AS PER relevant IS and approved QAP in line with specification .
- **BOM**
 - **Dimension & weight**
 - **Welding check**
 - **Galvanizing: Finish, Thickness**
 - **finish**
- Deflection Test** : One piece each of 2.5m length of cable tray of 300mm & above shall be taken as sample from each offered lot. It shall be supported at both end & loaded with uniform load of 76 kg/meter along the length of cable tray. The maximum deflection at the mid-span of each size shall not exceed 7mm.
- 5.01.02 **TEST CERTIFICATE:** Following Test Certificates shall be submitted during inspection for review
- Welding Test certificates for tray .
 - Material TC
 - Galvanizing

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QUALITY ASSURANCE & INSPECTION MODULE NO. SQE-16

CABLING, EARTHING, LIGHTNING PROTECTION

ATTRIBUTES / CHARACTERISTICS														
ITEMS/COMPONENTS / SUB SYSTEMS	Dimension	Paint shade, paint thickness, adhesion	Pre-treatment of sheet	IP protection	Proof load*	Surface finish	Deflection test*	HV & IR	Galvanise Test (If Applicable)	Functional	Bought out items/Bill of material	Routine tests as per relevant standard & specification	Acceptance tests as per relevant standard & specification	Constructional feature as per NTPC Specification
Wall Mounted-Lighting Panel (IS-513, IS:5, IS:2629, 2633, 6745)	Y	Y	Y	Y		Y		Y	Y	Y	Y	Y	Y	Y
Switch box/junction box/ Receptacles Panel (IS-513, IS:5, IS:2629, 2633, 6745)	Y	Y	Y	Y		Y		Y	Y	Y	Y	Y	Y	Y
Cable glands(BS-6121)	Y											Y		
Cable lug(IS-8309)	Y											Y		
Lighting wire(IS-694)	Y											Y		
Flexible conduits	Y											Y		Y
Conduits(Galvanise & Epoxy) IS-9537 & IS-2629,2633,6745	Y		Y								Y	Y		Y
RCC Hume Pipe (IS-458)												Y		
Cable termination & straight through joint (VDE-0278)	Y											Y		Y
Cable Trays, Flexible supports system & accessories IS-513, 2629,2633,6745	Y		Y		Y	Y	Y	Y	Y	Y		Y	Y	Y
Trefoil clamp	Y													Y
GI flats for earthing & lighting protection (IS 2062, 2629, 6745,2633)	Y		Y						Y			Y		Y
GI wire (IS-280)	Y											Y		
Fire Sealing System (BS – 476)												Y	Y	Y

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SECTION – VI DOCUMENTATION

The following documentation shall be submitted to BHEL at different stages of the Project. In preparing and submitting the documentation, the requirements given in subsequent clauses shall be strictly adhered to

SL. NO.	TYPE OF DOCUMENTS	NO. OF COPIES	STATUS	TIME SCHEDULE
1	GA/OGA drawings showing Plan, Elevation, End View, List of accessories, BOM Details Of Tray	2 + 2 nos. CD ROM	For Approval	Within 7 days of LOI/Order
2	Material & Galvanizing certificate for tray and accessories	2 + 2 nos. CD ROM	For Approval	Within 7 days of LOI/Order
3	QAP For tray.	2 + 2 nos. CD ROM	For Approval	Within 7 days of LOI/Order
4	Test certificates for inspection	2 + 2 nos. CD ROM	For Approval	Along with Inspection Call
5	Routine test certificate and inspection report for all components	10 + 4 nos. CD ROM	Final document	Along with Dispatch.
6	GA/OGA drawings showing Plan, Elevation, End View, List of accessories, BOM Details Of Tray	10 + 4 nos. CD ROM	Final document	Along with Dispatch.
7	Erection & Storage Manual	10 + 4 nos. CD ROM	Final document	Along with Dispatch.

The GA / OGA drawing shall contain the following data for preparation of Layout drawing;

- ◆ Dimensional drawing containing Elevation, section, mounting
- ◆ Weight of the Tray
- ◆ Standards
- ◆ BOM
- ◆ Title of the Drawings shall be as per the requirement of customer

Notes:

1. All drawings, documents and catalogues shall be available in soft copy.
2. Soft copy in CD-ROM and reproducible tracings of all drawings / documents shall be submitted along with final / as-built submission
3. For all technical tables, diagrams, calculations, results, drawings, test data and scales adopted in the design the standard international unit system (SI) as per International

**Coal Handling Plant for 2x660MW Meja Thermal Power Project****Enquiry No-77/16/6287/SK****UNPRICE FORMAT : CABLE TRAY & ACCESSORIES, LOT-2**

All prices - Rs									
SL. NO.	Description	Unit	Qty (A)	Unit Rate (B)	Total Ex-Works Price (C=A*B)	CST (D)	VAT (E)	Freight (F)	Total FOR Site Price (G=C+D+E+F)
1	600mm width Ladder type cable tray (2.5m length) & accessories	Nos	4700						
2	150mm width Ladder type cable tray (2.5m length) & accessories	Nos	800						
3	600mm width perforated type cable tray (2.5m length) & accessories	Nos	300						
4	300mm width perforated type cable tray (2.5m length) & accessories	Nos	2000						
Total (Rs)									

Note :

1. Price of each and every item is to be given separately. In case bidder mentions 'Not Applicable' against an item in the bid and later on the same spare is found to be applicable during detailed engineering, the vendor shall supply such spares free of cost.
2. In case the description / quantity for any item mentioned in schedule is at variance from what has been stated in the Technical Specifications and its subsequent amendments and clarifications, the latter shall prevail.