



General Note: **BHARAT HEAVY ELECTRICALS LIMITED**

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(A Government of India Undertaking)
HIGH PRESSURE BOILER PLANT
PURCHASE DEPARTMENT - FOSSIL BOILERS
THIRUCHIRAPALLI - 620014
TAMILNADU (INDIA)

PHONE : 2577359
GRAMS : BHARATELEC
FAX NO: 2520719
E-mail :
Web :

429-002/A

OFFICE COPY	Collective No.	Enquiry Date	Due Date For Quotation
	1701600366	30.03.2016	06.06.2016
Please quote Enquiry No, Date and due date in all correspondences. This is only a request for quotation and not an order			

Item	Description	Unit	Quantity	Delivery Quantity	Schedule Date
10	L171319759601002 HIGH TEMPERATURE CAMERA WITH STRAIGHT VIEWING LENS TUBE AND STAINLESS STEEL COVER AS PER SPECIFICATION CI:CCTV:1713 / REV.00.	NO	8.000	4.00	24.08.16
				4.00	24.02.17
20	L171319759601003 ACCESSORIES OF CAMERA SYSTEM LIKE PNEUMATIC RETRACT FOR CAMERA, AIR FILTER, REMOTE RETRACT UNIT ETC TO MAKE THE SYSTEM COMPLETELY OPERATIONAL AS PER SPECIFICATION CI:CCTV:1713 / REV.00.	SET	4.000	2.00	24.08.16
				2.00	24.02.17
30	R61171300001 "FURNACE FLAME VIEWING CAMERA IS REQUIRED SUITABLE FOR CLOSED#CIRCUIT TELEVISION SYSTEM.THE SAME FURNACE FLAME VIEWING#CAMERA SHALL BE SUITABLE HIGH TEMPERATURE APPLICATION." "	NO	1.000	1.00	24.08.16
40	R61171300002 PTZ unit	NO	2.000	2.00	24.08.16
50	R61171300003 Driver unit	NO	2.000	2.00	24.08.16
60	R61171300004 Receiver unit	NO	2.000	2.00	24.08.16
70	R61171300005 APPLICABLE LCD MONITOR IS REQUIRED SUITABLE FOR CCTV SYSTEM AS PER ORIGINAL DESIGN.	NO	1.000	1.00	24.08.16

The offers should reach us 30 minutes before the time of opening of tenders.
The offers will be opened at 14.30 hrs on the due date of tender in the presence of tenderers who have submitted their offer and who may like to be present for the tender opening.Late and delayed offers are liable to be rejected.

Yours faithfully,
For **BHARAT HEAVY ELECTRICALS LIMITED**

SYED SHAFAT HAMEED RASOOL
MANAGER PURCHASE
(FOSSIL BOILERS)
Material Purchase Dept
BHEL TIRUCHY 620014



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General Note:

1. This requirement is for OPGCL 3, 4 - 660MW (1713, 1714) projects main as well as OPGCL 3,4 - 660MW (1713,1714) Mandatory Spares requirement.

2. Site Address is as follows:

IB Valley TPS 2x660MW
OPGCL, IB Valley TPS Unit-3&4,
Banharpalli
Orissa State - 768234.
India

3. SUPPLY OF FURNACE AND FLAME VIEWING CAMERA AS PER SPECIFICATION
CI:CCTV:1713 REV00.

4. Vendor quality plan is applicable and will be subject to BHEL approval after placement of order.

5. Instruction for Indigenous Vendors:

a). Offer must be on three part basis and needs to be submitted on FOR/OPGCL 3, 4 - 660MW projects basis for Main item (Enq. Sl. No. 10 & 20) and FOR/BHEL Trichy stores basis for mandatory Spares item (Enq. Sl.Nos.30 to 70) inclusive of packing & forwarding.

b). Charges for freight & insurance (for Main & Spares Item) should be indicated clearly and separately in the offer compulsorily without fail. Part 1 consists of PQR, Part 2 is technical Bid and Part 3 is Price Bid. (Refer Annexure - C)

c). Indicate clearly all the taxes & duties applicable with exact Percentage.

6. Instruction for Foreign Vendors:

a). Offer must be on three part basis for OPGCL 3,4 - 660MW Main items (Enq. Sl. No. 10 & 20) and mandatory Spares item (Enq. Sl.Nos.30 to 70) and needs to be submitted on FOB/nearest gateway airport basis inclusive of packing & forwarding.

b) Materials are to be despatched to Manager/Matl.services, ROD/BHEL, 165, Thambu Chetty Street, Chennai-600001, Tamilnadu, India.

c). It is mandatory to indicate the import portion weight in Kgs for actual material weight and material weight along with packing in your offer. Part 1 consists of PQR, Part 2 is technical Bid and Part 3 is Price Bid. (Refer Annexure - C)

d). Indicate clearly all the applicable extra Charges such as FOB, P

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Yours faithfully,
For BHARAT HEAVY ELECTRICALS LIMITED


SYED SHAFAT HAMID RASOOL
MANAGER, PURCHASE
FOSSIL BOILERS
BHEL, Thiruchirapalli, 620014
Tamil Nadu, India



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&F, Inspection etc. with exact percentage.

7. Common points for all Vendors:

- a). Quote should confirm our specifications, enclosed commercial terms & conditions along with MSME clause, Loading Criteria (Annexure-B). Point wise confirmation are to be submitted along with your quote to enable BHEL to ensure technical suitability. Any deviation should be specified without fail clearly in the no deviation format and the failure to comply with the same may make your quotation liable for rejection.
- b). Vendor to submit their own quality plan for furnace flame viewing camera system (CCTV) along with the offer for BHEL and end customer review. VQP will be subject To BHEL/End Customer's approval.
- c). In addition optional prices for complete erection & Commissioning of CCTV system at site including necessary Manpower and Material at site shall be mentioned separately in the offer.
- d). Suitable Erection support materials to be supplied by vendor.
- e). The enquiry deviation form shall be submitted after filling up all the references and deviations if any duly signed and stamped.
- f). The BHEL standard enquiry terms and conditions shall be duly signed & stamped and sent along with the offer.
- g). Entire project (Enquiry SL NO: 10 to 70) requirement will be considered as a single package for evaluation purpose and L1 finalization. L1 finalization will be done based on total cost BHEL basis.
- h). Inspection shall be carried out by respective BHEL approved third party inspection agency for indigenous vendors and the customer itself as per applicability. Foreign vendors need to submit all the necessary test certificates to obtain BHEL clearance before dispatch.
- i) Applicable Testing and Certification charges if any shall be indicated clearly and separately in the quotation. Taxes/duties applicable on the Testing and certification charges should be clearly indicated in the quotation. If the same is found to be missing then it would be taken as inclusive in the quoted amount.
- j). Two sets of O & M Manual consisting of approved drawings in PDF format (soft copy) in CDs are to be submitted to the buyer along

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Yours faithfully,
For BHARAT HEAVY ELECTRICALS LIMITED


SYED GHAFAR AHMAD RASOOL
MANAGER / PURCHASE
(FOSSIL BOILERS) BOI
Materials & Services
BHEL, THIRUCHIRAPALLI 620014



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with dispatch documents.

Submission of O & M is one of the documents need to be sent along with dispatch documents to effect payment. You are requested to submit O & M manual in PDF format along with intimation of dispatches. No hard copy is warranted. Please note.

k). The delivery dates indicated above are tentative and the exact delivery date will be indicated in the purchase order.

l). We here by attaching the general terms, Commercial terms & Special Terms along with this enquiry (All Annexures). Please furnish your point wise confirmation to all annexures.

m). Supplier registration forms with all required credentials and confirmations/supporting documents for PQR shall be submitted along with the techno-commercial bid.

n). Offers not meeting PQR as well as BHEL specifications are liable for rejection.

o). In addition to technical and commercial conditions, vendors who are not registered vendor of BHEL Trichy, have to submit the filled in "supplier registration Forms" along with the technical bid. The new vendors need to download vendor registration forms from BHEL web site in www.bhel.com and submit all relevant data for formal registration. (Refer Annexure - C)

The vendors not registered with BHEL must ensure that they become permanent PMD vendors of BHEL after completing all supplier registration formalities before price bid opening, otherwise their offer will not be considered further for price bid opening and will be rejected.

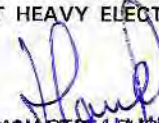
p). Important note for MSE clause:

All vendors are requested to note the Annexure X -Special clauses for Micro and Small Enterprises (MSE) suppliers.

If L1 vendor is an MSE vendor entire project package will be ordered on L1 vendor. If a Non MSE vendor is coming as L1, then L1 prices will be counteroffered on MSE vendor who is quoting price within the price band L1 + 15% and if they are agreeing purchase order will be awarded for full/complete supply of total tendered value to MSE. If more than one MSE vendors are available in the L1 + 15% price band then lowest of the MSE vendor will be selected for counteroffering. If lowest MSE vendor is not accepting it will be counteroffered to the next MSE vendor in the price band and so on. Finally if any of the MSE vendor in the price band is not accepting it will be ordered on L1 non MSE vendor. MSE suppliers

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Yours faithfully,
For BHARAT HEAVY ELECTRICALS LIMITED


SYED M. H. RASOOL
(FOSSIL BOILERS)
Materials Management BOI
BHEL, TIRUCHY 620014



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can avail the intended benefits only if they submit along with the offer, attested copies of documents as mentioned in the Annexure X. Since the complete enquiry requirement is being considered as a single package for tender evaluation purpose, therefore, MSE clause will not be applicable to those indigenous vendors who are quoting only for a part of the enquiry in partnership with a foreign vendor. MSE clause can be used only by an indigenous vendor who is quoting for the full enquiry requirement on its own. All the MSE related current and valid documents must be provided along with the offer without fail.

q). This tender has been published on BHEL & NIC website http://www.bhel.com/tender/tender_home.php & <http://tenders.gov.in> and also in leading national dailies (Indian Express, New Indian Express and Financial Express) and in addition in Indian Trade Journal (ITJ) with ref no N1T_xxxxx. All corrigendum will be published on BHEL & NIC websites only, vendors are requested to visit these websites regularly.

r). If there is any clarifications, you are requested to contact: Sri SYED SHAFAT HAMD RASOOL, Engineer/MM/BOI, BHEL, Trichy-620014. Ph.:+91 431 2577072; e-mail: sshrasool@bheltry.co.in

Enclosures:

- 1) SPECIFICATION: CI:CCTV:1713/REV00.
- 2) Annexure - B for indigenous vendor (Commercial terms and conditions & Loading Criteria) - 03 Pages.
- 3) Annexure - B for import vendor (Commercial terms and conditions & Loading Criteria) - 03 Pages.
- 4) Annexure - X for MSME clause - 01 Page.
- 5) Annexure - C for Special Terms & Condition (Three part details & SRF formalities) - 03 Pages.
- 6) No deviation form (Enquiry deviation) - 01 Page.
- 7) Packing Procedure: QA:CI:STD:PR:04/REV02.

"LD clause has to be confirmed without fail."

The bidder along with its associate / collaborators / sub-contractors / sub-vendors / consultants /service providers shall strictly adhere to BHEL fraud prevention policy displayed on BHEL website <http://www.bhel.com> and shall immediately bring to the notice of BHEL Management about any fraud or suspected fraud as soon as it comes to their notice.

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Yours faithfully,
For BHARAT HEAVY ELECTRICALS LIMITED

SYED SHAFAT HAMD RASOOL
MANAGER - PURCHASE
FOSSIL BOILERS
BHEL TRICHY-620014



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PR Links

Material.	PR.No	PR.Item.	Quantity	Acc. Assign	Customer Number
L171319759601002	114823263	00010	4.000	U6/1713-SY-576-1-97-596	U6/1713
L171319759601002	114823264	00010	4.000	U6/1714-SY-576-1-97-596	U6/1714
L171319759601003	114823263	00020	2.000	U6/1713-SY-576-1-97-596	U6/1713
L171319759601003	114823264	00020	2.000	U6/1714-SY-576-1-97-596	U6/1714
R61171300001	112952769	00010	1.000	0073009125/344001	U6-1713
R61171300002	112952770	00010	2.000	0073009125/345001	U6-1713
R61171300003	112964909	00010	2.000	0073009125/346001	U6-1713
R61171300004	112964910	00010	2.000	0073009125/346002	U6-1713
R61171300005	112964911	00010	1.000	0073009125/347001	U6-1713

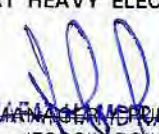
list of suppliers

RFQ-5900000079

Open Tender Dummy Code

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Yours faithfully,
For BHARAT HEAVY ELECTRICALS LIMITED


SYED SHAMSUL HAMEED
#FOSSIL BOILERS)
Material Management BOI
BHEL TIRUCHY 620014..

ANNEXURE-B (For Indigenous vendor)

ACCEPTANCE OF TECHNO - COMMERCIAL TERMS AND CONDITIONS BY THE BIDDERS

Description of the Equipment:		CCTV system & Its Mandatory Spares
BHEL Tender No. & Date		
SI No.	Terms and conditions	Vendor's confirmation
1	<p>Technical : Supply of CCTV system & Its Mandatory Spares as per the spec.:CI:CCTV:1713/REV 00"</p> <p>Vendor shall submit their own Quality Plan for BHEL approval</p>	
2	<p>Firm Price: The quoted / finalised rates shall be Firm till execution of the supplies. Offer with PVC clause will not be considered.</p>	
3	<p>FOR Basis: The quote shall be on respective FOR/OPGCL 660MW - 3, 4 (1713, 14) Site & BHEL/Trichy Stores basis as indicated in enquiry, inclusive of Packing and forwarding charges. Freight & Transit Insurance charges shall be vendor's scope and will be loaded as per clause 3 (a) & 3 (b).</p> <p>If vendor passing transit insurance under BHEL scope. offer will be loaded 0.082% of (basic material value + ED + forwarding & packing + freight charge).</p>	
3 (a)	<p>Freight charges: To be quoted as extra and not inclusive in the basic price (Mandatory to quote the same value in EPS)</p> <p>1) Main Item - FOR/ OPGCL -3, 4 Site 2) Spares Item - BHEL/Trichy Stores</p>	
3 (b)	<p>Insurance charges: To be quoted as extra and not inclusive in the basic price (Mandatory to quote)</p> <p>1) Main Item - FOR/ OPGCL -3, 4 Site 2) Spares Item - BHEL/Trichy Stores</p>	
4 (a)	<p>Payment terms: For Main Item - FOR/ OPGCL -3, 4 Site 90% direct payment after 45 days from the date of dispatch against site acknowledgement and against 10% PBG valid for the warranty period. Balance 10% payment will be made against successful commissioning of the system at project site.</p> <p>FOR Spares Item - BHEL/Trichy Stores 100% direct payment after 45 days from receipt and acceptance of material at BHEL/Trichy stores and against 10% PBG valid for the warranty period.</p> <p>The given BHEL standard payment term needs to be accepted. Not accepting the BHEL standard payment term will result in the offer being liable for rejection.</p>	
4 (b)	<p>Payment through bank is not preferred. If still demanded by vendor, BHEL prefers submission through bank with copy of LR and door delivery of Good to site /Stores with consignee copy attached. In this case, loading will be 3% on the offered value. In case of Direct to site, only 90% through bank will be considered.</p>	

5 (a)	<p>Liquidated damages: Delivery of the goods specified in the purchase order should be made within the time prescribed. Failure to dispatch the materials in the time as per the delivery quoted in our Purchase Order would make the supplier liable to an un-conditional LD at the rate of ½% of the total order value per week or part thereof subject to maximum of 10% of the total order value.</p> <p>For staggered delivery schedule, LD shall be 0.5% of the undelivered portion per week of the delay or part thereof, subject to a maximum of 10% of the total order value.</p>	
5 (b)	<p>Loading Criteria</p> <p>LD / Penalty: Any deviation of the above LD/Penalty clause, loading will be applied to the extent to which it is not agreed by the bidder(at offered value).</p>	
6 (a)	<p>Guarantee / Warranty Period Guarantee clause 18months from the date of supply or 12 months from the date of actual put in use, whichever is earlier.</p>	
6 (b)	<p>Loading Criteria</p> <p>Guarantee / Warranty Period: No Deviation is permitted. If still vendor offered any deviation on the Guarantee / warranty period it may leads to rejection of offer.</p>	
7 (a)	<p>Performance Bank guarantee: 10% of material value as PBG shall be offered.</p>	
7 (b)	<p>Loading Criteria Performance Bank guarantee: No Deviation is permitted and the deviated offers are liable for rejection.</p>	
8	<p>Taxes & Duties: All Taxes, Duties, Service Taxes etc. payable as extra to the quoted price should be specifically stated in offers along with CST & TIN No / Tariff No. etc., failing which the purchaser will not be liable for payment of such Taxes and Duties.</p>	
8 (a)	<p>ED with cess Indicate the applicable %</p>	
8 (b)	<p>CST /VAT Indicate the applicable %</p>	
9	<p>Risk purchase: If the supplier fails to deliver the goods within the delivery specified in the Purchase Order, BHEL will be entitled to terminate the contract and to Purchase elsewhere at the risk and cost of the seller either the whole of the goods or any part which the supplier has failed to deliver or despatch within the delivery period mentioned in the Purchase Order.</p>	
10	<p>DELIVERY PERIOD: Our delivery term shall be 8 weeks from the date of data sheet approval.</p>	
11	<p>Validity: 120 days from Technical Bid opening. Non-compliance of the same will result in offer being liable for rejection</p>	
12	<p>GENERAL CONDITION: Kindly submit the 'no deviation format' with clear indication of data sheet no / specification ref, drawing, and quality plan.</p>	

13	Reverse Auction: Reverse Auction is not applicable for this tender.	
14	BHEL will consider the ranking after the loading is applied as referred above wherever deviations are observed.	
15	DOCUMENT SUBMISSION In case of PO, documents (drawings, data sheets and quality plan in triplicate) shall be submitted within 15 days from the date of receipt of po and the revised documents shall be submitted within 1 week from the date of receipt of engineering / quality comments	
16	QUANTITY OF TENDERED QTY BHEL reserves the right to increase or decrease the tendered quantity	
17	PRE QUALIFICATION REQUIREMENT 1. "The offered type of equipment shall be in successful operation for a period of at least 1 year as on the date of techno-commercial bid opening, in coal fired thermal power plant of similar rating in India and performance feedback from end-user to be furnished along with offer. Commissioning and service support for the offered equipment shall be available in India". 2. This PQR is not applicable for BHEL PMD vendors.	
18	MSE Clause: All vendors are requested to note the Annexure X –Special clauses for Micro Small and Medium Enterprises (MSE) suppliers. If L1 vendor is an MSE vendor entire project package will be ordered on L1 vendor. If a Non MSE vendor is coming as L1, then L1 prices will be counteroffered on MSE vendor who is quoting price within the price band L1+15% and if they are agreeing purchase order will be awarded for full/complete supply of total tendered value to MSE. If more than one MSE vendors are available in the L1+15% price band then lowest of the MSE vendor will be selected for counteroffering. If lowest MSE vendor is not accepting it will be counteroffered to the next MSE vendor in the price band and so on. Finally if any of the MSE vendor in the price band is not accepting it will be ordered on L1 non MSE vendor. MSE suppliers can avail the intended benefits only if they submit along with the offer, attested copies of documents as mentioned in the Annexure X. Vendor to confirm. The MSE clause will only be applicable to the Indian vendors who are quoting for the complete NIT requirement on their own in INR. Quotation should not be in collaboration with any foreign vendor i.e part quotation in INR and part quotation in foreign currency if the vendor want to avail MSE Clause	
19	Erection and Commissioning support Charges: Lump sum charges of Erection and Commissioning support with exact Man days for the CCTV system with applicable extra Taxes (Service Tax) and Duties etc. in detail should be quoted separately. (If applicable)	
20	Service charges for Erection and Commissioning support Charges: Indicate the applicable service charges in percentage (If applicable)	

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Fraud prevention policy

The bidder along with its associate / collaborators / sub-contractors / sub-vendors / consultants / service providers shall strictly adhere to BHEL fraud prevention policy displayed on BHEL website <http://www.bhel.com> and shall immediately bring to the notice of BHEL management about any fraud or suspected fraud as soon as it comes to their notice.

ANNEXURE-B (For Import Vendor)

ACCEPTANCE OF TECHNO - COMMERCIAL TERMS AND CONDITIONS BY THE BIDDERS

Description of the Equipment:		CCTV system & Its Mandatory Spares
BHEL Tender No. & Date		
SI No.	Terms and conditions	Vendor's confirmation
1	<p>Technical : Supply of CCTV system & Its Mandatory Spares for FOR/OPGCL 660MW - 3, 4 (1713, 14) Site main items and OPGCL 660MW - 3, 4 mandatory Spares requirement as per the spec.: "CI:CCTV:1713/REV 00"</p> <p>Vendor shall submit their own Quality Plan for BHEL approval</p>	
2	<p>Firm Price: The quoted / finalised rates shall be Firm till execution of the supplies. Offer with PVC clause will not be considered.</p>	
3	<p>The quotes shall be on FOB/ Nearest GATE WAY Airport basis basis.</p> <p>If vendor passing transit insurance under BHEL scope, Offer will be loaded 0.082% of (Basic material value + ED + Forwarding & Packing + Freight charge).</p>	
4 (a)	<p>Payment terms:</p> <p>For Main Items - North Karanpura Project: BHEL Payment term is 90% payment on CAD basis after 45 days with 10 % PBG from the date of receipt of documents, specified in PO, at BHEL bank. Respective bank charges to respective account. Balance 10% retention payment will be made after successful commissioning of the system at project site.</p> <p>For Mandatory Spares Requirement of North Karanpura Project: 100% payment on CAD basis after 45 days with 10 % PBG from the date of receipt of documents, specified in PO, at BHEL bank. Respective bank charges to respective account.</p> <p>The given BHEL standard payment term needs to be accepted. Not accepting the BHEL standard payment term will result in the offer being liable for rejection.</p>	
4 (b)	<p>1. In the case of Usage LCs the loading will be considered @ 1.5% on the offered Value.</p> <p>2. For LC at sight the loading will be considered @ 3.5% on the offered Value.</p> <p>3. Normally CAD at sight and Confirmed LCs are liable for rejection.</p>	
5 (a)	<p>Liquidated damages: Delivery of the goods specified in the purchase order should be made within the time prescribed. Failure to dispatch the materials in the time as per the delivery quoted in our Purchase Order would make the supplier liable to an un-conditional LD at the rate of ½% of the total order value per week or part thereof subject to maximum of 10% of the total order value.</p> <p>For staggered delivery schedule, LD shall be 0.5% of the undelivered portion per week of the delay or part thereof, subject to a maximum of 10% of the total order value.</p>	

5 (b)	Loading Criteria LD / Penalty: Any deviation of the above LD/Penalty clause, loading will be applied to the extent to which it is not agreed by the bidder (at offered value).	
6 (a)	Guarantee / Warranty Period Guarantee clause 18months from the date of supply or 12 months from the date of actual put in use, whichever is earlier.	
6 (b)	Loading Criteria Guarantee / Warranty Period: No Deviation is permitted. If still vendor offered any deviation on the Guarantee / warranty period it may leads to rejection of offer.	
7(a)	Performance Bank guarantee: 10% of material value as PBG shall be offered.	
7(b)	Loading Criteria Performance Bank guarantee: No Deviation is permitted and the deviated offers are liable for rejection.	
8	Taxes & Duties: All Taxes, Duties, Service Taxes etc. payable as extra to the quoted price should be specifically stated in offers along with CST & TIN No / Tariff No. etc., failing which the purchaser will not be liable for payment of such Taxes and Duties.	
9	Risk purchase: If the supplier fails to deliver the goods within the delivery specified in the Purchase Order, BHEL will be entitled to terminate the contract and to Purchase elsewhere at the risk and cost of the seller either the whole of the goods or any part which the supplier has failed to deliver or despatch within the delivery period mentioned in the Purchase Order.	
10	Delivery Period: Our delivery term shall be 8 weeks from the date of Data Sheet approval.	
11	Validity: 120 days from Technical Bid opening. Non-compliance of the same will result in offer being liable for rejection	
12	General Condition: Kindly submit the 'No deviation format' with clear indication of Data Sheet No / Specification ref, Drawing, and Quality plan.	
13	Reverse Auction: Reverse Auction is not applicable for this tender.	
14	BHEL will consider the ranking after the loading is applied as referred above wherever deviations are observed.	
15	DOCUMENT SUBMISSION In case of PO, documents (drawings, data sheets and quality plan in triplicate) shall be submitted within 15 days from the date of receipt of po and the revised documents shall be submitted within 1 week from the date of receipt of engineering / quality comments	

16	<p>QUANTITY OF TENDERED QTY BHEL reserves the right to increase or decrease the tendered quantity</p>	
17	<p>PRE QUALIFICATION REQUIREMENT</p> <p>1. "The offered type of equipment shall be in successful operation for a period of at least 1 year as on the date of techno-commercial bid opening, in coal fired thermal power plant of similar rating in India and performance feedback from end-user to be furnished along with offer. Commissioning and service support for the offered equipment shall be available in India". 2. This PQR is not applicable for BHEL PMD vendors.</p>	
18	<p>MSE Clause:</p> <p>This clause is hereby notified to the foreign vendors for their information only as it will only be applicable to the Indian vendors meeting the criteria.</p> <p>All vendors are requested to note the Annexure X – Special clauses for Micro Small and Medium Enterprises (MSE) suppliers.</p> <p>If L1 vendor is an MSE vendor entire project package will be ordered on L1 vendor. If a Non MSE vendor is coming as L1, then L1 prices will be counteroffered on MSE vendor who is quoting price within the price band L1+15% and if they are agreeing purchase order will be awarded for full/complete supply of total tendered value to MSE. If more than one MSE vendors are available in the L1+15% price band then lowest of the MSE vendor will be selected for counteroffering. If lowest MSE vendor is not accepting it will be counteroffered to the next MSE vendor in the price band and so on. Finally if any of the MSE vendor in the price band is not accepting it will be ordered on L1 non MSE vendor.</p> <p>MSE suppliers can avail the intended benefits only if they submit along with the offer, attested copies of documents as mentioned in the Annexure X. Vendor to confirm.</p> <p>The MSE clause will only be applicable to the Indian vendors who are quoting for the complete NIT requirement on their own in INR. Quotation should not be in collaboration with any foreign vendor i.e part quotation in INR and part quotation in foreign currency</p>	
19	<p>Erection and Commissioning support Charges: Lump sum charges of Erection and Commissioning support with exact Man days for the CCTV system with applicable extra Taxes (Service Tax) and Duties etc. in detail should be quoted separately. (If applicable)</p>	
19 (a)	<p>Weight of the components:</p> <p><u>Main requirement</u></p> <p>i) Component Net Weight ii) Component weight with packing</p>	

19 (b)	<p>Weight of the component <u>Mandatory spares requirement</u> i) Component Net Weight ii) Component weight with packing</p>	
20	<p>Fraud prevention policy The bidder along with its associate / collaborators / sub-contractors / sub-vendors / consultants / service providers shall strictly adhere to BHEL fraud prevention policy displayed on BHEL website http://www.bhel.com and shall immediately bring to the notice of BHEL management about any fraud or suspected fraud as soon as it comes to their notice.</p>	

Annexure – C

MM/BOI/BHEL TRICHY

SPECIAL TERMS AND CONDITIONS

1. This tender is for the supply of CLOSED CIRCUIT TELEVISION SYSTEM FOR FURNACE FLAME VIEWING (WITH FOUR CAMERA PER BOILER) AND IT'S MANDATORY SPARES REQUIREMENT as per specs, size and quantities mentioned in the attached enquiry.

2. The vendor shall have adequate experience in manufacturing and supply similar type of equipment.

3. The tender is in three parts as follows:

A) Part – I Pre-Qualification requirement:

- a. The offered type of equipment shall be in successful operation for a period of at least 1 year as on the date of techno-commercial bid opening in coal fired thermal power plant of similar unit rating.
- b. Performance feedback for successful operation from end user to be furnished.
- c. Commissioning and service support for the offered equipment shall be available in India.

This PQR is not applicable for BHEL PMD vendors.

Vendor to submit supporting documents for the same. Offers qualifying on the above requirement will only be considered for further processing.

B) Part – II Techno-commercial bid:

Techno commercial bid will be consisting technical offer with complete set of supporting documents and commercial bid without indicating the price.

Offers found suitable on technical and commercial grounds only, will be considered for further processing.

C) Part - III – Price Bid:

It will be consisting of price details:

All three bids are to be submitted in separate sealed covers, duly indicating the type of bid and enquiry number. These three envelopes will be sent in single cover duly super scribing the Enquiry Number.

In addition to the above mentioned three parts bid, vendors who qualify on Pre-Qualification Requirement and Techno-commercially and are not registered vendor of BHEL-Trichy has to submit the filled in "Supplier Registration Forms" (available at www.bheltry.co.in - Online Supplier Registration – Material Management or <http://vis.bheltry.co.in/olsa/>) before Price –Bid opening. Price bid of such vendors will be opened only after the receipt of all documents and registration with BHEL-Trichy.

Part – I Pre-qualification bid will be opened on due date:

The techno-commercial bid of the qualified vendors will be opened on a suitable date with due intimation. Based on the acceptance of techno-commercial bid and vendor evaluation, the price bid of the qualified vendors will be opened on a suitable date with due intimation.

Annexure – C
MM/BOI/BHEL TRICHY
SPECIAL TERMS AND CONDITIONS

Following will be the criteria for vendors to qualify:

- a. Vendor should have been approved by BHEL Trichy for this items under Permanent category (OR)
- b. Vendor should submit the following documents for considering them as an approved vendor:
 - i. Duly filled-in Supplier Registration Forms.
 - ii. Availability of minimum manufacturing, handling, testing and measuring facilities as detailed in the Supplier Registration Form.
 - iii. BHEL will have the right for spot assessment of the facilities for assessment.
 - iv. Qualifying to our techno commercial requirements of the Enquiry.

Supplier Registration Form (SRF) has to be duly filled up online and send one copy with all the documents as mentioned in SRF & if vendors have already submitted SRF & hard copy is sent to BHEL, can mention SRF Number (Application Number).

URL for online Registration form is as below

<http://vis.bheltry.co.in/olsa/>

For any help regarding filling of SRF, you may contact following

Mrs. Nalini Subramanian (Purchase Officer- Supplier Development Cell)
Ph:0431/2577301
Email ID: nalini@bheltry.co.in

Mr. Ebinesan (Sr. Manager- Supplier Development Cell)
Ph:0431/2577448
Email ID: ebi@bheltry.co.in

Systems / BHEL /TRICHY
Ph:System SDC:0431/2577121, ljp@bheltry.co.in

Ph:System ERP:0431/2577522, erpsubcon@bheltry.co.in

For any queries regarding tender you may contact

1) Mr. Mr. SYED SHAFAT HAMD RASOOL,
Engineer/MM/BOI
BHEL Trichy
0431-2577072
sshrasool@bheltry.co.in

2) Mrs.P.L. Pramila
Sr.Manager/MM/BOI
BHEL Trichy
0431-2574737
pramila@bheltry.co.in

Annexure – C
MM/BOI/BHEL TRICHY
SPECIAL TERMS AND CONDITIONS

4. BHEL reserves the right to increase or decrease the tendered quantity and split the tendered quantity among more than one tenderer and place orders accordingly in any proportion based on commitment, requirement and supplier's capability in terms of delivery and quality as assessed by BHEL.
5. BHEL reserves the right to negotiate the L1 rate.
6. BHEL reserves the right to re-float the tender opened, if L1 price is not the lowest acceptable price to BHEL inter-alia other reasons.
7. BHEL reserves the right to order on more than one vendor at the lowest acceptable price to BHEL.
8. Vendors have to confirm to the Commercial Terms and Special Terms & Conditions attached.
9. BHEL standard LD condition is 0.50 % per week to a maximum of 10 % for the undelivered portion of Material.
10. PO will be released only after customer approval.
11. Please indicate the exact location of WORKS / FACTORY.
12. The vendor who are not registered in BHEL PMD as permanent vendors must ensure that they complete the supplier registration formalities and get registered with BHEL Trichy as permanent PMD vendors before the price bid opening is done. The offers of the vendors who fail to do so will be liable for rejection

BHARAT HEAVY ELECTRICALS LIMITED

TIRUCHIRAPALLI-620 014

CONTROLS AND INSTRUMENTATION/FB



TECHNICAL SPECIFICATION

FOR

FURNACE AND FLAME VIEWING CAMERA SYSTEM

PROJECT :-

ORISSA POWER GENERATION CORPORATION LTD.,

IB THERMAL POWER STATION, BANHARPALI

2X660MW, UNIT 3&4, CUSTOMER No. 1713 & 1714

SPECIFICATION REF. CI:CCTV:1713 / REV. 00

REV.NO	DATE	DESCRIPTION	PREPARED	CHECKED	APPROVED
00	15/02/16	Initial Release	SR	KB	AKP

SECTION - 1

I. GENERAL

- a. The various aspects covered in this specification are as follows :-
- b. The general points are covered in Section – 1 – General.
- c. The specification requirements are covered in Section – 2 – Specifications.
- d. The documents to be submitted along with the offer / after placement of Order / along with the panel are covered in Section – 3.
- e. The Inspection / Testing and Packing requirements are covered in Section – 4 Testing, Inspection and Packing.
- f. Commissioning spare list, if any, with price break up shall be furnished along with offer.
- g. Vendor must quote optional price for Mandatory spares separately along with the offer.
- h. Recommended spares list for two years operation with price break up shall also be furnished separately along with the offer.
- i. If any special or non-standard tools are required for installation, operation or maintenance, the same shall be supplied along with the panel.
- j. The equipment shall be guaranteed for a period of 12 months from the date of commissioning OR 18 months from the date of dispatch whichever is earlier.
- k. Despatch clearance will be issued along with PGMA with DU Nos. for the ordered items to vendor after the receipt of technically accepted Inspection Report. Vendor shall mark the PGMA with DU Nos. on the casing of the packing and in the packing slip.
- l. Since the vendor's works alone is approved by BHEL, vendor shall manufacture this item in their own works only and shall not off-load the jobs to any other suppliers without the written approval by BHEL.
- m. All components of the system except panel should be packed in such a way that it should not get damaged during transportation. Panel, if applicable, shall be packed as per packing procedure QA:CI:STD:PR:02/02.

SECTION - 2

I. SPECIFICATION FOR FURNACE AND FLAME VIEWING SYSTEM

Furnace and Flame viewing system with all equipment and accessories shall be supplied for the purpose of monitoring flame (**visible light**) from all the burners of the fossil fired boiler with balanced draft, tilting tangential and corner firing arrangement. The cameras are expected to withstand the temperature in the furnace of boiler, which will not be less than 1600° C (**with suitable air cooling arrangements** provided to suit this requirement if camera itself cannot withstand to this temperature). The cameras and system shall be suitable for all the fuels fired like light diesel oil, heavy fuel oil and sub-bituminous coal with high ash content. Cameras shall be suitable for viewing of furnace flame at a straight line of view.

Four number of cameras per boiler (Out of four cameras, two will be mounted and two will be used as spare) shall be supplied with viewing angle sufficient to view the furnace flame and all the burners fully. Only two sets of camera mounting accessories need to be supplied along with the camera. Dimensions of the furnace with the location of burners (shown as wind box arrangement) that the cameras are expected to view is shown in the drawing titled "Location drawing for furnace CCTV camera" - Drg. No. 3-97-596-22423 / 00.

The system should meet the following requirements as a minimum

- a. The system shall be supplied complete with all accessories, auxiliaries, interconnecting cables and pneumatic tubing's required for the system from the power/air terminal points indicated elsewhere in this specification. Camera shall be equipped with a pneumatic advance & retract system.
- b. Camera shall have **Zoom (optical/digital)** and **Iris control (manual)** facility. The iris control shall be provided along with spot filter located in the furnace lens to control the light entering into camera to ensure high quality picture. It shall be possible to adjust Zoom and Iris of the camera from the Control Room.
- c. Fully wired Panel/Camera Control box with IP:55 degree of protection shall be provided in the field near camera for mounting all the controls /electronics/accessories necessary for controlling camera operation as well as to take care of interlocks such as :
 - Automatic withdrawal of camera in case of pneumatic air supply failure, temperature exceeding the design set point at camera tip, camera control electronics failure and power supply failure.
 - Camera Local/Remote operation selection along with advance/ retract / reset provisions and indications (Camera IN, Camera OUT, Camera Fault) shall be provided.
- d. However, loose components which are designed for IP: 55 or better degree of protection can be neatly mounted in an open top covered rack near the camera instead of panel.
- e. For equipment's in Control Room
 - Vendor to supply 20" High resolution colour LCD Monitor - 1920 X 1080 pixels (Full HD), Multiplexer/DVR, Camera remote advance/retract pushbuttons, Camera advance/retract/fault indications, Fault Reset pushbutton, Camera Remote/Local mode selection pushbuttons, Camera Remote/Local selected indication, Iris control, Zoom controller, Video amplifier (if required) etc as loose items and take care of the mounting arrangement of all the loose components suitably in control desk. All pushbuttons and indication lamps should be properly grouped and arranged in a box for conveniently mounting in the control desk. A wall mounted box with IP-42 degree of protection shall be provided in control room to accommodate all the equipments.

II. OTHER SPECIFIC REQUIREMENTS OF THE SYSTEM

- a. The cameras shall be of colour CCD, suitable and proven to monitor the visible light flame from the furnace.
- b. The viewing angle of the camera shall be commensurate with the furnace size, the camera location and the positioning of the burners as indicated in the "Location drawing for furnace CCTV camera" - Drg. No. 3-97-596-22423 / 00.
- c. The cameras shall be suitable for direct online continuous viewing of the coal and oil flame and condition of the furnace internals including slagging of the water walls and any other deterioration in the furnace condition in the monitor located in the central control room.
- d. It is vendor's responsibility that the offered system is suitable to provide clear picture of the furnace.
- e. The system shall conform to PAL and number of TV lines shall be adequate for clear image of the furnace.
- f. Thickness of water wall including insulation thickness and refractory is approximately around 350mm. Vendor to select camera insertion/ retract lengths suitably.

- g. Air cooled lens focusing range shall be selected to have clear view of the closest and farthest point in furnace as per given furnace sizes indicated.
- h. Any cooler unit required for lowering the temperature of cooling air shall be included in vendor's scope. Vendor shall take into account the pressure, temperature and quality of instrument air available for the purpose of cooling and purging.
- i. Multiplexing units (vendor to specify the type offered) to display one / multiple flame viewing camera system inputs in the monitor simultaneously.
- j. Each camera unit shall have the following features :
 - Automatic light compensation : Suitable for furnace flame viewing application.
 - Resolution : 450 or more lines at centre.
 - Power supply : 240V AC, 50 Hz, 1 Phase
- k. Camera housing shall have following features.
 - The camera used shall be housed in stainless steel housing with air-cooled jacket.
 - Suitable ventilation, purging and cooling facilities shall be provided to suit application requirements.
 - Gasket sealing: All edges (Neoprene/Silicone)
- l. Video Monitor offered shall have following features
The monitor size shall be 20" High resolution colour LCD Monitor - 1920 X 1080 pixels (Full HD) and shall be high-resolution type and have the following minimum features:

Geometric distortion	: Less than 2%
Power supply	: 240V, 50 Hz AC, 1 Phase.
Primary controls	: Contrast, brightness
Scanning standard	: PAL standard.
High-frequency radiation noise	: Minimum
Operating temperature	: Up to 40°C
- m. Applicable drawings for furnace openings provided for CCTV seal box are "Acoustic pyrometer opening", 2-06-653-08866/01, "Seal box assembly for acoustic pyrometer opening", 2-09-001-00680/01 (enclosed in this specification). Any additional need of inserts pipe/tapping points for installing camera in seal boxes for fixing camera to be studied by vendor based on BHEL seal box drawing and to be included in offer. All necessary erection material for erection of camera and accessories as well as materials required for supporting the camera from boiler shall be in vendor scope.
- n. System will be installed by BHEL, as per the drawings furnished by vendor using the materials supplied by the vendor. On completion of installation, it is the responsibility of vendor to fully commission the system and prove the performance. Also, it is the vendor's responsibility to get the protocol signed from customer and BHEL site for successful operation and handing over of the system.
- o. Any accessories required for erection and commissioning of the system shall be included in the offer itself even though the same is not called for in the enquiry. This may be highlighted in the offer for future improvements.
- p. All necessary remote/ local programming tools, if required, shall be included in the main offer itself.
- q. Any other accessory to make the system completely operational shall be included in the main offer itself.

III. CLIMATIC CONDITIONS:

- a. Site elevation above Mean Sea Level – 199.5 M
- b. Highest temp recorded – 48 °C
- c. Lowest temp recorded - 4°C
- d. Maximum Relative Humidity – 46% (Summer) / 67% (Winter) / 87% (Monsoon)
- e. Minimum Relative Humidity – 21% (Summer) / 33% (Winter) / 87% (Monsoon)
- f. Average Relative Humidity – 65%
- g. Seismic Zone – Zone III as per IS 1893 Part-1 (2002)
- h. Geographical location – At Latitude 21° 48' North and Longitude 83° 52' East
- i. Equipment shall be suitable for use in tropical climate with high humidity, heavy rainfall and climate conducive to fungus growth and corrosion.
- j. All equipment's / components rating specified are for site conditions. Vendor shall apply suitable de-rating factor for the given site conditions to the rating of the equipment / components offered.

IV. QUALIFYING REQUIREMENT:

- a. The system shall have proven background for more than one year in similar applications in fossil-fired power plants of similar or higher capacities. Vendor shall submit a list of references of plants (for power boilers with capacity as per enquiry or above) where similar systems are in operation for more than one year. Commissioning and service support of the offered equipment shall be available in India. Vendor shall ensure accurate, reliable and trouble-free operation in conditions and environments that are normally found in fossil-fired power stations.

V. PROTECTION REQUIREMENTS OF THE SYSTEM:

- a. The Camera assembly & housing shall have air cooling arrangement with all accessories.
- b. The camera for furnace flame monitoring shall be mounted on a retract mechanism having automatic retraction facility with fail-safe feature. The automatic retraction unit shall be pneumatic operated. BHEL/ Customer will provide instrument air for the camera lens tube and retract mechanism.
- c. Retract mechanism mounts shall have following features.
 - Retract mechanism shall be provided with suitable mounts to fix the camera housing, the lens tube and the wall box.
 - Mounts shall be sturdy and lightweight, capable of being supported from boiler.
- d. Protection shall be given against cooling medium failure.
- e. Automatic shutter/gate mechanism at the camera port to be supplied by vendor, so that port will be closed once camera is withdrawn from the furnace. In case camera retracts due to fault such as loss of air for prolonged duration necessary protections shall be built into the system so that camera do not drift into the furnace due to gravity.
- f. To protect the camera unit from the furnace heat, continuous air purging shall be maintained into the camera housing.
- g. In case of failure of purging air the camera assembly shall retract automatically to avoid any damage or deterioration due to overheating. Also, shutter/gate located in the furnace opening shall close to prevent radiant heating.
- h. Necessary limit switches shall be supplied along with the camera system by the vendor to detect camera advanced/retracted positions. Vendor shall build necessary interlocks for protection of camera with the same.
- i. Necessary interlocks to be built into the camera system such that once camera gets retracted due to fault, only after the cause of the fault is corrected and acknowledged by operator camera can be inserted again.
- j. For acknowledging and resetting the fault, necessary pushbuttons to be made available in Control Room. The reset pushbuttons provided at the control room shall be mounted at a suitable location at operator's convenience.
- k. An air tank shall be provided near the camera which can store sufficient instrument air for advancing and retracting the camera minimum three times into and out of the furnace. The capacity of the air tank shall be 10 litres minimum for advance / retract operations.

VI. CABLES

- a. The Scope of Cables is as follows.
 - All Video cables required for the system shall be supplied by vendor.
 - Any other cable required to form a complete functional system shall be supplied by vendor.
 - Control Cables will be provided by BHEL from camera to control room.
- b. Length between Camera and Control Room is 350 Mtr.
- c. Video signal transmission cable shall be of high temperature co-axial type having the following characteristics:

Type	: Armoured
Temperature range	: Up to 80° C.
Nominal impedance	: 75 Ohm.
Nominal capacitance	: Less than 20 pF/ft.
Length	: 350 Mtr / Camera.
- d. Requirement of video amplifiers, if any, shall be included by vendor based on the length in the offer itself.

VII. FACILITIES PROVIDED BY BHEL/CUSTOMER AT SITE :

a. Power Supply

- Only one number 240V AC, 50 Hz single phase supply will be made available for each flame viewing camera at Vendor's Field camera control box. Any other voltage required for the operation has to be derived by the vendor from the above supply. Isolation/ protection requirements for the same also shall be in vendor scope.
- One feeder 240V AC, 50 Hz single phase will be given in Control Room. Electrical power requirements for other accessories shall be derived by the vendor from this supply.

b. Air Supply

- Instrument air at 4.0 to 5.0 kg / sq.cm (g) will be made available for camera housing cooling and lens tube cooling at one point for each camera, terminated with a valve of connection size Nb40 (F) within three metres from the camera. It shall be in vendor's responsibility to derive any other requirement for air supply from this available source. Vendor to provide all required accessories to receive this air and supply to the various components that requires air supply.
- As boiler is not a fixed structure, tubes connecting camera with the air source shall consist of flexible, SS braided hoses with quick disconnect facility along with PVC coated copper /SS tubes /GI pipes and shall be supplied by the vendor along with the camera system.
- Quality of instrument air provided may not be meeting the necessary standards all times and hence, it is vendor's responsibility to include suitable air filter arrangements for getting good quality instrument air for their CCTV system.

VIII. MAKE OF COMPONENTS OFFERED:

- a. Makes of all major brought out components shall be subjected to BHEL/Customer approval.

IX. VENDOR TO INCLUDE THE FOLLOWING IN THE OFFER:

- Commissioning spares, if any, with bill of materials.
- Commissioning of system is in the scope of vendor. Also, erection assistance shall be provided by vendor. Number of man-days to be accounted as 15 with three visits to site for erection/commissioning each boiler. All necessary arrangements for travel and stay shall be taken care by vendor only.
- Erection materials and supporting structures required for the CCTV system shall be estimated and supplied considering the furnace expansion as below. Necessary supporting required for camera system shall be from boiler only and not platforms considering the boiler movements.
 - Furnace expansion in horizontal direction - 39mm sideways
 - Furnace expansion in vertical direction - 150mm downward

X. OPTIONAL PRICE:

- Optional price for complete erection and commissioning of the system at site including manpower and material to be quoted separately along with the offer.

SECTION-3

I. DOCUMENTS TO BE FURNISHED BY THE VENDOR

- a. Along with the offer (Offer shall be given in duplicate. Each copy shall contain the following)
- Complete Bill of material.
 - Catalogue on the various equipments.
 - Block diagram showing inter-connection among various equipments (from field to control room) showing the components and cabling in-between.
 - Dimension of the panels and loose components in control room.
 - List of references of plants where similar systems are in operation
 - Unit price for various equipments & video cables (in the priced bid)
 - Vendor quality plan in BHEL format for camera system.

b. Documents to be given after placement of order

Three sets of the following documents/drawings shall be sent to BHEL within 15 days from the date of placement of order for approval (in Adobe Acrobat reader - ".pdf" format). Comments, if any, on the vendor drawings shall be incorporated and revised drawings shall be submitted within 15 days from the receipt of the BHEL commented drawings at vendors end.

- Block diagram showing inter-connection among various equipments (from field to control room).
- Functional write up of the system offered including the functional requirements and interlocks provided.
- Logic drawings for camera advance/ retract and hold in retract positions.
- OGA / dimensional details for all the major components.
- Panel mounting / fixing arrangement drawings.
- Power / signal external connection details.
- Power / Air requirement.
- Vendor shall furnish recommended erection/installation drawings for the camera & retract assembly showing mounting and support arrangements for approval from BHEL.
- Catalogues and Complete Bill of material.
- Vendor quality plan in BHEL /Customer format after incorporation of BHEL comments and indicating PO number.

c. O & M Manuals

- All O&M manuals shall be in A4 size and shall contain only the contract specific information. Irrelevant information's shall be scored-out.
- All drawings shall be inserted in an appropriate place in O&M manuals with proper tagging.
- All drawings in the O&M manual shall be in black and white and in A3 or A4 size format only. Bigger size drawings shall be reduced to A4 or A3 size before insertion.
- O&M manuals in CD-ROM shall be sent to BHEL (T). It shall not be sent along with the equipment to site directly. O&M shall contain as built drawings, catalogues for all the components used in the system in addition to the erection, operating, maintenance and trouble-shooting instructions.

SECTION-4

I. INSPECTION AND TEST REQUIREMENTS

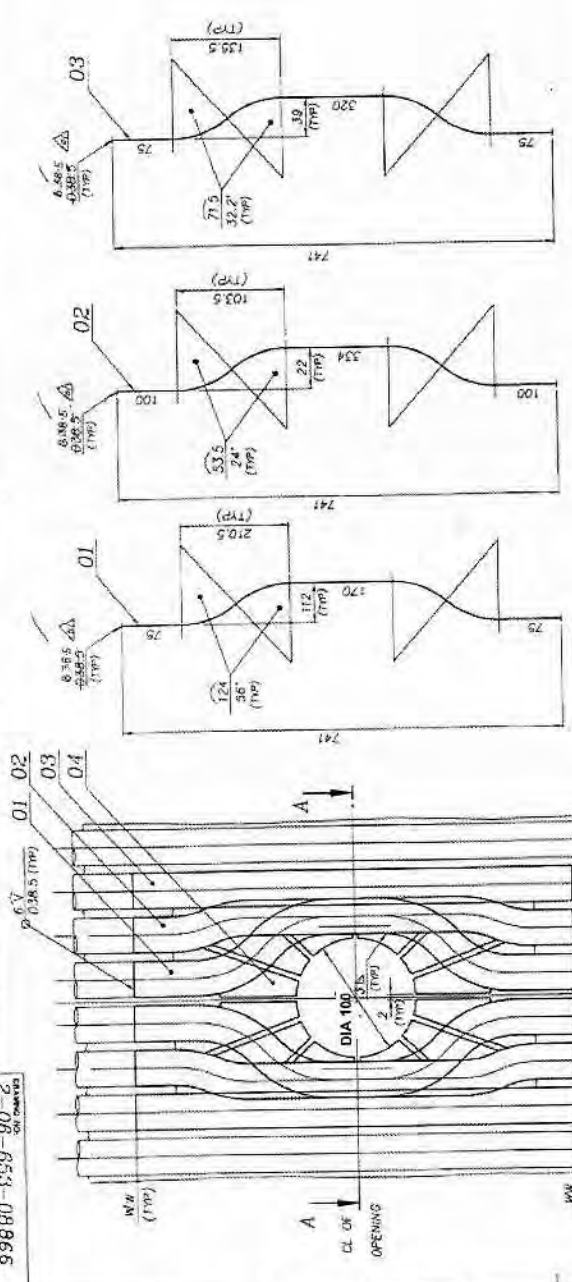
- The vendor shall submit the Vendor Quality Plan (VQP) and the VQP shall be as per the "BHEL format" – (copy enclosed) along with the offer for BHEL review. The same will be subjected to BHEL/ customer approval after purchase order.

Other Requirements:

- Wherever 'CHP' (Customer Hold Point) / 'W' (witness) is indicated in the approved VQP, vendor shall offer the material for inspection by Customer and wherever 'W' is indicated in the approved VQP, vendor shall offer the material for inspection by BHEL and / or Customer.
- Vendor shall give 21 days' notice for arranging inspection by BHEL/ Customer.
- Wherever 'CHP' / 'V' (verification) is indicated against verification of Type test, clearance from Customer, vendor shall ensure the same prior to inspection and submit the same during inspection.
- Material can be despatched only after obtaining M.D.C.C (Material Despatch Clearance Certificate) from Customer. No material shall be despatched without MDCC.
- Vendor shall submit copy of all test certificates / documents as indicated in the approved VQP along with inspection call.
- Testing charges for routine tests, if any, shall be included in the product cost and no separate testing charges for this will be considered.

FOR TOLERANCES OF UNDIMENSIONED DIMENSIONS DURING MANUFACTURE. REFER DRAWING STD. NO. IP 003 0009.

99880-859-90-2
REV. 001



NOTES:

- 01. FOR DESIGN PARAMETERS REFER ASSY DRAWING.
- 02. RADIUS OF BEND - R127
- 03. TOLERANCE UNLESS OTHERWISE SPECIFIED
LINEAR +1.5MM
ANGULAR +1°
- 04. FINs SHALL BE CUT TO SUIT THE TUBE PROFILE AND WELDED WITH TUBE SUCH THAT IT SHOULD BE NORMAL TO TUBE AT THE POINT OF CONTACT.
- 05. EDGE PREPARATION AS PER STD. IP 062 05 89

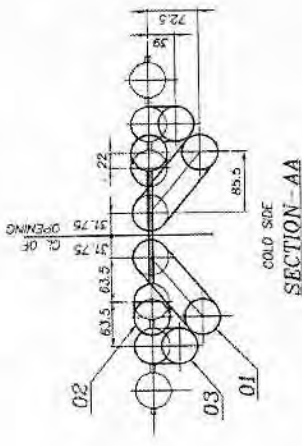
ITEM NUMBER	DESCRIPTION	DRAWING NUMBER	UNIT WEIGHT	QUANTITY
01	WELDED TUBE DS1X6-816 LONG		6.000	2
02	WELDED TUBE DS1X6-748 LONG		5.500	2
03	DRHX6-756 LONG		5.600	2
04	PLATE 6; 210X450		3.500	1

TYPE OF PRODUCT OR NAME OF CUSTOMER/PROJECT
 Bharat Heavy Electricals Ltd
 (INCORPORATED IN INDIA)
 BRUCHERHALL - BHARAT

DATE: 14.03.85
 DRAWN BY: M. J. J. J.
 CHECKED BY: M. J. J. J.
 APPROVED BY: M. J. J. J.

WEIGHT (KG): 37.700
 NTS: 121

DRAWING NO: 2-06-653-08866/01



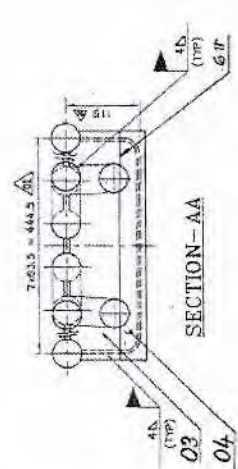
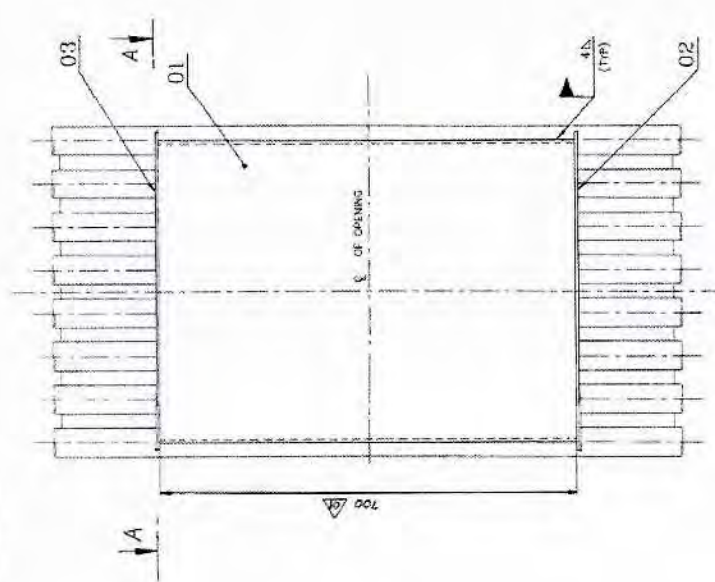
SECTION-AA

08900-100-60-60
OF DRAWING

FOR THE BRACKET OF UNDESIGNED
ITEMS
REFER PLANS 373 AND 38 USE 100A

NOTES:

1. SEAL BOX TO BE FILLED WITH CASTABLE RETRACTORY
2. NECESSARY CUTTING, BENDING, DRILLING AND FABRICATION MAY BE DONE AT SITE TO SUIT THE REQUIREMENTS
3. ALL WELDS TO BE PROTECTED WITH AN ANTI-RUST EMBROID
4. IN CASTABLE RETRACTORY WITH TWO COATS OF BITUMINOUS PAINT.
5. FOR WELDING OF TOP SCALLOPED BAR REFER DRC No. 3-09-002-00194



TYPE OF WELD	TYPE OF ELECTRODE	LENGTH OF WELD
4S (SITE)	E 7018-T	Ø 7 MTRS
4S (SITE) (P. T. TUBE)	E 7018-T	1.3 M ₂
4S (SITE) (P.L. TUBE)	E 7018-T	1.00 M ₂
6T (SITE)	E 7018	Ø 32 M ₂

ITEM NO.	QTY	DESCRIPTION	REMARKS	UNIT WEIGHT	QTY	WEIGHT
04	1	PL G; 50 X 444.5		1.000	1	1.000
03	1	SCALLOPED BAR		1.300	1	1.300
02	1	SCALLOPED BAR		2.400	1	2.400
01	1	SEAL BOX		19.800	1	19.800

TYPE OF PRODUCT OR NAME OF CUSTOMER/PROJECT
 Bhavot Heavy Electrics Ltd
 UNIT HIGH PRESSURE BOILER UNIT
 THROUGHPUT/PALEI - 1200/14

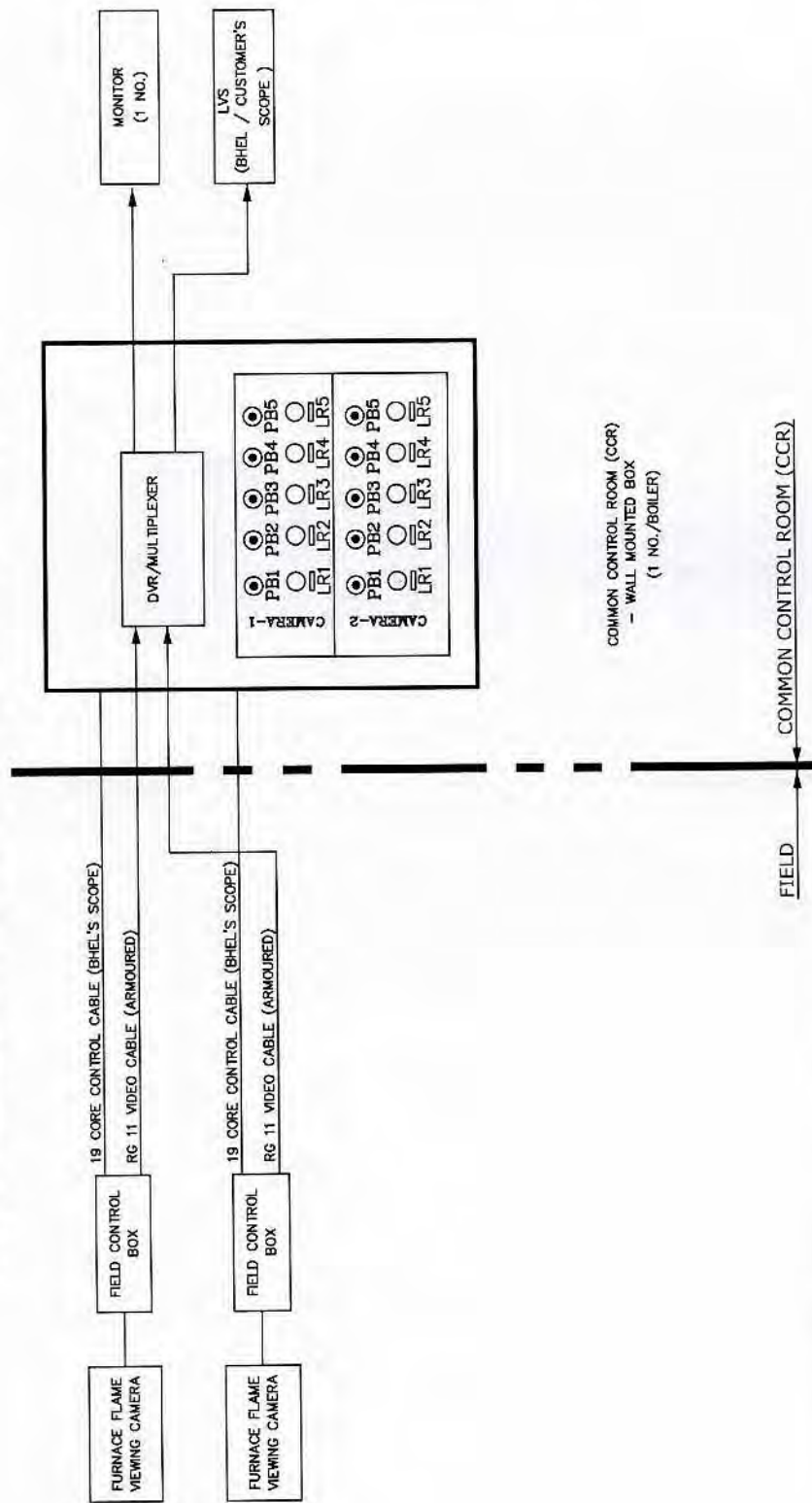
DATE: 12/11/2011
 TIME: 11:15
 WEIGHT (kg): 24.600

THIS SEAL BOX ASSY FOR
 ACOUSTIC PYROMETER OPNG

DRAWING NO: 2-09-001-00690 01

REV. DATE. ALTERED. BY. DATE.
 DIMENSIONS REVISOR'S CHECKED FOR ITEMS 01-04.
 TANK W.T. REVISED.

TYPICAL BLOCK DIAGRAM OF FURNACE FLAME VIEWING CAMERA SYSTEM



LEGEND

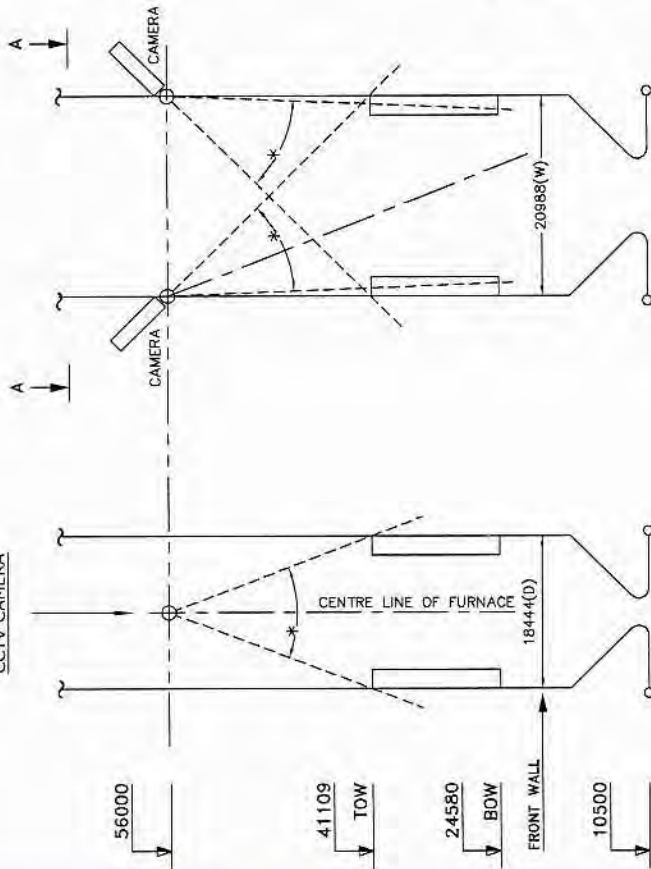
- PB1 - CAMERA ADVANCED PUSH BUTTON
- PB2 - CAMERA RETRACTED PUSH BUTTON
- PB3 - LOCAL MODE SELECTION PUSH BUTTON
- PB4 - REMOTE MODE SELECTION PUSH BUTTON
- PB5 - FAULT RESET PUSH BUTTON
- LR1 - CAMERA ADVANCED INDICATION
- LR2 - CAMERA RETRACTED INDICATION
- LR3 - LOCAL MODE SELECTION INDICATION
- LR4 - REMOTE MODE SELECTION INDICATION
- LR5 - CAMERA FAULT INDICATION

NOTES

1. ALL CONTROL CABLES WILL BE IN BHEL SCOPE OF SUPPLY
2. FACILITY OF ZOOMING & IRIS SHALL BE AVAILABLE FROM COMMON CONTROL ROOM (CCR)

3-97-596-22423
DRAWING NO

LOCATION OF
CCTV CAMERA



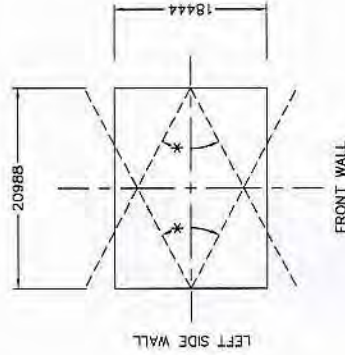
LEFT SIDE WALL

(SIMILARLY FOR RIGHT SIDE WALL)

FRONT SIDE WALL

NOTES

1. * ANGLE OF ERECTION & VIEWING SHOULD BE INDICATED BY THE VENDOR.
2. THIS DRG. IS DRAWN NOT TO SCALE AND HENCE SHOULD NOT BE DIRECTLY USED FOR THE PURPOSE OF ANGLE CALCULATION.
3. TYPE OF BOILER : CORNER FIRED, BALANCED DRAFT, ONCE THROUGH SUPER CRITICAL
4. TOW : TOP OF WINDBOX. BOW : BOTTOM OF WINDBOX
5. TWO CCTV CAMERAS ARE TO BE FIXED, ONE AT LEFT WALL OF FURNACE, ONE AT RIGHT WALL OF FURNACE. (THE OTHER TWO CAMERAS WILL BE KEPT AS SPARE)



FRONT WALL

SECTION - AA

CAUTION: The information on this document is the property of BHARAT HEAVY ELECTRICALS LTD. It must not be used directly or indirectly in any way that may be detrimental to the interest of the company.



OWNER / PROJECT :

ORISSA POWER GENERATION CORPORATION LIMITED
IB THERMAL POWER STATION, BANHARPALI
2 x 660 MW, UNIT - 3 & 4, Customer No. 1713 & 1714



CONSULTANT :

DEVELOPMENT CONSULTANTS PRIVATE LIMITED (DCPL)

DRN	NAME	SIGNATURE	DATE	NO OF VAR
CHO	K. B. G. J.	[Signature]	05-12-14	—
APPD	A.K. Panda		08-06-15	—
			08-06-15	—
			ITEM NO	NO OF ITEMS
			REF TO ASSY / OLD DWG	—

DEPT.-C & I	SCALE	WEIGHT (kg)	CARD CODE	REV
CODE - 392	N/T		U 01	00
TITLE			DRAWING NO :	
LOCATION DRAWING FOR FURNACE CCTV CAMERA			3-97-596-22423	
			Sheet 01 of 01	

REV	DATE	ALTERED :
ZONE		CHD. / APPD. :



429-024

PURCHASE / MM / FB SUB DELIVERY - ENQUIRY - DEVIATION

Page

OF

SCHEDULE OF DEVIATION TO
SUB - DELIVERY ENQUIRY No.

DATE

DESCRIPTION			
SPECIFICATION		DRG. No.	
QUALITY PLAN			
DOCUMENT REFERENCE	BHEL ENQ. CALLED FOR	FIRM'S ALTERNATE OFFER	

CERTIFIED THAT OTHER THAN THE ABOVE DEVIATIONS, WE ARE ACCEPTING ALL THE OTHER SPECIFICATIONS AND REQUIREMENTS IN FULL TO YOUR ENQUIRY

STATION :

DATE :

SIGNATURE OF FIRM'S REPRESENTATIVE

FIRM SEAL

- NOTE: 1. Deviations should be taken only in the extreme case.
2. If necessary, use additional sheets with page control number.

**BHARAT HEAVY ELECTRICALS LIMITED
TIRUCHIRAPPALLI**

**CONTROLS AND INSTRUMENTATION / FB
QUALITY ASSURANCE**

**STANDARD PACKING PROCEDURE
FOR
ALL INSTRUMENTS AND MISCELLENEOUS ITEMS
(ELECTRICAL, ELECTRONIC AND PNEUMATIC)**

Rev	Date	Prepared	Checked	Approved	Revision History
00	01.01.96	Sd/-	Sd/-	Sd/-	Initial History
01	28.03.02	A.J.OMPRAKASH Sd/-	R.VARADARAJAN Sd/-	G.MATHIYALAGAN Sd/-	Department name changed
02	26.02.07	RM.VAIRAVAN <i>[Signature]</i>	N.SRIDHAR <i>[Signature]</i>	S.SOMASUNDARAM <i>[Signature]</i>	Revised after discussion with Shipping Dept.

1.0 SCOPE

- 1.1 This procedure gives minimum guidelines to be complied with for packing of Electrical, Electronics and Instrumentation panels. This packing shall be suitable for different handling operations and for the adverse conditions during transportation and during indoor / outdoor storage for periods more than one year.

2.0 WOOD SPECIFICATION FOR PACKING

- 2.1 Rubber wood as per manufacturer standard.
2.2 Silver Oak as per procedure PR:CHEM:017 or as per relevant International Standards.

3.0 PACKING

- 3.1 For Inland packing, rubber wood and export packing Silver Oak wood shall be used. The wood used shall be seasoned and treated. It shall be free from knots, etc. and any kind of decay caused by insects and fungus.
- 3.2 The required wood case for the equipment to be packed shall be made out of individual planks of single length and no joint is permissible. Using such planks, the required wood case for the panel shall be made,
- 3.3 Sufficient number horizontal, vertical and diagonal planks (dimension depending upon case size) shall be used for binding and strengthening. Runners have to be provided with metallic sling plates for handling.
- 3.4 The instrument or the items has to be individually packed with a polythene cover and shall be kept inside a moulded thermo coal or carton box. The box shall be filled with suitable material like jute, coir, thermo coal, etc.
- 3.5 The original packing material shall be used for the following items, wherever required.
Personal computer (PC), Monitor, Keyboard, Transmitter, Switches, Gauges, Analyzers, CCTV system, Electronic items.
- 3.6 On all sides of the inner case, black polythene sheet shall be nailed.
- 3.7 The gap between job and the box shall be filled with suitable material like jute, coir, thermo coal, etc.
- 3.8 The packing of the cable by vendors shall be relevant Indian Standards.
- 3.9 Each case must have sufficient quantity of silica gel, packed in cotton cloth bags, shall be kept at different places as required.
The bags used shall have the following information marked on it.
Silica Gel activator type:
Blue: Active
Rose: Reduced active
White: No activity. To be replaced with fresh Silica gel.

4.0 MARKING

- 4.1 After completing the packing, Stencil marking, as per dispatch instructions and symbol marking as per Annexure – I shall be made. Please ensure the box is stenciled with "FRAGILE ITEM", "HANDLE WITH CARE"

5.0 PACKING SLIP

- 5.1 A copy of the packing slip, kept in a polythene cover shall be kept inside the box. Another copy of the packing slip, kept in a polythene cover shall be kept out side the box and covered with a metallic plate to the case.

6.0 CAUTION

Do not pack any other Mechanical items with this case.

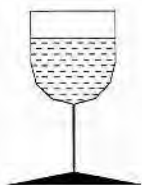
7.0 GENERAL

- 7.1 These packing procedures are the minimum requirements in addition to the standard instructions mentioned in the Purchase Order and Specification.
- 7.2 Deviation to meet the packing procedure requirements / non-clarity in packing approach in any quotation will be liable for rejection of offer.

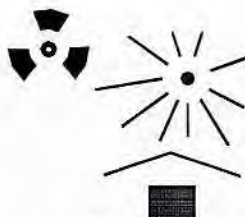
ANNEXURE - 1

TO

PROCEDURE NO:CI:QAC:PR:02/00 ; PR:03/00 ; PR:04/00



FRAGILE, HANDLE WITH CARE



PROTECT FROM HEAT AND RADIOACTIVE SOURCES



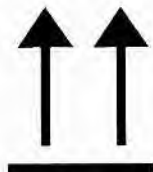
USE NO HOOKS

NOTE: The design of heavy goods packages cannot always resist top lifting by grabhooks.



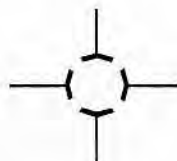
KEEP DRY

NOTE: Not all cases have waterproof internal liners; plywood used in the construction may not have a waterproof glue-line.



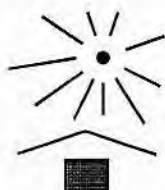
THIS WAY UP

NOTE: Certain designs of small cases make it difficult to distinguish top from bottom.



CENTRE OF GRAVITY

NOTE: This should be stencilled as a minimum on the two longest case sides (this information will normally be supplied by the manufacturer of the item(s) packed).



KEEP AWAY FROM HEAT

... kg max



STACKING LIMITATION



INTERNATIONAL "SLING HERE" SYMBOL

NOTE: The maximum load in kilograms should be marked above the arrow.

ANNEXURE X
Micro Small and Medium Enterprises (MSE) – Clause for NIT

In line with Gazette notification issued by Ministry of Micro Small and medium enterprises on MSE suppliers, the following special provisions shall be applicable.

20% of the tendered quantity is earmarked for MSE suppliers in this tender.

Out of the 20% tendered quantity reserved for MSE suppliers, 4% shall be earmarked for procurement from MSE owned by SC / ST entrepreneurs.

In case MSE vendor participating in the tender quotes within the price band of L1 + 15%, they will be allowed to supply the portion of the requirement subject to acceptance of L1 price by MSE vendor. In case of more than one such MSE, the supply shall be shared proportionately.

In case of tender items is not-splitable or non-dividable etc., MSE quoting price within the price band L1+15% may be awarded for full/complete supply of total tendered value to MSE

MSE suppliers can avail the intended benefits only if they submit along with the offer, attested copies of either

1. EM II certificate having deemed validity (two years from the date of issue of acknowledgement in EM II) or
2. Valid NSIC certificate or EM II certificate along with CA certificate (Format enclosed) applicable for the year, certifying quantum of investment in plant and machinery within the permissible limits as per the act for relevant status (MICRO or SMALL) where the deemed validity of EM II is over.

Date to be reckoned for determining the deemed validity will be the last date of technical bid submission (Part 1 in case of two part bid).

Non submission of such documents will lead to consideration of their bid at par with other bidders and MSE status of such suppliers shall be shifted to NON MSE suppliers till the supplier submit this documents.

Documents should be notarized or attested by a Gazetted officer.

Definitions of MSEs owned by SC/ST is under:

- ***In case of proprietorship firm, proprietor must be SC/ST.***
- ***In case of partnership firm, the SC/ST partners must be holding at least 51% shares in the unit.***
- ***In case of private limited companies, at least 51% share must be held by SC/ST promoters.***

Authorised Offices to Issue SC/ST certificate.

The caste/Tribe/Community certificate issued by the following authorities in the prescribed form for SCs/STs can be considered.

- District Magistrate/Additional District Magistrate/Collector/Deputy commissioner/Additional Deputy commissioner/Deputy collector/1st class stipendary magistrate/Sub divisional Magistrate/Taulka Magistrate/Executive magistrate/Extra Assistant commissioner.
- Chief Presidency magistrate/Additional chief presidency magistrate/Presidency magistrate.
- Revenue Officer not below the rank of thasildar.
- Sub-Divisional officer of the area where the individual and / or his family normally resides.

To avail the benefits of MSE under SC/ST category, the related documents as stated above should be submitted along with tender documents.