



BHEL
Tenders

Government eProcurement System

Tender Details

Date : 04-Sep-2024 03:28 PM

Print

Basic Details

Organisation Chain	Bharat Heavy Electricals Limited HERP - Varanasi Purchase		
Tender Reference Number	E-304-24-0227-61-3		
Tender ID	2024_BHEL_39629_1	Withdrawal Allowed	Yes
Tender Type	Open Tender	Form of contract	Buy
Tender Category	Goods	No. of Covers	2
General Technical Evaluation Allowed	No	ItemWise Technical Evaluation Allowed	Yes
Payment Mode	Not Applicable	Is Multi Currency Allowed For BOQ	No
Is Multi Currency Allowed For Fee	No	Allow Two Stage Bidding	No

Cover Details, No. Of Covers - 2

Cover No	Cover	Document Type	Description
1	Fee/PreQual/Technical	.pdf	TECHNO COMMERCIAL BID
2	Finance	.xls	PRICE BID

Tender Fee Details, [Total Fee in ₹ * - 0.00]

Tender Fee in ₹	0.00		
Fee Payable To	Nil	Fee Payable At	Nil
Tender Fee Exemption Allowed	No		

EMD Fee Details

EMD Amount in ₹	0.00	EMD Exemption Allowed	No
EMD Fee Type	fixed	EMD Percentage	NA
EMD Payable To	Nil	EMD Payable At	Nil

[Click to view modification history](#)

Work /Item(s)

Title	SEPARATOR TOP				
Work Description	SEPARATOR TOP				
Pre Qualification Details	Please refer Tender documents.				
Independent External Monitor/Remarks	NA				
Show Tender Value in Public Domain	No				
Tender Value in ₹	1,00,00,000	Product Category	Machinery and Machining Tools	Sub category	NA
Contract Type	Tender	Bid Validity(Days)	90	Period Of Work(Days)	120
Location	BHEL VARANASI	Pincode	221003	Pre Bid Meeting Place	NA
Pre Bid Meeting Address	NA	Pre Bid Meeting Date	NA	Bid Opening Place	BHEL VARANASI
Should Allow NDA Tender	No	Allow Preferential Bidder	No		

Critical Dates

Publish Date	04-Sep-2024 05:00 PM	Bid Opening Date	16-Sep-2024 04:00 PM
Document Download / Sale Start Date	04-Sep-2024 05:00 PM	Document Download / Sale End Date	16-Sep-2024 01:00 PM
Clarification Start Date	NA	Clarification End Date	NA
Bid Submission Start Date	04-Sep-2024 05:00 PM	Bid Submission End Date	16-Sep-2024 01:00 PM

Tender Documents

NIT Document	S.No	Document Name	Description	Document Size (in KB)	
	1	Tendernotice_1.pdf	TECHNO COMMERCIAL BID	5140.03	
Work Item Documents	S.No	Document Type	Document Name	Description	Document Size (in KB)
	1	Tender Documents	NICENQUIRY.pdf	TECHNO COMMERCIAL BID	5124.52
	2	BOQ	BOQ_41304.xls	PRICE BID	347.00

Bid Openers List

S.No	Bid Opener Login Id	Bid Opener Name	Certificate Name
1.	abhishek@bhel.in	ABHISHEK GUPTA	ABHISHEK
2.	kumarpraveen@bhel.in	PRAVEEN KUMAR	PRAVEEN KUMAR
3.	sushilku@bhel.in	Sushil Kumar	SUSHIL KUMAR
4.	amaresh@bhel.in	AMARESH YADAV	Amaresh Yadav

GeMARPTS Details

Reason for non availability of GeMARPTS ID	Any other reason
Remarks	ITEM NOT AVAILABLE ON GEM PORTAL
Document Name	GARPTS.pdf
Document Size (in KB)	40.56

Tender Properties

Auto Tendering Process allowed	No	Show Technical bid status	Yes
Show Finance bid status	Yes	Stage to disclose Bid Details in Public Domain	Technical Bid Opening
BoQ Comparative Chart model	Normal	BoQ Compative chart decimal places	3
BoQ Comparative Chart Rank Type	L	Form Based BoQ	No

TIA Undertaking

S.No	Undertaking to Order	Tender complying with Order	Reason for non compliance of Order
1	PPP-MII Order 2017	Agree	OK
2	MSEs Order 2012	Agree	OK

Tender Inviting Authority

Name	ABHISHEK
Address	BHEL VARANASI

Tender Creator Details

Created By	ABHISHEK GUPTA
Designation	Sr Engineer
Created Date	04-Sep-2024 03:18 PM



Bharat Heavy Electricals Limited

Heavy Equipment Repair Plant

Tarna Shivpur Varanasi-221003

website: <https://herp.bhel.com>

Enquiry Number : **E-304-24-0227-61-3** Date : **04/Sep/2024**

Enquiry For Material :-

Sl No	Material Description	Material Code	Quantity	Unit
1	SEPARATOR TOP (HY-221.00) - FABRICATED AND FULLY MACHINED ITEM AS PER DRG. 16137600023/17 WITH MATL AS PER SPECN. AA10119/15	RV1019923776	24.0	NOS.

Remarks

(A) SUPPLY CONDITION :

1. ITEM TO BE SUPPLIED AT HERP STORES.
2. PRE DESPATCH INSPECTION SHALL BE CARRIED OUT AS PER QUALITY PLAN NO. RV/FAB&MCD/12 REV-03 AT PARTY'S WORKS BY BHEL REPRESENTATIVE.

(B) TECHNICAL DELIVERY CONDITION :

1. MATERIAL SHOULD BE AS PER SPECIFICATION AA10119/15.
2. DIMENSIONS & TOLERANCES TO BE MAINTAINED AS PER DRAWING.
3. ALL WELDS SHOULD BE FREE FROM ALL DEFECTS.
4. DIMENSIONS REPORT IS REQUIRED.
5. DP OF THE WELD JOINTS TO BE DONE AS PER QUALITY PLAN. ALL WELD JOINTS SHOULD BE FREE FROM ALL DEFECTS.
6. AFTER FABRICATION, STRESS RELIEVING IS TO BE DONE AS PER SR CYCLE MENTIONED IN QUALITY PLAN.
7. ALL PLATES ABOVE 25 MM THICK SHOULD BE OK IN UT AS PER SPECN. AA0850120 AS MENTIONED IN SPECN. AA10119.
8. ALL OTHER TECH. NOTES/ REQUIREMENTS OF THE DRG./PART DRGS./QAP SHOULD BE FOLLOWED STRICTLY.

(C) TEST CERTIFICATE : REQUIRED FOR

- 1) CHEMICAL AND MECHANICAL PROPERTIES FOR RAW MATERIAL.
- 2) TEST REPORT OF DP OF WELD JOINTS
- 3) H.T.CHART
- 4) ANY OTHER T.C. AS MENTIONED IN QP .

(D) GUARANTEE CERTIFICATE : REQUIRED FOR 24 MONTHS AGAINST ANY MANUFACTURING DEFECTS FROM THE DATE OF RECEIPT AT BHEL HERP.

(E) PACKING INSTRUCTIONS : ITEM SHOULD BE PAINTED WITH ANTI-CORROSIVE RED OXIDE PRIMER PAINT TO AVOID RUSTING. ALL THE MACHINED SURFACES SHOULD BE PROTECTED WITH TRP BLACK PAINT. ITEM SHOULD BE PROPERLY STACKED IN LOOSE CONDITION AND WELD STUDS SHOULD BE PROPERLY PROTECTED BY POLYSLEEVE TO AVOID ANY DAMAGE DURING TRANSIT.

(F) DELIVERY REQD WITHIN 04 MONTHS FROM THE DATE OF PO.HOWEVER EARLY DELIVERY IS ACCEPTABLE.

(G) ALL OTHER TERMS AND CONDITIONS SHALL BE AS PER THE ATTACHED GTC (PARTY HAS TO STRICTLY ADHERE TO THESE TERMS & CONDITIONS).

(H) CONDITION FOR QUANTITY SPLIT:

(i) SPLITTING WILL BE DONE WITH RESPECT TO TOTAL QUANTITY OF THE ITEM.

(ii) BHEL WILL SPLIT THE TOTAL QTY. BETWEEN TWO (02) VENDORS IN RATIO OF 60:40.

(iii) IN NO CASE, THE HIGHEST QUOTED BIDDER (H-1) WILL BE GIVEN THE OPPORTUNITY OF THE QUANTITY SPLIT.

(iv) THE EQUATED L-1 PRICE WOULD BE COUNTER OFFERED TO THE NEXT HIGHER BIDDER IN ORDER OF THEIR RANKING

AND SPLITTED QTY. WOULD BE GIVEN TO THE BIDDER WHO ACCEPTS THE EQUATED L-1 PRICE.

(v) DEPENDING UPON THE SITUATION AND IN CASE, THE DISTRIBUTION IS DONE BETWEEN TWO OR SINGLE BIDDER, THEN THE FOLLOWING RATIO WILL BE FOLLOWED.

(1)FOR TWO VENDORS, RATIO WILL BE 60:40.

(2)FOR SINGLE VENDOR, FULL QTY. TO L-1 VENDOR ONLY.

(vi) AT ANY POINT OF TIME OR IF THE PERFORMANCE OF ANY VENDOR IS FOUND UNSATISFACTORY, THE ABOVE DISTRIBUTION RATIO MAY BE CANCELLED OR CHANGED BY BHEL AND ITEMS MAY BE PROCURED FROM PERFORMING VENDORS.

PQR for Critical Regular Direct Mil items

PQR Ref No: PQR/24-25/ Critical Regular Direct Mil items	Date: 23.08.2024
Rev No: 00	Review Date: 23.08.2024
PQR Revision Date:	

Sl. No.	BHEL Terms	Supplier's Compliance YES/NO
1	Offers are accepted from:	
1.a	Only Manufacturer's Offers shall be considered for the Tender Enquiry.	
2	Supplier shall give list of In-House Facilities:	
2.a	Vendor shall have in-House necessary Manufacturing facilities required for manufacturing and supply of item/s as per drawing/specification.	
2.b	BHEL reserves right to visit the Works of the Manufacturer for Physical verification of the Manufacturing facilities (as declared by them) and assessment of their Quality systems during Technical Evaluation of the Offers.	
2.c	Bidders shall submit detailed Manufacturing process Plan along with the Technical Offer.	
3	Experience:	
3.a	Bidders shall submit the necessary documents proving their Experience in Supplying same or similar items to any Power Plant equipment Manufacturer (worldwide or within India) in last three years from the date of Enquiry. Documentary evidences to be submitted in the form of Customer's Purchase Order copies / Material Acceptance Report and item drawings/specifications. Documentary evidences submitted shall strictly meet all the technical requirement of the NIT.	
3.b	BHEL reserves right to verify the details from the Bidder's customers based on Documents submitted as a part of past experience. BHEL may ask for other relevant documents in line with above to review the capacity and capability of vendor with respect to enquired items.	
4	Financial Capability:	
4.a	Turn Over:- Turn over of Non-MSe vendors should be 85 LACS of tender value. Relaxation for MSe vendors/ Notified Start-Ups on turn over will be as per MSME guidelines. UDYAM Certificate required for Mse status.	
4.b	Applicable only for Non-Mse vendors: Audited balance Sheet and Profit and Loss account Statement of last three consecutive year (with UDIN) required along with part-1 bid. Or A CA Certified Consolidated summary (with UDIN) for last 3 consecutive years having annual turn over and Profit and Loss to be enclosed along with Part-1 bid . For Vendors having Turn over less than 1 crore in any of the financial year, CA certified Financial Turn over and Profit Loss (with UDIN) may be accepted for that year only.	
Note-1: Non Submission of the above requested documents/non compliance to the above points will result in rejection of the Offers without further Notice/Intimation to the Bidder and no correspondence will be entertained at later date.		
Note-2: "Similar items" means items having same/similar manufacturing process,similar nature of use of item as that of enquired items etc.		

**GENERAL COMMERCIAL TERMS & CONDITIONS OF ENQUIRY
(FOR INDIAN VENDORS)**

Amendment- 25
ANNEXURE-A

ITEM DESCRIPTION:

ENQUIRY NO:

Sl No	BHEL STANDARD TERMS & CONDITIONS	Confirmation of supplier (Yes/No)
1	<p>A) OFFER MUST BE SUBMITTED IN TWO PART BID SYSTEM NAMELY TECHNO-COMMERCIAL BID & PRICE BID FOR THE ITEM AS PER ENQUIRY IN SEPARATE SEALED COVERS: (I) TECHNO – COMMERCIAL BID & (II) PRICE BID SHOULD BE CLEARLY SUPERSCRIBED THE ENQUIRY NO. AND DUE DATE ON THE ENVELOPES.</p> <p>(B) UN-PRICED OFFER WITH TECHNICAL BID IS REQUIRED TO BE FURNISHED BY THE VENDOR. TECHNICAL OFFER SHOULD CLEARLY REFLECT AT LEAST OUR MATERIAL CODE, ITEM DESCRIPTION & QUANTITY.</p> <p>(C) THE DIFFERENCE BETWEEN “UN-PRICED OFFER” AND “PRICED OFFER” SHOULD BE ONLY THE PRICES WHEREVER APPLICABLE. THE RATES AND AMOUNT SHOULD BE CLEARLY WRITTEN IN FIGURES AND WORDS BOTH WITHOUT ANY CUTTING / OVERWRITING.</p> <p>(D) IMPORTANT POINT FOR VENDOR WHO HAVE NOT SUBMITTED THE SRF (SUPPLIER REGISTRATION FORM) SO FAR: THE VENDORS, WHO HAVE NOT SUBMITTED THE SRF SO FAR, MUST SUBMIT THE SAME ALONG WITH PART- 1 BID. THE SRF TO BE DOWNLOADED FROM WWW.BHEL.COM OR https://herp.bhel.com .</p>	
2	BID SHOULD BE FREE FROM CORRECTION, OVERWRITING, USING CORRECTIVE FLUID, ETC. ANY INTERLINEATION , CUTTING , ERASURE OR OVERWRITING SHALL BE VALID ONLY IF THEY ARE ATTESTED UNDER FULL SIGNATURE(S) OF PERSON(S) SIGNING THE BID ELSE BID SHALL BE LIABLE FOR REJECTION .	
3	YOUR TECHNO COMMERCIAL BID SHOULD MENTION THAT PRICE BID HAS BEEN SENT IN A SEPARATE ENVELOPE GIVING ITS REFERENCE.	
4	VENDOR TO ENSURE THAT ITEM & QUANTITY MENTIONED IN THE OFFERS ARE EXACTLY SAME AS PER ENQUIRY. IF ANY DEVIATION IS THERE PARTY MUST MENTION SPECIFIC HEREWITH OTHERWISE BHEL SHALL CONSIDER THAT ITEM & QUANTITY AS REQUIRED IN ENQUIRY.	
5	PLEASE MAKE SURE THAT THERE IS NO DISCREPANCY IN BETWEEN ACCEPTED TERMS & CONDITIONS MENTIONED IN THE CHECK LIST AND QUOTATION SUBMITTED BY VENDOR AND IF FOUND SO THEN THE TERMS & CONDITIONS WHICH ARE BENEFICIAL TO BHEL WOULD ONLY BE CONSIDERED.	
6	THE TENDER RECEIVED AFTER 14:00 HRS ON THE DUE DATE WILL NOT BE CONSIDERED.	
7	PART-I CONTAINING THE TECHNO-COMMERCIAL BID WILL BE OPENED ON THE DATE AND TIME SPECIFIED IN THE ENQUIRY, IN THE PRESENCE OF THOSE TENDERERS WHO WISH TO ATTEND. PART-II i.e., PRICE BID WILL BE OPENED ONLY OF THOSE BIDDERS WHO ARE FOUND TECHNO-COMMERCIALLY SUITABLE AFTER SCRUTINY OF THEIR PART-I OFFERS.	
8	NO REVISED OFFERS WILL BE ACCEPTED UNLESS ASKED BY BHEL AFTER OPENING OF PART-1 BID IN ANY CASE.	
9	THE RATE OF GST SHOULD BE CLEARLY MENTIONED IN THE OFFER.	
10	VALIDITY OF OFFER SHOULD BE MINIMUM 90 DAYS FROM THE DATE OF TECHNO - COMMERCIAL BID OPENING OR 60 DAYS FROM THE REVERSE AUCTION DATE.	
11	BHEL RESERVES THE RIGHT TO REJECT THE OFFER, WHICH IS HAVING DEVIATIONS TO THE TERMS AND CONDITIONS GIVEN IN THE TENDER ENQUIRY.	
12	PRICING TERMS: PRICES ONCE QUOTED SHALL REMAIN FIRM WITHIN THE VALIDITY OR ANY EXTENSION THEREOF FOR PLACEMENT OF ORDER, TILL COMPLETE EXECUTION OF THE ORDER, WITHOUT ANY ESCALATION/INCREASE FOR ANY REASON, WHATSOEVER, UNLESS SPECIFICALLY PROVIDED FOR IN THE ENQUIRY & PO. IN CASE OF FOREIGN VENDORS, THE QUOTED PRICE SHALL BE TAKEN AS INCLUSIVE OF THIRD PARTY INSPECTION AND TESTING CHARGES AS CALLED FOR IN THE NIT.	
13	BID EVALUATION: UNLESS SPECIFIED IN THE TENDER, VENDOR MUST NOTE THAT BHEL WILL ARRIVE THE L1 STATUS FOR EACH ITEM ON LANDED COST BASIS. ACCORDINGLY, ORDER SHALL BE PLACED ON LOWEST BIDDER ON INDIVIDUAL ITEM BASIS ONLY, UNLESS BHEL ASK FOR TERMS OTHER THAN THIS ON EXCEPTION BASIS. IN THE COURSE OF EVALUATION, IF MORE THAN ONE BIDDER HAPPENS TO OCCUPY L-1 STATUS, EFFECTIVE L-1 WILL BE DECIDED BY SOLICITING DISCOUNTS FROM THE RESPECTIVE L-1 BIDDERS. IN CASE MORE THAN ONE BIDDERS HAPPENS TO OCCUPY THE L-1 STATUS EVEN AFTER SOLICITING DISCOUNT, THE L-1 BIDDER SHALL BE DECIDED BY A TOSS/DRAW OF LOTS, IN THE PRESENCE OF THE RESPECTIVE BIDDER(S) OR THEIR REPRESENTATIVE(S). RANKING WILL BE DONE ACCORDINGLY. BHEL'S DECISION IN SUCH SITUATION SHALL BE FINAL AND BINDING.	
14	TERMS OF DELIVERY: I. FOR INDIGENOUS SUPPLIERS: THE TERMS OF DELIVERY SHOULD BE QUOTED ON F.O.R. DESTINATION (BHEL HERP STORES VARANASI) BASIS ONLY (i.e. FREIGHT & INSURANCE ON VENDOR'S ACCOUNT ONLY). IF ANY BIDDER STILL QUOTES OTHER DELIVERY TERM IN PLACE OF BHEL HERP STORES, THEIR OFFER MAY NOT BE CONSIDERED FOR FURTHER PROCESSING. IT MUST BE SPECIFICALLY NOTED.	
15	IF ANY INDIAN SUPPLIERS ARRANGE SUPPLY FROM FOREIGN PRINCIPLES/WORKS, TERMS OF DELIVERY SHOULD BE QUOTED ON CIF JNPT MUMBAI (INDIA) SEA PORT BASIS ONLY (i.e. FREIGHT & INSURANCE ON VENDOR'S ACCOUNT UPTO JNPT MUMBAI (INDIA) SEA PORT) OR CFR MUMBAI AIRPORT. HOWEVER FREIGHT CHARGES AS PER BHEL TRANSPORT CONTRACT FROM JNPT MUMBAI SEAPORT/MUMBAI AIRPORT TO BHEL VARANASI FOR EACH ITEM WILL BE LOADED AT THE TIME OF TOTAL LANDED COST CALCULATION.	
16	INSURANCE CHARGES SHALL BE TO VENDOR'S ACCOUNT ONLY IF PRICE QUOTED ON BHEL HERP STORES BASIS. IN CASE PRICE QUOTED IS ON CIF JNPT MUMBAI BASIS/ CFR MUMBAI AIRPORT BASIS, INSURANCE UP TO CIF JNPT MUMBAI/ MUMBAI AIRPORT SHALL BE IN VENDOR ACCOUNT.	
17	<p>PAYMENT TERMS:</p> <p>I.FOR MSEs VENDORS: 100% AGAINST SRV WITHIN 45 DAYS THROUGH EFT (ELECTRONIC FUND TRANSFER) FROM THE DATE OF RECEIPT OF MATERIAL (DATE OF SRV) AT BHEL HERP VARANASI STORES AS PER PO.</p> <p>II.FOR MEDIUM ENTERPRISES VENDORS: 100% AGAINST SRV WITHIN 60 DAYS THROUGH EFT (ELECTRONIC FUND TRANSFER) FROM THE DATE OF RECEIPT OF MATERIAL (DATE OF SRV) AT BHEL HERP VARANASI STORES AS PER PO.</p> <p>III. FOR NON- MSME: 100% AGAINST SRV WITHIN 90 DAYS THROUGH EFT (ELECTRONIC FUND TRANSFER) FROM THE DATE OF RECEIPT OF MATERIAL (DATE OF SRV) AT BHEL HERP VARANASI STORES AS PER PO.</p> <p>IV.BHEL HERP WILL MAKE PAYMENTS IN TWO PARTS: -</p> <p>PART-I: BASIC INVOICE VALUE AND ALL OTHER CHARGES (EXCEPT GST AMOUNT) WILL BE PAID AS PER P.O. PAYMENT TERMS.</p> <p>PART-II: GST PORTION OF INVOICE VALUE WILL BE PAID ONLY AFTER FULFILLING FOLLOWING CONDITIONS:</p> <p>(A) PAYMENT OF GST AMOUNT INTO GOVT. ACCOUNT BY SUPPLIER AGAINST INVOICE RAISED TO BHEL.</p> <p>(B) FILING OF GST RETURN</p> <p>(C) DISPLAY OF GST CREDIT AGAINST BHEL GSTIN NO.09AAACB4146P2ZC IN GSTR-2B ON GSTN PORTAL.</p> <p>Note: 1. PAYMENT WILL BE MADE AFTER ACCEPTANCE OF MATERIAL.</p> <p>2. ADVANCE PAYMENT IS NOT ACCEPTABLE BY BHEL HERP VARANASI IN ANY CASE.</p> <p>3. IF ANY SUPPLIER FALLS UNDER “NON MSE” OR “NON MEDIUM” CATEGORY, THEIR PAYMENT TERM WILL BE CONSIDERED AS NON MSME SUPPLIER PAYMENT WITHOUT ANY INTIMATION.</p>	
18	LOADING OF PAYMENT TERM: IN CASE OF DEVIATION, LOADING OF INTEREST RATE @SBI MCLR RATE + 6% (AS ON PART-1 OPENING DATE) SHALL BE LOADED WHILE ARRIVING AT LANDED COST TO BHEL.	
19	LIQUIDATED DAMAGES/ LATE DELIVERY (LD) PENALTY CLAUSE: SUBJECT TO FORCE MAJEURE CONDITIONS, FAILURE TO SUPPLY WITHIN PURCHASE ORDER DELIVERY SCHEDULE WILL MAKE THE SUPPLIER LIABLE TO AN UNCONDITIONAL PENALTY OF 0.5 % PER WEEK OR PART THEREOF SUBJECT TO THE MAXIMUM OF 10% OF THE UNDELIVERED PURCHASE ORDER VALUE EXCLUDING TAXES & DUTIES. NO GRACE PERIOD SHALL BE GIVEN.	
20	<p>LOADING OF LIQUIDATED DAMAGES (LD): DEVIATION TO ABOVE STANDARD PENALTY CLAUSE, MAXIMUM LOADING OF 10% (IN CASE OF NON ACCEPTANCE OF LD CLAUSE) OR PART THEREOF (IN CASE OF PART ACCEPTANCE OF LD) SHALL BE LOADED WHILE ARRIVING LANDED COST TO BHEL.</p> <p>LOADING OF DELIVERY TERM: FURTHER IF DEVIATION IS FOUND IN THE ACCEPTED DELIVERY TERM AS WELL AS ACCEPTED PENALTY TERM, SUITABLE LOADING BASED ON TRANSPORTATION TIME TO BE TAKEN SHALL BE LOADED WHILE ARRIVING LANDED COST TO BHEL HERP STORES WHICH MAY BE AS BELOW:</p> <p>(i) 1% OF THE BASIC COST FOR INDIAN SUPPLIERS,</p>	

**GENERAL COMMERCIAL TERMS & CONDITIONS OF ENQUIRY
(FOR INDIAN VENDORS)**

**Amendment- 25
ANNEXURE-A**

21	DELIVERY PERIOD: VENDOR SHOULD STRICTLY QUOTE THE DELIVERY PERIOD AS MENTIONED IN NIT.	
22	IF ANY VENDOR DOES NOT SUPPLY THE ITEM WITHIN THE PURCHASE ORDER DELIVERY PERIOD, BHEL MAY/MAY NOT ACCEPT THE SUPPLY AT ITS SOLE DISCRETION.	
23	<p>BANK GUARANTEE: THE COST OF BHEL FREE ISSUE MATERIALS PER SET/PER ASSEMBLY AND TOTAL COST OF FIM FOR THE ENQUIRY ARE MENTIONED IN NIT. IN THIS REGARD:</p> <p>1 (a). PARTY WILL HAVE TO SUBMIT EQUAL AMOUNT OF SECURITY DEPOSIT (IN THE FORM OF 10% BG/FDR/DD/CHEQUE/BANK TRANSFER AND 90% INDEMNITY BOND) TOWARDS THE COST OF BHEL MATERIALS TO BE ISSUED TO THEM BEFORE THE ISSUE OF BHEL MATERIALS TO THEM. AT ANY POINT OF TIME, PROPORTIONATE SECURITY DEPOSIT OF TOTAL/CUMMULATIVE MATERIAL VALUE SHOULD BE MAINTAINED.</p> <p>(b) IN CASE OF TRIAL/DEVELOPMENTAL ORDER, PARTY WILL HAVE TO SUBMIT 30% BG/FDR/DD/CHEQUE/BANK TRANSFER AND 70% INDEMNITY BOND TOWARDS THE COST OF BHEL FIM.</p> <p>2. BHEL MAY ASK THE SUPPLIER FOR SUBMISSION OF FULL SECURITY DEPOSIT AMOUNT OR PART DEPENDING UPON THE AVAILABILITY OF FREE ISSUE MATERIALS AT OUR END.</p> <p>3. PARTY MUST HAVE TO SUBMIT THE SAME WITHIN 02 WEEK TIME FROM THE DATE OF WRITTEN INTIMATION BY BHEL WITHOUT FAIL OTHERWISE IT WOULD TREATED AS FAILURE OF HONOURING PO TERMS AND ACCORDINGLY BHEL MAY CANCEL THE PURCHASE ORDER AND INITIATE ALTERNATE PROCUREMENT ACTION AT SUPPLIER RISK & COST.</p> <p>4. IN CASE OF ABSENCE OF DESIRED SECURITY DEPOSIT AT BHEL END AND ALSO NON RESPONSE OF POINT NO. 03 AS ABOVE,</p> <p>I. BHEL MAY HOLD THE PENDING PAYMENTS OF SUPPLIER AVAILABLE AT BHEL ON THEIR CONSENT.</p> <p>II. IF NO PAYMENT IS PENDING AT BHEL END, ACTION FOR ALTERNATE PROCUREMENT ACTION MAY BE INITIATED.</p> <p>5. THE FORMAT OF BG AND IB SHALL BE PER ATTACHED ANNEXURE-BG/FIM AND IB-FIM RESPECTIVELY.</p>	
24	TRANSPORTATION CHARGES FOR SENDING BHEL FREE ISSUE MATERIALS (FIM) TO THE PARTY WORKS WILL BE BORNE BY BHEL ONLY. THE FREIGHT CHARGES FOR SENDING THE BHEL FIM FROM HERP STORES TO PARTY'S WORK FOR EACH ITEM WILL BE LOADED AS PER BHEL TRANSPORT CONTRACT AT THE TIME OF TOTAL LANDED COST CALCULATION. HOWEVER, VARANASI/LOCAL BASED VENDORS WILL LIFT THE FIM FROM BHEL STORES AND BORNE ITS TRANSPORTATION CHARGES.	
25	IF BHEL ISSUES FREE ISSUE MATERIALS TO THE SUPPLIER, IT MUST BE RETURNED WITHIN THE TIME LIMIT AS PRESCRIBED IN GST LAW (PRESENTLY 01 (ONE) YEAR FROM THE DATE OF FREE ISSUE DATE) TO COMPLY THE GST RULES. IF ANY VENDOR DOES NOT RETURN THE BHEL FREE ISSUE MATERIALS AS MENTIONED ABOVE, THE FINANCIAL IMPLICATION ON ACCOUNT OF THIS, IF ANY, SHALL BE RECOVERED FROM THE PARTY BILLS.	
26	<p>REVERSE AUCTION: BHEL SHALL BE RESORTING TO REVERSE AUCTION (RA) (GUIDELINES AS AVAILABLE ON WWW.BHEL.COM) FOR THIS TENDER. RA SHALL BE CONDUCTED AMONG ALL THE TECHNO-COMMERCIALLY QUALIFIED BIDDERS.</p> <p>PRICE BIDS OF ALL TECHNO-COMMERCIALLY QUALIFIED BIDDERS SHALL BE OPENED AND SAME SHALL BE CONSIDERED AS INITIAL BIDS OF BIDDERS IN RA. IN CASE ANY BIDDER(S) DO (ES) NOT PARTICIPATE IN ONLINE REVERSE AUCTION, THEIR SEALED ENVELOPE PRICE BID ALONG WITH APPLICABLE LOADING, IF ANY, SHALL BE CONSIDERED FOR RANKING.</p>	
27	IF ANY OF THE VENDORS DO NOT ACCEPT THE ABOVE POINT MENTIONED AT SL. NO. 26, THEIR OFFER MAY BE LIABLE FOR REJECTION WITHOUT INTIMATION.	
28	<p>RISK PURCHASE: IN CASE OF DELAY IN SUPPLIES/ DEFECTIVE SUPPLIES/NON EXECUTION OF PURCHASE ORDER ETC. (FOR DETAILS, REFER GUIDELINES FOR RISK PURCHASE), BHEL MAY CANCEL THE ORDER IN FULL OR PART THEREOF/ MAY ALSO MAKE THE PURCHASE OF SUCH MATERIALS FROM ELSEWHERE/ALTERNATIVE SOURCES AT THE RISK & COST OF SUPPLIER. BHEL MAY ALSO MANUFACTURE THE ITEM IN-HOUSE IN PART OR FULL DEPENDING UPON THE URGENCY OF THE ITEM.</p> <p>GUIDELINES FOR RISK PURCHASE IS AVAILABLE ON BHEL WEBSITE "https://herp.bhel.com" at "Notice". RESPECTIVE BIDDERS / SUPPLIERS MAY REFER THIS GUIDELINE BEFORE SUBMITTING THEIR OFFER AGAINST BHEL, HERP TENDER ENQUIRIES. IN CASE RISK PURCHASE IS APPLIED, BHEL SHALL TAKE ACTION AGAINST THE NON-PERFORMING AND/OR DEFAULTING SUPPLIERS/ CONTRACTORS IN LINE WITH THIS GUIDELINE ONLY.</p>	
29	<p>BHEL MAY SHORT CLOSE/CANCEL AN ORDER AT ANY TIME DURING THE CURRENCY OF THE CONTRACT/PO IRRESPECTIVE OF THE PO DELIVERY DATE, IF</p> <p>(I) THE WORK PROGRESS OF THE VENDOR IS POOR, OR</p> <p>(II) THE DELIVERY REQUIREMENT OF THE ITEM IS VERY CRITICAL & NOT BEING MET BY THE VENDOR ON WHICH ORDER HAS BEEN PLACED, OR</p> <p>(III) THERE IS NO RESPONSE FOR IMPROVEMENT IN DELIVERY AS PER BHEL REQUIREMENT,</p>	
30	THE OFFERS OF THE BIDDERS WHO ARE ON THE BANNED LIST AND ALSO THE OFFER OF THE BIDDERS, WHO ENGAGE THE SERVICES OF THE BANNED FIRMS, SHALL BE REJECTED. THE LIST OF BANNED FIRMS IS AVAILABLE ON BHEL WEB SITE www.bhel.com	
31	RESERVATION RIGHTS OF BHEL: – BHEL RESERVES THE RIGHT TO REJECT ANY OR ALL QUOTATIONS WITHOUT ASSIGNING ANY REASONS THEREOF. BHEL ALSO RESERVES THE RIGHT TO INCREASE OR DECREASE THE TENDERED QUANTITIES. VENDORS SHOULD BE PREPARED TO ACCEPT ORDER FOR REDUCED QUANTITIES WITHOUT ANY EXTRA CHARGES. VENDOR SHOULD ALSO BE PREPARED FOR GIVING DISCOUNT IN CASE OF INCREASE IN QUANTITY.	
32	NON-DISCLOSURE AGREEMENT: ALL DRAWINGS AND STANDARDS ARE PROPRIETARY OF BHEL. IT MUST NOT BE USED IN ANY WAY DETRIMENTAL TO THE INTEREST OF THE COMPANY. ALL SUPPLIERS SHALL FURNISH NDAS (NON-DISCLOSURE AGREEMENT) AGAINST USE OF DOCUMENTS FURNISHED BY BHEL TOWARDS UN-AUTHORIZED USE EXCEPT FOR THE PURPOSE IT HAS BEEN FURNISHED.	
33	<p>A. SETTLEMENT OF DISPUTES & ARBITRATION:</p> <p>I. ALL QUESTIONS/INTERPRETATIONS REGARDING SUBJECT MATTER OF THE CONTRACT SHALL BE DECIDED BY THE BHEL ON THE REQUEST OF THE VENDOR AND THE DECISION OF THE BHEL SHALL BE FINAL.</p> <p>II. IN CASE OF DISPUTE, STEPS SHALL BE TAKEN BY THE PARTIES TO THE CONTRACT TO SETTLE THE SAME THROUGH NEGOTIATIONS.</p> <p>III. IN CASE, DISPUTE IS NOT SETTLED IN NEGOTIATIONS, IT SHALL BE REFERRED TO CONCILIATOR APPOINTED BY THE COMPETENT AUTHORITY OF THE BHEL. <i>THE CONCILIATION PROCEEDINGS WITH RESPECT TO A DISPUTE AS DEFINED IN THE BHEL CONCILIATION SCHEME, 2018 AND SUBSEQUENT REVISIONS CAN BE INITIATED UNDER THE SCHEME AT ANY STAGE WHETHER BEFORE, DURING OR EVEN AFTER THE COMMENCEMENT OF ARBITRATION PROCEEDINGS OR LITIGATION BEFORE COURTS. THIS CONCILIATION SCHEME IS AVAILABLE ON OUR WEBSITES https://herp.bhel.com AND www.bhel.com .</i></p> <p>IV. IN CASE DISPUTE IS NOT SETTLED IN CONCILIATION PROCEEDINGS, THE SAME SHALL BE REFERRED TO ARBITRATION AS PER CORPORATE GUIDELINES OF THE BHEL AND THE ARBITRATION PROCEEDING SHALL BE CONDUCTED AS PER PROVISIONS OF THE ARBITRATION AND CONCILIATION ACT, 1996 READ WITH CORPORATE GUIDELINE AS AMENDED FROM TIME TO TIME.</p> <p>V. THE VENDOR SHALL CONTINUE TO PERFORM THE CONTRACT, PENDING SETTLEMENT OF DISPUTE(S).</p> <p>B. JURISDICTION: ALL DISPUTES OR DIFFERENCES ARISING OUT OF OR IN CONNECTIONS WITH THE CONTRACT SHALL BE SUBJECT TO THE EXCLUSIVE JURISDICTION OF THE COURT AT VARANASI (U.P.) ONLY.</p>	
34	SPECIAL NOTE FOR BIDDERS: THE QUOTATION SHOULD BE FROM PRINCIPAL / ORIGINAL EQUIPMENT MANUFACTURER ONLY. THE OFFER OF THOSE OEM, AUTHORISING THEIR TRADER / DEALER / DISTRIBUTOR TO QUOTE AND TAKE ORDER IS LIABLE FOR DISQUALIFICATION. SINCE BHEL PREFER TO DEAL DIRECTLY WITH OEM AND NOT THROUGH DEALER / TRADER / DISTRIBUTOR OF OEM, THEREFORE, OEM MUST DIRECTLY QUOTE, TAKE ORDER AND DELIVER THE MATERIAL UNDER THEIR GUARANTEE / WARRANTEE.	
35	<p>I. FOLLOWING DOCUMENTS SHOULD BE ENCLOSED AND ADDRESSED TO DGM (FINANCE) AND SAME SHALL BE DISPATCHED TO MM DEPTT. BHEL, HERP, TARNA, SHIVPUR, VARANASI-221003 FOR PAYMENT PURPOSE:</p> <p>a) 05 (FIVE) COPIES OF GST INVOICES</p> <p>b) COPY OF GR/RR.</p> <p>c) TEST CERTIFICATE AND GUARANTEE/WARRANTEE CERTIFICATE AND PDI REPORT, IF APPLICABLE. (ONE COPY).</p> <p>II. FURTHER TO ABOVE, 02 (TWO) COMPLETE SETS OF DOCUMENTS (COPIES OF ABOVE MENTIONED DOCUMENTS AT SL. NO. I FOR INDIAN SUPPLIERS (UNDER THIS CLAUSE) SHALL BE SENT FOR PURCHASE AND QUALITY DEPARTMENTS. ORIGINAL COPIES OF TC, GC, PDI REPORTS & OTHER QUALITY PAPERS SHALL BE ATTACHED IN THE SET OF DOCUMENTS FOR QUALITY DEPARTMENTS.</p> <p>III. THE VENDOR SHOULD PROVIDE BILLS & OTHER DOCUMENTS COMPLETE IN ALL RESPECT AS PER PURCHASE ORDER ALONGWITH DESPATCH OF MATERIALS. BHEL SHALL SEEK CLARIFICATION(S) (IF ANY) RELATED TO PAYMENT DOCUMENTS IN ONE GO. THE VENDOR SHOULD PROVIDE ALL SUCH CLARIFICATION(S) IMMEDIATELY. ANY DELAY IN PROCESSING OF PAYMENT, DUE TO NON RECEIPT OF CLARIFICATION(S) SOUGHT BY BHEL, SHALL BE ATTRIBUTABLE COMPLETELY TO VENDOR.</p> <p>IV. DIGITALLY SIGNED INVOICE IS ALSO ACCEPTABLE FOR PROCESSING OF PAYMENT.</p>	

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36	THE VENDOR SHALL ENSURE THAT THEIR BANK DETAILS ARE UPDATED WITH US FOR TIMELY PAYMENT THROUGH EFT (ELECTRONICS FUND TRANSFER).	
37	GUIDELINES FOR SUSPENSION OF BUSINESS DEALINGS WITH SUPPLIERS/ CONTRACTORS: THE REVISED GUIDELINES FOR SUSPENSION OF BUSSINESS DEALINGS ARE AVAILABLE ON BHEL WEBSITE AT “www.bhel.com” on “SUPPLIER REGISTRATION PAGE”. RESPECTIVE BIDDERS / SUPPLIERS MAY REFER THIS BEFORE QUOTING AS PER THEIR REQUIREMENT. ACTION AGAINST THE DEFAULTED SUPPLIERS/ CONTRACTORS’ SHALL BE TAKEN AS PER THESE GUIDELINES ONLY.	
38	VENDOR MUST FOLLOW THE SEQUENTIAL DELIVERY SCHEDULE i.e. ITEMS TO BE SUPPLIED IN SUCH A MANNER THAT THE PURCHASE ORDER HAVING OLDER DELIVERY SCHEDULE SHOULD BE SUPPLIED EARLIER AND PURCHASE ORDER HAVING LATTER DELIVERY SCHEDULE TO BE SUPPLIED LATTER. IF ANY VENDOR DOES NOT FOLLOW THE SEQUENTIAL DELIVERY SCHEDULE ESPECIALLY FOR SAME ITEM, BHEL MAY ACCOUNT FOR THE ITEM IN SEQUENTIAL MANNER OR MAY RECOVER THE FINANCIAL IMPLICATION.	
39	ALL ABOVE ACCEPTED TERMS & CONDITIONS SHALL BE PART OF PURCHASE ORDER WITH OR WITHOUT MENTIONING IN THE PO/CONTRACT BASED ON YOUR ACCEPTANCE AND OFFER SUBMITTED.	
40	IMPORTANT INSTRUCTION: I.VENDORS ARE REQUESTED TO QUOTE THEIR RATE WITH DESCRIPTION MENTIONED IN THE ENQUIRY CONSIDERING ALL TECHNICAL TERMS & CONDITIONS OF THE ENQUIRY. ALSO RATES QUOTED SHOULD BE EXACTLY AS PER SL. NO. OF HARD COPY OF THE ENQUIRY (IF ENQUIRY HAS BEEN FLOATED THROUGH CONVENTIONAL MODE) OR AS PER SL. NO. APPEARING IN THE e-Procurement PORTAL (IF ENQUIRY HAS BEEN FLOATED THROUGH e-Procurement) ONLY. IT MUST BE FOLLOWED UP TO AVOID CONFUSION AT LATER STAGES. ALSO RATES TO BE SUBMITTED BOTH IN NUMERICS AS WELL AS IN WORD. IN CASE OF DISCREPENCY, RATES SUBMITTED IN WORDS SHALL BE CONSIDERED FOR FURTHER PROCESSING. II.DOCUMENTS SUBMITTED WITH THE OFFER SHOULD BE SIGNED AND STAMPED IN EACH PAGE BY AUTHORIZED REPRESENTATIVE OF THE BIDDER. II.II.IN CASE OF PDI, VENDOR SHALL RAISE ONLINE INSPECTION CALL IN ONLINE INSPECTION PORTAL/INTIMATE BHEL IN WRITTING (WHERE INSPECTION IS IN BHEL HERP SCOPE) AT LEAST 01 WEEK IN ADVANCE OR AS MUTUALLY AGREED PERIOD ABOUT THE DATE AND PLACE AT WHICH GOODS WILL BE READY FOR INSPECTION. IV.PURCHASER OR HIS AUTHORIZED REPRESENTATIVE SHALL BE ENTITLED TO CARRY OUT SURVEILLANCE INSPECTION OF MATERIAL AND WORKMANSHIP AT SELLER’S PREMISES OR AT HIS SUB-CONTRACTOR’S PREMISES AT ALL REASONABLE TIMES DURING EXECUTION OF THE CONTRACT. SUCH INSPECTION, EXAMINATION AND TESTING, IF MADE, SHALL NOT ABSOLVE THE SELLER FROM HIS OBLIGATIONS UNDER THE CONTRACT. V.SUCH PRE-DISPATCH INSPECTION, EXAMINATION AND TESTING, IF MADE, AT VENDOR’S WORKS SHALL NOT ABSOLVE THE SELLER FROM HIS OBLIGATIONS TO MANUFACTURE/MACHINING THE GOODS UNDER THE CONTRACT. IF DEFECTS ARE FOUND AT LATER STAGE, IT IS THE SOLE RESPONSIBILITY OF THE VENDOR TO REPLACE/RECTIFY THE SAME.	
41	IMPORTANT CLAUSE FOR GST: INPUT TAX CREDIT OF GST CAN BE AVAILED BY BHEL ONLY WHEN THE MATERIAL HAS BEEN PHYSICALLY RECEIVED AND GST INVOICE IS IN POSSESSION OF BHEL. THEREFORE, SUPPLIERS SHOULD ENSURE THE FOLLOWING IN RESPECT OF POS ISSUED BY BHEL: I. GST INVOICE SHOULD CONTAIN ADDRESS, GST NO. AND PAN NO. OF BHEL AS WELL AS OF SUPPLIER. APPLICABLE HSN CODE OF THE MATERIAL SHOULD BE INDICATED IN THE GST INVOICE. II. FIVE COPIES OF GST INVOICE AND LORRY RECEIPT MAY BE DESPATCHED ALONGWITH SHIPMENT OF THE GOODS IN ORDER TO AVOID ANY DELAY IN AVAILING INPUT CREDIT BY BHEL. III. DECLARE SUCH INVOICE IN HIS GSTR-1 RETURN FOR THE MONTH OF DESPATCH OF MATERIAL. IV. PAYMENT OF GST TO STATUTORY AUTHORITIES WITHIN PRESCRIBED TIME. V. IN CASE OF DISCREPANCY IN THE DATA UPLOADED BY THE BIDDER IN THE GSTN PORTAL VIS-A-VIS THE TAX INVOICE OR IN CASE OF ANY SHORTAGES OR REJECTION IN THE SUPPLY, THEN BHEL WILL NOT BE ABLE TO AVAIL THE TAX CREDIT. BIDDER HAS TO RECTIFY THE DATA DISCREPANCY IN THE GSTN PORTAL OR ISSUE CREDIT NOTE OR DEBIT NOTE (DETAILS ALSO TO BE UPLOADED IN GSTN PORTAL) FOR THE SHORTAGES OR REJECTIONS IN THE SUPPLIES OR ADDITIONAL CLAIMS FOR PROCESSING OF SUCH INVOICES. VI. GST TDS DEDUCTED AS PER GST ACT, IS UPLOADED IN GSTN PORTAL ALONG GSTR7. BIDDERS CAN DIRECTLY DOWNLOAD THE GST TDS CERTIFICATE FROM THE GSTN PORTAL. IN CASE GST CREDIT IS DELAYED /DENIED TO BHEL DUE TO NON OR DELAYED RECEIPT OF GOODS AND OR TAX INVOICE OR EXPIRY OF TIMELINE PRESCRIBED IN GST LAW FOR AVAILING SUCH ITC OR ANY OTHER REASON NOT ATTRIBUTABLE TO BHEL, GST AMOUNT SHALL BE RECOVERABLE FROM VENDOR ALONG WITH INTEREST /PENALTY LEVIABLE ON BHEL. IN CASE SUPPLIERS DELAYS DECLARING SUCH INVOICE IN HIS RETURN AND GST CREDIT AVAILED BY BHEL IS DENIED OR REVERSED SUBSEQUENTLY AS PER GST LAW, GST AMOUNT PAID BY BHEL TOWARDS SUCH ITC REVERSAL SHALL BE RECOVERABLE FROM SUPPLIER ALONGWITH INTEREST LEVIED/LEVIABLE ON BHEL. IN CASE OF RAISING ANY SUPPLEMENTARY TAX INVOICE (DEBIT/ CREDIT NOTE), THE SUPPLIER SHALL ISSUE THE SAME CONTAINING ALL THE DETAILS AS REFERRED TO IN SECTION 34 READ WITH SECTION 31 OF GST ACT & RULES REFERRED THERE UNDER .	
42	STATUTORY VARIATION CLAUSE : ANY INCREASE IN THE RATE OF GST SHALL BE PAYABLE ONLY FOR DELIVERIES COMPLETED WITHIN THE SCHEDULED DELIVERY PERIOD, IN OTHER WORDS INCREASE IN THE RATE OF GST SHALL NOT BE PAYABLE FOR VALUE OF CONSIGNMENT DELIVERED AFTER THE SCHEDULED PURCHASE ORDER DELIVERY PERIOD.2.NEW TAXES AND DUTIES , IF IMPOSED SUBSEQUENT TO DUE DATE OF OFFER SUBMISSION, BY STATUTORY AUTHORITY DURING CONTRACT PERIOD (INCLUDING EXTENSION IF THE SAME IS NOT ATTRIBUTABLE TO BIDDER) SHALL BE REIMBURSED BY BHEL ON PRODUCTION OF RELEVANT SUPPORTING DOCUMENTS TO THE SATISFACTION OF BHEL . HOWEVER, BIDDER SHALL TAKE PRIOR APPROVAL OF BHEL BEFORE DEPOSITING NEW TAXES AND DUTIES.	
43	IMPORTANT INSTRUCTION FOR MSEs SUPPLIERS: I. “MSE SUPPLIERS CAN AVAIL THE INTENDED BENEFITS ONLY IF THEY SUBMIT ALONG WITH OFFER, ATTESTED COPIES OF EITHER EM-II CERTIFICATE HAVING DEEMED VALIDITY (FIVE YEARS FROM THE DATE OF ISSUE OF ACKNOWLEDGEMENT IN EM-II) OR VALID NSIC CERTIFICATE OR EM-II CERTIFICATE ALONG WITH CA CERTIFICATE (FORMAT ENCLOSED AS PER ANNEXURE-1 WHERE DEEMED VALIDITY OF EM-II CERTIFICATE OF FIVE YEARS HAS EXPIRED) APPLICABLE FOR THE RELEVANT F/Y (LATEST AUDITED).DATE TO BE RECKONED FOR DETERMINING THE DEEMED VALIDITY WILL BE THE DATE OF BID OPENING (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. NO BENEFIT SHALL BE APPLICABLE FOR THIS ENQUIRY IF ANY DEFICIENCY IN THE ABOVE REQUIRED DOCUMENTS ARE NOT SUBMITTED BEFORE PRICE BID OPENING. IF THE TENDER IS TO BE SUBMITTED THROUGH e-procurement PORTAL, THEN THE ABOVE REQUIRED DOCUMENTS ARE TO BE UPLOADED ON THE PORTAL. DOCUMENTS SHOULD BE NOTARIZED OR ATTESTED BY A GAZETTED OFFICE. II.IN CASE OF ANY CHANGE IN THE MSE STATUS OF THE BIDDER, IT SHALL BE RESPONSIBILITY OF THE BIDDER TO NOTIFY THE CHANGE AS A PART OF THE BID DOCUMENT. IF AT A LATER DATE IT COMES TO NOTICE OF BHEL, THAT THE CHANGE IN THE STATUS HAS NOT BEEN INTIMATED BY THE BIDDER AND THE ORDER IS OBTAINED UNDER THE PREMISE OF AN MSE, THEN BHEL WOULD CANCEL THE PENDING ORDER AGAINST THIS TENDER AND TAKE NECESSARY ACTION SUSPENSION OF THE BUSSINESS DEALING WITH THE BIDDER AS PER PROCUREMENT POLICY OF BHEL. III.25 % OF THE TENDERED QUANTITY IS EARMARKED FOR MSE SUPPLIERS IN THIS TENDER. IV.OUT OF THIS 25% TENDERED QUANTITY RESERVED FOR MSE SUPPLIERS, 6.25% SHALL BE EARMARKED FOR PROCUREMENT FROM MSEs OWNED BY SC/ST ENTREPRENEURS. V.OUT OF THIS 25% TENDERED QUANTITY RESERVED FOR MSE SUPPLIERS, 3% SHALL BE EARMARKED FOR PROCUREMENT FROM MSEs OWNED BY WOMEN. VI.IN CASE MSE VENDOR PARTICIPATING IN THE TENDER QUOTES WITHIN THE PRICE BAND OF “L1+15%”, THEY WILL BE ALLOWED TO SUPPLY THE 25% PORTION OF THE REQUIREMENT SUBJECT TO ACCEPTANCE OF L1 PRICE (ON LANDED COST BASIS) BY MSE VENDOR. IN CASE OF MORE THAN ONE SUCH MSE VENDOR WITHIN THE “L1+15% PRICE BAND” THE SUPPLY SHALL BE SHARED PROPORTIONATELY (TO 25% TENDERED QUANTITY). VII.IF THE L1 VENDOR HAPPENS TO BE A MSE VENDOR AGAINST ANY ITEM CODE, THEN 100% OF THE TENDERED QTY (FOR RESPECTIVE ITEM CODE) SHALL BE PROPOSED TO ORDER ON THE L1 (MSE) VENDOR, EVEN THOUGH THERE MAY BE OTHER MSE VENDORS WITHIN THE “L1+15% PRICE BAND”. VIII.IN CASE AFTER OPENING OF PRICE BID, IT IS SEEN THAT NO MSE HAS BECOME L1, THEN DEPENDING ON THE NATURE OF THE ITEM, IF IT IS NOT POSSIBLE TO SPLIT THE TENDERED ITEMS/QUANTITIES ON ACCOUNT OF REASONS LIKE CUSTOMER CONTRACT REQUIREMENTS OF SUPPLYING ONE MAKE FOR A GIVEN PROJECT OR TECHNICAL REASONS LIKE TENDERED ITEMS BEING A SYSTEM etc. THEN BHEL WOULD NOT COUNTER OFFER THE L1 PRICES EVEN THOUGH THERE MAY BE MSE BIDDERS WITHIN THE “L1+15% PRICE BAND” OF L1.	
44	THE STARTUPS AS DEFINED IN THE GAZETTE OF INDIA NOTIFICATION NO.: G.S.R. 127 (E) DATED 19/02/2019 WILL BE EXEMPTED FROM FULFILLING THE CRITERIA, IF MENTIONED, IN THE PQR (PRE-QUALIFYING REQUIREMENT) REGARDING PRIOR TURNOVER AND PRIOR EXPERIENCE. HOWEVER, THERE MAY BE CIRCUMSTANCES (LIKE PROCUREMENTS OF ITEMS RELATED TO PUBLIC SAFETY, HEALTH, CRITICAL SECURITY OPERATIONS AND EQUIPMENTS ETC.) WHERE BHEL MAY PREFER THE VENDORS TO HAVE PRIOR EXPERIENCE RATHER THAN GIVING ORDER TO NEW ENTITIES. FOR SUCH PROCUREMENTS, BHEL MAY NOT RELAX THE CRITERIA OF PRIOR EXPERIENCE/TURNOVER FOR THE STARTUPS.	
45	PURCHASE PREFERENCE FOR INDIAN VENDORS: FOR THIS PROCUREMENT, THE LOCAL CONTENT TO CATEGORIZE A SUPPLIER AS A CLASS I LOCAL SUPPLIER / CLASS II LOCAL SUPPLIER /NON LOCAL – SUPPLIER AND PURCHASE PREFERENCE TO CLASS I LOCAL SUPPLIER, IS AS DEFINED IN PUBLIC PROCUREMENT (PREFERENCE TO MAKE IN INDIA), ORDER	

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	<p>2017 DATED 04.06.2020 ISSUED BY DPIIT. IN CASE OF SUBSEQUENT ORDERS ISSUED BY THE NODAL MINISTRY, CHANGING THE DEFINITION OF LOCAL CONTENT FOR THE ITEMS OF THE NIT, THE SAME SHALL BE APPLICABLE EVEN IF ISSUED AFTER ISSUE OF THIS NIT, BUT BEFORE OPENING OF PART –II BIDS AGAINST THIS NIT.</p> <p>MODEL CLAUSE FOR TENDER.</p> <p>I. ANY BIDDER FROM A COUNTRY WHICH SHARES A LAND BORDER WITH INDIA WILL BE ELIGIBLE TO BID IN THIS TENDER ONLY IF THE BIDDER IS REGISTERED WITH THE COMPETENT AUTHORITY.</p> <p>II. "BIDDER" (INCLUDING THE TERM 'TENDERER', 'CONSULTANT' OR 'SERVICE PROVIDER' IN CERTAIN CONTEXTS) MEANS ANY PERSON OR FIRM OR COMPANY, INCLUDING ANY MEMBER OF A CONSORTIUM OR JOINT VENTURE (THAT IS AN ASSOCIATION OF SEVERAL PERSONS, OR FIRMS OR COMPANIES), EVERY ARTIFICIAL JURIDICAL PERSON NOT FALLING IN ANY OF THE DESCRIPTIONS OF BIDDERS STATED HEREINBEFORE, INCLUDING ANY AGENCY BRANCH OR OFFICE CONTROLLED BY SUCH PERSON, PARTICIPATING IN A PROCUREMENT PROCESS.</p> <p>III. "BIDDER FROM A COUNTRY WHICH SHARES A LAND BORDER WITH INDIA" FOR THE PURPOSE OF THIS ORDER MEANS: -</p> <p>a) AN ENTITY INCORPORATED, ESTABLISHED OR REGISTERED IN SUCH A COUNTRY; OR</p> <p>b) A SUBSIDIARY OF AN ENTITY INCORPORATED, ESTABLISHED OR REGISTERED IN SUCH A COUNTRY; OR</p> <p>c) AN ENTITY SUBSTANTIALLY CONTROLLED THROUGH ENTITIES INCORPORATED, ESTABLISHED OR REGISTERED IN SUCH A COUNTRY; OR</p> <p>d) AN ENTITY WHOSE BENEFICIAL OWNER IS SITUATED IN SUCH A COUNTRY; OR</p> <p>e) AN INDIAN (OR OTHER) AGENT OF SUCH AN ENTITY; OR</p> <p>f) A NATURAL PERSON WHO IS A CITIZEN OF SUCH A COUNTRY; OR</p> <p>g) A CONSORTIUM OR JOINT VENTURE WHERE ANY MEMBER OF THE CONSORTIUM OR JOINT VENTURE FALLS UNDER ANY OF THE ABOVE</p> <p>IV. THE BENEFICIAL OWNER FOR THE PURPOSE OF (III) ABOVE WILL BE AS UNDER:</p> <p>1. IN CASE OF A COMPANY OR LIMITED LIABILITY PARTNERSHIP, THE BENEFICIAL OWNER IS THE NATURAL PERSON (S) WHO, WHETHER ACTING ALONE OR TOGETHER, OR THROUGH ONE OR MORE JURIDICAL PERSON, HAS A CONTROLLING OWNERSHIP INTEREST OR WHO EXERCISES CONTROL THROUGH OTHER MEANS.</p> <p>EXPLANATION –</p> <p>a. "CONTROLLING OWNERSHIP INTEREST" MEANS OWNERSHIP OF OR ENTITLEMENT TO MORE THAN TWENTY-FIVE PER CENT. OF SHARES OR CAPITAL OR PROFITS OF THE COMPANY</p> <p>b. "CONTROL" SHALL INCLUDE THE RIGHT TO APPOINT MAJORITY OF THE DIRECTORS OR TO CONTROL THE MANAGEMENT OR POLICY DECISIONS INCLUDING BY VIRTUE OF THEIR SHAREHOLDING OR MANAGEMENT RIGHTS OR SHAREHOLDER'S AGREEMENTS OF VOTING AGREEMENTS;</p> <p>2. IN CASE OF A PARTNERSHIP FIRM, THE BENEFICIAL OWNER IS THE NATURAL PERSON (S) WHO, WHETHER ACTING ALONE OR TOGETHER, OR THROUGH ONE OR MORE JURIDICAL OF CAPITAL OR PROFITS OF THE PARTNERSHIP;</p> <p>3. IN CASE OF AN UNINCORPORATED ASSOCIATION OR BODY OF INDIVIDUALS, THE BENEFICIAL OWNER IS THE NATURAL PERSON (S), WHO, WHETHER ACTING ALONE OR TOGETHER, OR THROUGH ONE OR MORE JURIDICAL PERSON, HAS OWNERSHIP OF OR ENTITLEMENT TO MORE THAN FIFTEEN PERCENT OF THE PROPERTY OF CAPITAL OF PROFITS OF SUCH ASSOCIATION OR BODY OF INDIVIDUALS;</p> <p>4. WHERE NO NATURAL PERSON IS IDENTIFIED UNDER (1) OR (2) OR (3) ABOVE, THE BENEFICIAL OWNER IS THE RELEVANT NATURAL PERSON WHO HOLDS THE POSITION OF SENIOR MANAGING OFFICIAL;</p> <p>5. IN CASE OF TRUST, THE IDENTIFICATION OF BENEFICIAL OWNER (S) SHALL INCLUDE IDENTIFICATION OF THE AUTHOR OF THE TRUST, THE TRUSTEE, THE BENEFICIARIES WITH FIFTEEN PERCENT OR MORE INTEREST IN THE TRUST AND ANY OTHER NATURAL PERSON EXERCISING ULTIMATE EFFECTIVE CONTROL OVER THE TRUST THROUGH A CHAIN OF CONTROL OR OWNERSHIP.</p> <p>V. AN AGENT IS A PERSON EMPLOYED TO DO ANY ACT FOR ANOTHER, OR TO REPRESENT ANOTHER IN DEALINGS WITH THIRD PERSON.</p> <p>CERTIFICATE: IN ORDER TO AVOID THE BENEFITS, VENDORS TO SUBMIT (ALONG WITH OFFER) THE SELF-CERTIFICATION THAT THE ITEM OFFERED MEETS THE CONTENT REQUIREMENT FOR CLASS-I/ CLASS-II LOCAL SUPPLIER AS THE CASE MAY BE, INDICATING THE PERCENTAGE OF LOCAL CONTENT. AND SHALL GIVE DETAILS OF LOCATION AT WHICH THE LOCAL VALUE ADDITION IS MADE (refer attached Make in India (Model Certificate no I).</p>	
46	<p>FORCE MAJEURE : NOTWITHSTANDING ANYTHING CONTAINED IN THE CONTRACT, NEITHER THE VENDOR NOR THE BHEL SHALL BE HELD RESPONSIBLE FOR TOTAL OR PARTIAL NON-EXECUTION OF ANY OF THE CONTRACTUAL OBLIGATIONS, SHOULD THE OBLIGATION BECOME UNREASONABLY ONEROUS OR IMPOSSIBLE DUE TO OCCURRENCE OF A 'FORCE MAJEURE' WHICH DIRECTLY AFFECTS THE OBLIGATIONS TO BE PERFORMED BY THE BHEL OR THE VENDOR ; SUCH EVENTS INCLUDE WAR, MILITARY OPERATIONS OF ANY NATURE, BLOCKAGES, REVOLUTIONS, INSURRECTIONS, RIOTS, CIVIL COMMOTIONS, INSURGENCY, SABOTAGE, ACTS OF PUBLIC ENEMY, FIRES, EXPLOSION, EPIDEMICS, QUARANTINE RESTRICTIONS, FLOODS, EARTHQUAKE, OR ACTS OF GOD, RESTRICTIONS BY GOVT. AUTHORITIES; OVER WHICH THE VENDOR OR THE BHEL HAS NO CONTROL. THE PARTY CLAIMING TO BE AFFECTED BY FORCE MAJEURE SHALL NOTIFY THE OTHER PARTY IN WRITING WITHOUT DELAY, WITHIN TWO WEEKS ON THE INTERVENTION AND ON THE CESSATION OF SUCH CIRCUMSTANCE. EXTENSION OF TIME SOUGHT BY THE VENDOR ALONG WITH SUPPORTING EVIDENCE AND SO GRANTED BY THE BHEL FOR THE SUPPLY/ WORK AFFECTED, IF ANY, SHALL NOT BE CONSTRUED AS WAIVER IN RESPECT OF REMAINING DELIVERIES. RESCHEDULING OF DELIVERIES ON ACCOUNT OF FORCE MAJEURE CONDITIONS, IF SO AGREED BY THE BHEL, WILL NOT ENTAIL THE VENDOR TO CLAIM ANY INCREASE IN THE PRICE ON WHATSOEVER ACCOUNT. NOTWITHSTANDING ABOVE PROVISIONS, BHEL SHALL RESERVE THE RIGHT TO CANCEL THE ORDER/ CONTRACT, WHOLLY OR PARTLY, IN ORDER TO MEET THE OVERALL PROJECT SCHEDULE AND MAKE ALTERNATIVE ARRANGEMENTS. IF DEEMED NECESSARY, BHEL MAY TAKEOVER PARTLY PROCESSED MATERIAL AT A MUTUALLY AGREED PRICE.</p>	
47	<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 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>	
48	<p>SHORT SHIPMENTS/ WARRANTY/GUARANTEE REPLACEMENTS: IN CASE OF ANY SHORT SHIPMENT DURING INITIAL SUPPLY WHICH IS SUBSEQUENTLY DISPATCHED BY THE VENDOR OR ANY GUARANTEE / WARRANTY REPLACEMENTS SHALL BE DISPATCHED ON "FOR-BHEL STORES/DESIGNATED DESTINATION" BASIS FOR INDIGENOUS ITEMS. TAXES, IF ANY PAID BY INDIGENOUS VENDOR FOR GUARANTEE /WARRANTEE REPLACEMENT, REPAIR ACTIVITY EXCLUDING SHORT SUPPLY SHALL BE TO VENDOR'S ACCOUNT ONLY. THE VENDOR HAS TO RAISE A CREDIT NOTE FOR SHORT SUPPLIED QUANTITY AS PER GST PROVISIONS.</p>	
49	<p>E WAY BILL: THE SUPPLIER HAS TO ARRANGE FOR E WAY BILL AS APPLICABLE FOR ANY MOVEMENT OF GOODS ALONG WITH OTHER PRESCRIBED DOCUMENTS AS PER GST LAW. THE SUPPLIER HAS ALSO TO COMPLY WITH ANY AMENDMENT AS PRESCRIBED FROM TIME TO TIME UNDER E WAY BILL RULE. ANY FINANCIAL IMPLICATION ARISES ON BHEL DUE TO NONCOMPLIANCE OF E WAY BILL RULE WILL BE PASSED ON TO THE SUPPLIER.</p>	
50	<p>THE BIDDER DECLARES THAT THEY WILL NOT ENTER INTO ANY ILLEGAL OR UNDISCLOSED AGREEMENT OR UNDERSTANDING, WHETHER FORMAL OR INFORMAL WITH OTHER BIDDER (S). 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. IN CASE, THE BIDDER IS FOUND HAVING INDULGED IN ABOVE ACTIVITIES, SUITABLE ACTION SHALL BE TAKEN BY BHEL AS PER EXISTANT POLICIES / GUIDELINES.</p>	
51	<p>THE BIDDER SHALL REGISTER THEMSELVES ON GEM PORTAL AND SHALL QUOTE THEIR GEM SELLER ID IN THEIR OFFER. GEM SELLER ID IS MANDATORY FOR PLACEMENT OF PURCHASE ORDER EXCEPT IN CASES WHERE FREE ISSUE MATERIAL IS TO BE ISSUED BY BHEL .</p>	
52	<p>REJECTION/REPLACEMENT:</p> <p>THE SELLER SHALL ARRANGE REPLACEMENT / REPAIR UNDER ITS OBLIGATION UNDER THE CONTRACT. SELLER SHALL BE GIVEN GROUND RENT FREE PERIOD OF 90 DAYS FROM THE DATE OF REJECTION TO LIFT REJECTED MATERIAL. BEYOND 90 DAYS, A GROUND RENT OF 0.25% OF VALUE OF REJECTED MATERIAL PER WEEK WILL BE LEVIED FOR A MAXIMUM PERIOD OF 4 WEEKS. BEYOND THIS PERIOD SUPPLIER FORFEITS THEIR RIGHT TO THE MATERIALS.</p>	
53	<p>CONFLICT OF INTEREST AMONG BIDDERS/AGENTS:</p> <p>A BIDDER SHALL NOT HAVE CONFLICT OF INTEREST WITH OTHER BIDDERS. SUCH CONFLICT OF INTEREST CAN LEAD TO ANTI-COMPETITIVE PRACTICES TO THE DETRIMENT OF PROCURING ENTITY'S INTERESTS. THE BIDDER FOUND TO HAVE A CONFLICT OF INTEREST SHALL BE DISQUALIFIED. A BIDDER MAY BE CONSIDERED TO HAVE A CONFLICT OF INTEREST WITH ONE OR MORE PARTIES IN THIS BIDDING PROCESS, IF</p> <p>a) THEY HAVE CONTROLLING PARTNER (S) IN COMMON; OR</p> <p>b) THEY RECEIVE OR HAVE RECEIVED ANY DIRECT OR INDIRECT SUBSIDY FINANCIAL STAKE FROM ANY OF THEM; OR</p> <p>c) THEY HAVE THE SAME LEGAL REPRESENTATIVE/AGENT FOR PURPOSES OF THIS BID; OR</p> <p>d) THEY HAVE RELATIONSHIP WITH EACH OTHER, DIRECTLY OR THROUGH COMMON THIRD PARTIES, THAT PUTS THEM IN A POSITION TO HAVE ACCESS TO INFORMATION ABOUT OR INFLUENCE ON THE BID OF ANOTHER BIDDER; OR</p> <p>e) BIDDER PARTICIPATES IN MORE THAN ONE BID IN THIS BIDDING PROCESS. PARTICIPATION BY A BIDDER IN MORE THAN ONE BID WILL RESULT IN THE DISQUALIFICATION OF ALL BIDS IN WHICH THE PARTIES ARE INVOLVED. HOWEVER, THIS DOES NOT LIMIT THE INCLUSION OF THE COMPONENTS/ SUB-ASSEMBLY ASSEMBLIES FROM ONE BIDDING MANUFACTURER IN MORE THAN ONE BID; OR</p>	

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**Amendment- 25
ANNEXURE-A**

	<p>f) IN CASES OF AGENTS QUOTING IN OFFSHORE PROCUREMENTS, ON BEHALF OF THEIR PRINCIPAL MANUFACTURERS, ONE AGENT CANNOT REPRESENT TWO MANUFACTURERS OR QUOTE ON THEIR BEHALF IN A PARTICULAR TENDER ENQUIRY. ONE MANUFACTURER CAN ALSO AUTHORISE ONLY ONE AGENT/DEALER. THERE CAN BE ONLY ONE BID FROM THE FOLLOWING:</p> <p>1. THE PRINCIPAL MANUFACTURER DIRECTLY OR THROUGH ONE INDIAN AGENT ON HIS BEHALF; AND</p> <p>2. INDIAN/FOREIGN AGENT ON BEHALF OF ONLY ONE PRINCIPAL; OR</p> <p>g) A BIDDER OR ANY OF ITS AFFILIATES PARTICIPATED AS A CONSULTANT IN THE PREPARATION OF THE DESIGN OR TECHNICAL SPECIFICATIONS OF THE CONTRACT THAT IS THE SUBJECT OF THE BID; OR</p> <p>h) IN CASE OF A HOLDING COMPANY HAVING MORE THAN ONE INDEPENDENTLY MANUFACTURING UNITS, OR MORE THAN ONE UNIT HAVING COMMON BUSINESS OWNERSHIP/MANAGEMENT, ONLY ONE UNIT SHOULD QUOTE. SIMILAR RESTRICTIONS WOULD APPLY TO CLOSELY RELATED SISTER COMPANIES. BIDDERS MUST PROACTIVELY DECLARE SUCH SISTER/ COMMON BUSINESS/ MANAGEMENT UNITS IN SAME/ SIMILAR LINE OF BUSINESS.</p>	
54	VENDOR MUST VISIT OUR WEBSITE https://herp.bhel.com REGULARLY FOR ENQUIRY/PO/CLARIFICATIONS/FOR ANY LATEST UPDATES.	
55	MSME VENDORS CAN AVAIL BENEFITS OF PAYMENT THROUGH TREDS/RXIL.	
56	<p>"THE OFFERS OF THE BIDDERS WHO ARE UNDER SUSPENSION AS ALSO THE OFFERS OF THE BIDDERS, WHO ENGAGE THE SERVICES OF THE FIRMS DEBARRED ACROSS BHEL, SHALL BE REJECTED. THE LIST OF FIRMS DEBARRED ACROSS BHEL IS AVAILABLE ON BHEL WEBSITE WWW.BHEL.COM.</p> <p>1.0 INTEGRITY COMMITMENT, PERFORMANCE OF THE CONTRACT AND PUNITIVE ACTION THEREOF:</p> <p>1.1. COMMITMENT BY BHEL: BHEL COMMITS TO TAKE ALL MEASURES NECESSARY TO PREVENT CORRUPTION IN CONNECTION WITH THE TENDER PROCESS AND EXECUTION OF THE CONTRACT.</p> <p>BHEL WILL DURING THE TENDER PROCESS TREAT ALL BIDDER(S) IN A TRANSPARENT AND FAIR MANNER, AND WITH EQUITY.</p> <p>1.2. COMMITMENT BY BIDDER/ SUPPLIER/ CONTRACTOR:</p> <p>1.2.1. 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.</p> <p>1.2.2. 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.</p> <p>1.2.3. 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.</p> <p>IF ANY BIDDER/ SUPPLIER/ CONTRACTOR DURING PRE-TENDERING/ TENDERING/ POST TENDERING/ AWARD/ EXECUTION/ POST-EXECUTION STAGE INDULGES IN MALPRACTICES, CHEATING, BRIBERY, FRAUD OR AND OTHER MISCONDUCT OR FORMATION OF CARTEL SO AS TO INFLUENCE THE BIDDING PROCESS OR INFLUENCE THE PRICE OR ACTS OR OMITS 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, THEN, ACTION MAY BE TAKEN AGAINST SUCH BIDDER/ SUPPLIER/ CONTRACTOR AS PER EXISTANT GUIDELINES OF THE COMPANY AVAILABLE ON WWW. BHEL.COM AND/OR UNDER APPLICABLE LEGAL PROVISIONS".</p>	
57	<p>BID SECURITY OR EARNEST MONEY DEPOSIT (EMD): TO SAFE GUARD AGAINST A BIDDER'S WITHDRAWING OR ALTERING ITS/ HIS BID DURING THE BID VALIDITY PERIOD, BID SECURITY [ALSO KNOWN AS EARNEST MONEY DEPOSIT (EMD)] SHALL BE OBTAINED FROM THE BIDDERS ALONG WITH THEIR BIDS (EXCEPT MICRO AND SMALL ENTERPRISES (MSEs) OR STARTUPS AS RECOGNIZED BY DEPARTMENT FOR PROMOTION OF INDUSTRY AND INTERNAL TRADE (DPIIT)). THE AMOUNT OF EMD SHALL BE AS MENTIONED IN ENQUIRY.</p> <p>1. MODES OF DEPOSIT</p> <p>A) THE EMD MAY BE ACCEPTED ONLY IN THE FOLLOWING FORMS AND THE SAME MUST BE SUBMITTED BEFORE TENDER OPENING:</p> <p>(I) ELECTRONIC FUND TRANSFER CREDITED IN BHEL ACCOUNT.</p> <p>(II) BANKER'S CHEQUE/ PAY ORDER/ DEMAND DRAFT, IN FAVOUR OF BHEL.</p> <p>(III) FIXED DEPOSIT RECEIPT (FDR).(IN THE NAME OF " BIDDER'S NAME A/C BHEL")</p> <p>(IV) BANK GUARANTEE FROM ANY OF THE SCHEDULED BANKS.</p> <p>(V) INSURANCE SURETY BONDS.</p> <p>B) IN CASE THE EMD IS MORE THAN RUPEES TWO LAKH AND IN CASE OF FOREIGN BIDDERS, IT MAY BE IN THE FORM OF A BANK GUARANTEE (IN EQUIVALENT FOREIGN EXCHANGE AMOUNT, IN CASE OF FOREIGN BIDDERS) ISSUED/ CONFIRMED FROM ANY OF THE SCHEDULED COMMERCIAL BANK IN INDIA IN AN ACCEPTABLE FORM. THE EMD SHALL REMAIN VALID FOR A PERIOD OF 45 (FORTY-FIVE) DAYS BEYOND THE FINAL BID VALIDITY PERIOD.</p> <p>2. FORFEITURE OF EMD</p> <p>I) A BIDDER'S EMD WILL BE FORFEITED IF THE BIDDER WITHDRAWS OR AMENDS ITS/HIS TENDER OR IMPAIRS OR DEROGATES FROM THE TENDER IN ANY RESPECT WITHIN THE PERIOD OF VALIDITY OF THE TENDER OR IF THE SUCCESSFUL BIDDER FAILS TO FURNISH THE REQUIRED PERFORMANCE SECURITY WITHIN THE SPECIFIED PERIOD MENTIONED IN THE TENDER.</p> <p>(II) EMD BY THE TENDERER SHALL BE WITHHELD IN CASE ANY ACTION ON THE BIDDER IS ENVISAGED UNDER THE PROVISIONS OF EXISTANT "GUIDELINES ON SUSPENSION OF BUSINESS DEALINGS WITH SUPPLIERS/ CONTRACTORS" AND FORFEITED/ RELEASED BASED ON THE ACTION AS DETERMINED UNDER THESE GUIDELINES.</p> <p>3. RETURN OF EMD</p> <p>(I) BID SECURITIES OF THE UNSUCCESSFUL BIDDERS SHALL BE RETURNED TO BIDDER AT THE EARLIEST AFTER EXPIRY OF THE FINAL BID VALIDITY PERIOD AND LATEST BY THE 30TH DAY AFTER THE AWARD OF THE CONTRACT. HOWEVER, IN CASE OF TWO PACKET OR TWO STAGE BIDDING, BID SECURITIES OF UNSUCCESSFUL BIDDERS DURING FIRST STAGE I.E. TECHNICAL EVALUATION ETC. SHALL BE RETURNED WITHIN 30 DAYS OF DECLARATION OF RESULT OF FIRST STAGE I.E. TECHNICAL EVALUATION ETC.</p> <p>(II) BID SECURITY SHALL BE REFUNDED TO THE SUCCESSFUL BIDDER ON CONCLUSION OF THE ORDER/ RECEIPT OF A PERFORMANCE SECURITY (IF CALLED IN THE TENDER).</p> <p>(III) EMD SHALL NOT CARRY ANY INTEREST.</p>	
58	<p>PERFORMANCE SECURITY (PS): TO ENSURE DUE PERFORMANCE OF THE CONTRACT, PERFORMANCE BANK GUARANTEE (PBG) OR SECURITY DEPOSIT (SD), HEREAFTER REFERRED AS PERFORMANCE SECURITY SHALL BE OBTAINED FROM THE SUCCESSFUL BIDDER AWARDED THE CONTRACT. THE PERFORMANCE SECURITY OF REQUIRED AMOUNT IS TO BE SUBMITTED BY THE DATE SPECIFIED IN THE PO/CONTRACT.</p> <p>1. MODES OF DEPOSIT:</p> <p>A) PERFORMANCE SECURITY MAY BE FURNISHED IN THE FOLLOWING FORMS:</p> <p>(I) LOCAL CHEQUES OF SCHEDULED BANKS (SUBJECT TO REALIZATION)/ PAY ORDER/ DEMAND DRAFT/ ELECTRONIC FUND TRANSFER IN FAVOUR OF BHEL.</p> <p>(II) BANK GUARANTEE FROM SCHEDULED BANKS / PUBLIC FINANCIAL INSTITUTIONS AS DEFINED IN THE COMPANIES ACT. THE BANK GUARANTEE FORMAT SHOULD HAVE THE APPROVAL OF BHEL.</p> <p>(III) FIXED DEPOSIT RECEIPT ISSUED BY SCHEDULED BANKS / PUBLIC FINANCIAL INSTITUTIONS AS DEFINED IN THE COMPANIES ACT (FDR SHOULD BE IN THE NAME OF THE <u>CONTRACTOR, A/C BHEL</u>).</p> <p>(IV) SECURITIES AVAILABLE FROM INDIAN POST OFFICES SUCH AS NATIONAL SAVINGS CERTIFICATES, KISAN VIKAS PATRAS ETC. (HELD IN THE NAME OF CONTRACTOR FURNISHING THE SECURITY AND DULY ENDORSED/ HYPOTHECATED/ PLEDGED, AS APPLICABLE, IN FAVOUR OF BHEL).</p> <p>(V) INSURANCE SURETY BOND.</p> <p>(NOTE: BHEL WILL NOT BE LIABLE OR RESPONSIBLE IN ANY MANNER FOR THE COLLECTION OF INTEREST OR RENEWAL OF THE DOCUMENTS OR IN ANY OTHER MATTER CONNECTED THEREWITH)</p> <p>B) IN CASE OF GTE TENDERS, THE PERFORMANCE SECURITY SHALL BE IN THE SAME CURRENCY AS THE CONTRACT AND MUST CONFORM TO UNIFORM RULES FOR DEMAND GUARANTEES (URDG 758) - AN INTERNATIONAL CONVENTION REGULATING INTERNATIONAL SECURITIES.</p> <p>(C) PERFORMANCE SECURITY IS TO BE FURNISHED WITHIN A SPECIFIED DATE (GENERALLY 14(FOURTEEN) DAYS AFTER NOTIFICATION OF THE AWARD) AND IT SHOULD REMAIN VALID FOR A PERIOD OF 60 (SIXTY) DAYS BEYOND THE DATE OF COMPLETION OF ALL CONTRACTUAL OBLIGATIONS OF THE SUPPLIER, INCLUDING WARRANTY OBLIGATIONS.</p> <p>2. FORFEITURE OF PERFORMANCE SECURITY: THE PERFORMANCE SECURITY WILL BE FORFEITED AND CREDITED TO BHEL'S ACCOUNT IN THE EVENT OF A BREACH OF CONTRACT BY THE SUPPLIER.</p> <p>3. RETURN OF PERFORMANCE SECURITY (PS): PS SHALL BE REFUNDED TO THE BIDDER WITHOUT INTEREST, AFTER HE DULY PERFORMS AND COMPLETES THE CONTRACT IN ALL RESPECTS BUT NOT LATER THAN 60(SIXTY) DAYS OF COMPLETION OF ALL SUCH OBLIGATIONS INCLUDING THE WARRANTY UNDER THE CONTRACT.</p>	

GENERAL COMMERCIAL TERMS & CONDITIONS OF ENQUIRY
(FOR INDIAN VENDORS)

Amendment- 25
ANNEXURE-A

	4. THE PERFORMANCE SECURITY SHALL NOT CARRY ANY INTEREST.	
59	BREACH OF CONTRACT, REMEDIES AND TERMINATION: IN CASE OF BREACH OF CONTRACT, WHEREVER THE VALUE OF SECURITY INSTRUMENTS LIKE PERFORMANCE BANK GUARANTEE AVAILABLE WITH BHEL AGAINST THE SAID CONTRACT IS ATLEAST 10% OF THE CONTRACT VALUE, THE SAME BE ENCASHED. IN CASE THE VALUE OF THE SECURITY INSTRUMENTS AVAILABLE IS LESS THAN 10% OF THE CONTRACT VALUE, THE BALANCE AMOUNT BE RECOVERED FROM OTHER FINANCIAL REMEDIES (I.E. AVAILABLE BILLS OF THE CONTRACTOR, RETENTION AMOUNT, ETC. WITH BHEL) OR LEGAL REMEDIES BE PURSUED. FURTHER, LEVY OF LIQUIDATED DAMAGES, DEBARMENT, TERMINATION, DE-SCOPING, SHORT-CLOSURE, ETC., SHALL BE APPLIED AS PER PROVISIONS OF THE CONTRACT.	

NOTE:

1. PLEASE FILL IN THIS FORMAT AND SEND COMPULSORILY ALONG WITH QUOTATION WITH VENDOR'S SEAL, SIGNATURE AND DATE.

SIGNATURE ALONG WITH SEAL AND DATE:

Enq.No.

Vendor Name

Quotation No.

Quotation Date

TECHNICAL CONDITION

Sl.No.	Description	Vendor Response	Comment
1	Technical condition as per NIT		
2	Acceptance of items and their quantity as per NIT		
3	Quoted for all the items of NIT		
4	Delivery Period as per NIT		
5	Submission of Guarantee/Warranty certificate as per NIT		
6	Submission of Test Certificate as per NIT		
7	Submission of Inspection Certificate as per NIT		
8	Acceptance of packing instruction/condition as per NIT		

COMMERCIAL CONDITION

Sl.No.	Description	Vendor Response	Comment
1	Delivery Term		
	<i>(Insurance will be in vendor scope if delivery term is accepted as BHEL Store)</i>		
2	MSE Status		
3	Payment Term		
4	Validity of offer as per NIT		
5	GST Type		
6	LD Clause as per GTC		
7	Risk purchase as per NIT		
8	Firm Price : The quoted/finalized rates shall be firm till execution of supplies.		
	<i>Offer with PVC (Price Variation Clause) will not be considered.</i>		
9	Submission of Bank Guarantee		
10	Acceptance of Reverse Auction clause of NIT		
11	I have read & understood all terms and conditions of GTC and hereby give my acceptance on the same		

NOTE **Vendors have to write in "Comment" box only if their response is not available in drop down menu.**

On Bidder's office letter pad

Make in India (Model Certificate) Annexure-I

Self-Declaration

Enquiry No.	
Enquiry Date	

In line with Government public procurement order Number P-45021/2/2017-B.E-II dated 15.06.2017, and further modified order dt. 28.05.2018, 29.05-2019 and 04.06.2020

I / We hereby declare that I / We are a "Local Supplier" meeting the requirement of minimum local content (.....%) defined in the above government notification for the goods against above mentioned enquiry Number.

Details of location at which local value addition will be made is as follows:

Door No.	
Street / Address 1	
Street / Address 2	
District	
State	
Country	
PIN Code	

We also understand that the false declarations will be considered as breach of Integrity and liable for action.

For Company Name:

Seal:

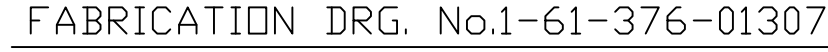
Signature:

Date:

Place:

(Please fill all Yellow color field)

INVENTORY NO	SIGN. AND DATE	REF. DRG. NO.
--------------	----------------	---------------



SHEET NO.	NO OF SHEETS
-----------	--------------

WPS-WE001

REV.	DATE	ALTERED	E.M.ASHOK	REV.	DATE	ALTERED	REV.	DATE	ALTERED
03	12.6.01	CHECKED	S.G	04	8.12.04	CHECKED	05	12.5.06	CHECKED
		APPROVED	K.M.RAO			APPROVED			APPROVED

DRG.REDRAWN IN AUTOCAD.	ø2774 WAS ø2770. ø2964 WAS ø2960	ø2788 WAS ø2774.
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THE INFORMATION ON THIS DOCUMENT IS THE PROPERTY OF BHARAT HEAVY ELECTRICALS LIMITED.
 IT MUST NOT BE USED DIRECTLY OR INDIRECTLY IN ANY WAY DETRIMENTAL TO THE INTEREST OF THE COMPANY.

DETAIL-A TYP 4 JOINTS 90° APART.
NOTE : -SEVERAL MILLS REQUIREMENT CAN BE CLUBBED TO SAVE MATERIAL

SECTION Q-Q

WPS-WE 006

PLATE		50 X 880 X 2100 FOR 4 SEGMENTS	HY1018819886	312	725.0
			AA101019	1	
DESCRIPTION & DRG.NO.	VAR NO.	RAW MATERIAL SIZE OR CASTING DRG.NO. OR FORGING DRG.NO.	MATL. CODE	NET.WT.	GROSS WT
			MATL. SPECN.	QTY.	

TYPE OF PRODUCT OR NAME OF CUSTOMER/PROJECT					
--	--	--	--	--	--

REF. TO HY0230261 FOR UNSPECIFIED TOLERANCES:	BHARAT HEAVY ELECTRICALS LTD. HYDERABAD	DRN.	E.M.ASHOK	SIGN	DATE	NO.OF VAR. NA	
		CKD.	AMAN SURIN				
		APPD.	S.GHATGE				
	DEPT.	PULVE ENGG	SCALE	WEIGHT(K.G.)	REF.TO ASSY.DRG.	ITEM NO.	NO.OF ITEM
CODE	446	1:25	312.0	NA	NA	NA	
TITLE				DRAWING NO.		REV.	
FLANGE				4-61-376-00147		05	
				SHT.NO.	01	NO.OF SHT.	01

REV	DATE	ALTERED	E.M.ASHOK	REV	DATE	ALTERED	REV	DATE	ALTERED
04	10-6-01	CHECKED	S.S	05	8.12.04	CHECKED	06	12.05.06	CHECKED
		APPROVED	K.M.RAO			APPROVED			APPROVED
DRG. RETRACED				Ø2768 WAS 2718.				Ø2782 WAS Ø2768. PL THK WAS 25. MAT CODE WAS AA1011819155.	

60°±2

32

1

2

EDGE PREPARATION

Ø1450

A

12.5

305

GRIND FLUSH (TYP)

SECTION A-A

FLAT END TO BE MACHINED TO HAVE 305 DIMENSION

WPS-WE-006

PLATE		32X3300X3300	HY1018819932	1566	2735
			AA10119	1	
DESCRIPTION & DRG.NO.	VAR NO.	RAW MATERIAL SIZE OR CASTING DRG.NO. OR FORGING DRG.NO.	MATL. CODE	NET.WT.	GROSS WT
			MATL. SPECN.	QTY.	
TYPE OF PRODUCT OR NAME OF CUSTOMER/PROJECT					

REF. TO HY0230261 FOR UNSPECIFIED TOLERANCES.	<p>BHARAT HEAVY ELECTRICALS LTD. HYDERABAD</p>	DRN.	E.M.ASHOK	SIGN	7-3-2001	NO.OF VAR.
		CKD.	S.G		7-3-2001	
		APPD.	K.M.R		7-3-2001	
DEPT. PULV.ENGG		SCALE	WEIGHT(K.G.)	REF.TO ASSY.DRG.	ITEM NO.	NO.OF ITEM
CODE 446		1:25	1566.0	NA	/	/
TITLE				DRAWING NO.		REV.
PRESSING				4-61-376-00148		06
				SHT.NO. 01	NO.OF SHT. 01	



REAFFIRMATION -NOTIFICATION

AA 085 01 20

Rev. No. 01

AA 085 01 20 : STRAIGHT BEAM ULTRASONIC EXAMINATION OF STEEL PLATES FOR PRESSURE VESSELS

This standard is "Reaffirmed 2002"

Please see Instructions on the reverse.

Ref :

Cl. 15.8.13 of MOM of WG-NDT

Approved
WG-NDT

Issued
CORP. R&D

Date
15.01.2002

Cum.Sr.No.
R 3096



AMENDMENT - NOTIFICATION

AA 085 01 20 REV.No. 01

PAGE 1 OF 2

AA 085 01 20:STRAIGHT BEAM ULTRASONIC EXAMINATION OF STEEL PLATES FOR PRESSURE VESSELS

1.0 PAGE 1 OF 3; Cl 1.2: Existing sentence is modified as follows:
"This standard is generally based on ASTM A 435."

2.0 Cl 3.0 APPARATUS:
Clause 3.0 is replaced as given below:

"3.0 EQUIPMENT CHARACTERISTICS:

3.1 Frequency range:

The ultrasonic equipment shall be suitable for operating at frequencies within the range of 0.5 to 6 MHz.

3.2 Sensitivity:

The sensitivity of the equipment shall be tested to ensure that the number of full screen back wall echoes is not less than that given below, when the appropriate probe is placed on the metallised surface of plastic insert of the Indian Standard reference block (IS:4904)/IIW block.

..... contd.

Please see instructions on the reverse.

Ref:	Amd. No.	Approved	Issued	Date	Cum. Sr. No.
Cl:10.2.6 of MOM	01	WG-NDT	CORP. R&D	15.1.96	A 1823



AMENDMENT - NOTIFICATION

AA 085 01 20 REV.No. 01

PAGE 2 OF 2

Frequency, MHz Min.No. of full screen back wall echoes

1 5

2 4

4 to 6 2

3.3 Resolution:

The resolution of the equipment and probe combined shall be such as to show separately indications of the three grooves in the IIW-VI block."

3.4 Transducer:

The transducer shall be 20-30mm dia or 25.4mm square. The test shall be performed by one of the following methods:

a)Direct contact b)Immersion c)Liquid column coupling."

3.0 PAGE 2 OF 3; Cl 5.4: Last line is modified as below:

"couplant such as oil or water shall be used."

4.0 Cl 6.1: Add the following sentence at the end of existing para:

"Total loss of back reflection means loss of back reflection upto 5% of screen height."

5.0 Cl 6.2 & 6.3: Clause 6.2 is deleted.

Clause 6.3 is renumbered as 6.2.

Please see instructions on the reverse.

Ref:	Amd. No.	Approved	Issued	Date	Cum. Sr. No.
Cl:10.2.6 of MOM	01	WG-NDT	CORP. R&D	15.1.96	A 1823



CORPORATE STANDARD

AA 085 01 20

PAGE 1 OF 3

STRAIGHT BEAM ULTRASONIC EXAMINATION OF STEEL PLATES FOR PRESSURE VESSELS

1.0 SCOPE:

1.1 This standard covers the examination procedures and acceptance standards for straight beam, pulse echo, ultrasonic, examination of rolled carbon and alloy steel plates, 12.5 mm and above in thickness, of fully killed, pressure vessel quality. It was developed to assure delivery of steel plates free of gross internal discontinuities such as pipe, ruptures or laminations and is to be used whenever the corporate purchasing specification states that the plates are to be subjected to ultrasonic examination.

1.2 This standard is generally based on ASTM A 435 - 1982 (Reapproved 1987).

2.0 PERSONNEL REQUIREMENT:

Personnel performing non-destructive examination and evaluation shall be qualified to the recommended practice SNT-TC-1A or any other recognised practice.

3.0 APPARATUS:

3.1 The manufacturer shall furnish suitable ultrasonic equipment and qualified personnel necessary for performing the test. The equipment shall be of the pulse echo straight beam type. The transducer shall be 20 to 30 mm diameter or 25.4 mm square. The test shall be performed by one of the following methods, direct contact, immersion or liquid column coupling.

4.0 TEST CONDITIONS:

4.1 The examination shall be conducted in an area free from operations that interfere with proper functioning of the equipment.

4.2 The plate surface shall be sufficiently clean and smooth to maintain a reference back reflection from the opposite side of the plate at least 50% of full scale during scanning.

4.3 The surface of plates inspected by this method may be expected to contain a residue of oil or rust or both. Any specified identification which is removed when grinding to achieve proper surface smoothness shall be restored.

5.0 PROCEDURE:

5.1 Ultrasonic examination shall be made on either major surface of the plate. Acceptance of defects in close proximity may require inspection

Revisions:

Cl. 7.8 of MOM of WG (NDT)

Approved:

**INTERPLANT
STANDARDIZATION COMMITTEE-** WG
(NDT)

Rev. No.

01

Rev. Date

NOV. '92

Revised:

CORP. R&D

Prepared

TIRUCHY

Issued

CORP. R&D

Date

NOV. '78



from the second major surface. Plates ordered in the quenched and tempered condition shall be tested following heat treatment.

- 5.2 A nominal test frequency of 2 to 4 MHz is recommended. Thickness, grain size or microstructure of the material and the nature of the equipment or method may require a higher or lower test frequency. However, frequencies, less than 1 MHz may be used only on agreement with BHEL. A Clear, easily interpreted trace pattern should be produced during the examination.
- 5.3 Conduct the examination with a test frequency and instrument adjustment that will produce a minimum 50 to a maximum 75% of full scale reference back reflection from the opposite side of a sound area of the plate.
- 5.4 Scanning shall be continuous along perpendicular grid lines on nominal 230 mm centres, or at the manufacturer's option, shall be continuous along parallel paths, transverse to the major plate axis, on nominal 100 mm centres, or shall be continuous along parallel paths parallel to the major plate axis, on 75 mm or smaller centres. A suitable couplant such as water, soluble oil, or glycerine shall be used.
- 5.5 Scanning lines shall be measured from the center or one corner of the plate. An additional path shall be scanned within 50 mm of all edges of the plate on the scanning surface.
- 5.6 Where grid scanning is performed and complete loss of back reflection accompanied by continuous indications is detected along a grid line, the entire surface area of the square adjacent to this indication shall be scanned continuously. Where parallel path scanning is performed and complete loss of back reflection accompanied by continuous indications is detected, the entire surface area of 230 x 230 mm square centred on this indication shall be scanned continuously. The true boundaries where this condition exists shall be established in either method by the following technique: Move the transducer away from the centre of the discontinuity until the heights of the back reflection and discontinuity indications are equal. Mark the plate at a point equivalent to the centre of the transducer. Repeat the operation to establish the boundary.

6.0 ACCEPTANCE STANDARD:

- 6.1 Any discontinuity indication causing a total loss of back reflection which cannot be contained within a circle, the diameter of which is 75 mm or one half of the plate thickness, whichever is greater is unacceptable.
- 6.2 BHEL representative may witness the test.
- 6.3 Acceptable adjacent discontinuity indications shall be separated from each other by a distance equal to or larger than the larger of the adjacent discontinuity indications unless the adjacent defects can be contained in a circle of diameter equal to the acceptance standard for a single defect.



CORPORATE STANDARD

AA 085 01 20

PAGE 3 OF 3

7.0 MARKING:

7.1 Plates accepted in accordance with this specification shall be identified by stamping UT: AA 085 01 20 or in some other manner adjacent to marking required by the relevant corporate purchasing specification.

8.0 SUPPLEMENTARY REQUIREMENTS:

8.1 Any supplementary requirements according to ASTM A 435, if required, will be specified in the purchase order.



CORPORATE STANDARD

AA 085 01 29

PAGE 1 OF 1

ACCEPTANCE STANDARDS FOR LIQUID PENETRANT EXAMINATION OF WELDS

1.0 SCOPE:

- 1.1 This standard covers the "Acceptance Standards For Liquid Penetrant Examination Of Welds' .
- 1.2 The procedure for liquid penetrant examination shall be as per Corporate Standard AA 085 01 31: Procedure For Liquid Penetrant Examination.
- 1.3 This standard is based on ASME Section 8, Division 1, Appendix 8.

2. DEFINITION OF INDICATIONS:

Relevant indications are those which result from mechanical discontinuities. Indications with major dimensions greater than 1.6 mm only shall be considered relevant.

- 2.1 Linear indications are those indications in which the length is more than three times the width.
- 2.2 Rounded indications are those indications which are circular or elliptical with the length equal to or less than 3 times the width.
- 2.3 Any questionable or doubtful indications shall be retested to verify whether or not they are relevant.
- 2.4 Localised surface imperfections, such as may occur from machining marks, surface conditions or incomplete bond between base metal and cladding may produce similar indications which are not relevant to the detection of unacceptable discontinuities.

3. ACCEPTANCE STANDARDS:

All surfaces to be examined shall be free from:

- a) relevant linear indications.
- b) relevant rounded indications greater than 4.8 mm.
- c) four or more rounded defects in line separated by 1.6 mm or less (edge to edge) except where the specification for the material establishes different requirements for acceptance so far as defects are concerned.

Revisions:

APPROVED:

**INTERPLANT
 STANDARISATION COMMITTEE WG - NDT**

Rev. No.

Rev. Date

Revised:

Prepared
HYDERABAD

Issued
Corp. R&D

Date:
SEP. '87



CORPORATE STANDARD

AA 085 01 31

PAGE 1 OF 8

PROCEDURE FOR LIQUID PENETRANT EXAMINATION

1.0 SCOPE:

1.1 This standard details the procedure for liquid penetrant examination of non-porous ferrous and non-ferrous and non-metallic materials such as ceramics, plastics, glass, etc.

1.2 Typical surface discontinuities detectable by this method are cracks, seams, laps, cold shuts, porosity, laminations, etc.

1.3 This standard conforms substantially with ASTM E 165 — 1980 — (Reapproved 1989) and ASME code section V, Article 6.

2.0 PERSONNEL REQUIREMENT:

Personnel performing non-destructive examination and evaluation shall be qualified to the recommended practice SNT-TC-1A or any other recognised practice.

3.0 DESCRIPTION:

In principle a liquid penetrant is applied to the surface to be examined and allowed to enter discontinuities, excess penetrant removed, the part dried and a developer applied. The developer functions both as a blotter to absorb penetrant that has been trapped in discontinuities and as a contrasting background to enhance the visibility of penetrant indications.

4.0 APPROVED METHODS & MATERIALS:

4.1 Either a colour contrast or fluorescent penetrant method may be used. Any one of the following penetrants shall be used;

- (a) Solvent Removable
- (b) Post Emulsifying
- (c) Water Washable

4.2 For nickel base alloys and/or for stainless steel materials used in nuclear components the penetrant materials, cleaner, penetrant developer, etc., used shall not contain sulphur or halogen above 1% by weight.

4.3 Selection of liquid penetrant material shall be from the same family (brand). Inter-mixing of family of liquid penetrant materials is not allowed.

5.0 PROCEDURE:

5.1 Surface Preparation:

Revisions:

Cl.7.10 of MOM of WG(NDT)

INTERPLANT
STANDARDIZATION COMMITTEE - WG
(NDT)

Rev. No. 02

Amd. No. 01

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DT. NOV. '92

DT. 19.3.94

Year. 1998

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- 5.1.1 Surface preparation by grinding or machining or other method may be employed where surface irregularities may mask indications of unacceptable discontinuities.
- 5.1.2 The surface to be examined and all adjacent areas within at least 25 mm shall be dry and free from any dirt, lint, scale, rust, welding flux, weld spatter, grease, oil or other extraneous matter that could obscure surface openings or otherwise interfere with examination.
- 5.1.3 The surface to be examined shall be cleaned with detergents, organic solvents, descaling solutions or paint removers. Degreasing and ultrasonic cleaning may be employed to increase cleaning efficiency. Cleaning method employed is an important part of the examination procedure. Cleaning solvents shall meet the requirements of Cl.4.2.

Caution: Blasting with shot or dull sand, rotofinishing, buffing, wire brushing the soft material or machining with dull tools shall not be used as they may peen the discontinuities at the surface.

5.2 Drying:

Drying, after cleaning the surface to be examined, shall be accomplished by normal evaporation or with forced hot air, as appropriate. A minimum period of time shall be established to ensure that the cleaning solution has evaporated prior to application of the penetrant.

5.3 Application Of Penetrants:

- 5.3.1 The penetrant shall be applied by dipping, brushing or spraying. If the penetrant is applied by spraying using compressed air type apparatus, filters shall be placed at the air inlet to preclude contamination of penetrant by oil, water or dirt sediment that may have collected in the lines. Spraying should only be performed in a booth equipped with exhaust system.
- 5.3.2 The length of penetration time is critical and depends upon the material being inspected, the process through which it has passed and the type of discontinuities expected. The recommended penetration time is given in Table 1.
- 5.3.3 The temperature of the penetrant and the surface of the part to be examined shall not be below 10°C(50°F) nor above 50°C(125°F) throughout the examination period. Local heating or cooling is permitted provided the temperatures remain in the range of 10 to 50°C during the examination. Where it is not practical to comply with these temperature limitations, other temperatures and times shall be used provided the procedures are qualified as described in Annexure-I.

5.4 Removal Of Excess Penetrant:

After the penetration time specified in the procedure has elapsed, any penetrant remaining on the surface shall be removed, taking care to minimise removal of penetrant from discontinuities.



CORPORATE STANDARD

AA 085 01 31

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5.4.1 Postemulsifying Penetrants:

The emulsifier shall be applied by spraying or dipping. The emulsifying time shall not exceed 5 minutes. After emulsification, the mixture shall be removed by water spray.

5.4.2 Solvent Removable Penetrants:

Excess penetrant shall be removed by wiping with a cloth or absorbent paper repeating the operation until most traces of penetrants have been removed. The remaining traces shall be removed by wiping the surface lightly with cloth or absorbent paper moistened with solvent.

Caution: Care shall be taken to avoid excess solvent as this may remove penetrants from discontinuities. Flushing the surface with solvent following the application of the penetrant and prior to developing is prohibited.

5.4.3 Water Washable Penetrants:

Excess water washable penetrant shall be removed with a water spray. The water pressure shall not exceed 0.35 N/mm² (50 Psi) and the water temperature shall not exceed 43.3°C (110°F).

5.5 Drying:

Surface shall be dried before the application of developer.

- 5.5.1 a) If postemulsifying or water washable method is used, the surface shall be dried by blotting with clean materials or by using circulating warm air, provided the temperature of the surface is not raised above 50°C (125°F).
- b) For solvent removable method, the surface may be dried by normal evaporation, blotting, wiping or forced air.

5.6 Application Of Developer:

The developer shall be applied as soon as possible after the removal of the excess penetrant. Two types of developer, dry or wet, shall be used with fluorescent penetrant. With colour contrast penetrants, only wet developer shall be used.

5.6.1 Application Of Dry Developer:

Dry developer shall be applied by a soft brush, a hand operated powder bulb or a powder gun or other means provided the powder is dusted evenly over the entire surface being examined.

5.6.2 Application Of Wet Developer

Prior to applying suspension type wet developer to the surface, the developer must be thoroughly agitated to ensure adequate dispersion of suspended particles.

(a) Aqueous Developer Application:

Aqueous developer may be applied to either a wet or dry surface. It shall be applied by dipping, spraying or other means provided a thin coating is obtained over the entire surface being examined. Drying time may be decreased by using warm air, provided the surface temperature of the part is not raised above 50°C.

(b) Non-aqueous Developer Application:

Non-aqueous developer shall be applied only on a dry surface. It shall be applied by spraying, except where safety or restricted access preclude it. Under such conditions developer may be applied by brushing. Drying shall be by normal evaporation.

6.0 EXAMINATION:

Observe the surface during the application of the developer to detect nature of any indications which tend to bleed out profusely. Final examination shall be done between 7 minutes at the earliest and 30 minutes at the latest after application of the developer. The nature of discontinuities corresponding to the indications shall be defined depending upon the method of setting, appearance, direction, shape and dimensions of the same. If the bleed out does not alter the examination results, longer periods are permitted. If the surface to be examined is large enough to preclude complete examination within the prescribed time the surface shall be examined in increments.

6.1 Colour Contrast Penetrants (Visible Dye Penetrants):

6.1.1 With colour contrast penetrants the developer forms a reasonably uniform coating. Surface discontinuities are indicated by bleeding out of the penetrant which is normally of a deep red colour. Indication with a light pink colour may indicate excessive cleaning. Inadequate cleaning may leave an excessive background making interpretation difficult.

6.1.2 Adequate illumination is required to ensure no loss of the sensitivity in the examination. Examination shall be done under natural or suitable light (illumination level shall be in the order of 500 LUX).

6.2 Fluorescent Penetrants:

Examination of the surface shall be carried out with a high intensity black light in a darkened area or booth. Black light shall have a wave length of 3650 Å°. The bulbs shall be allowed to warm up for not less than 5 minutes prior to use in the examination. The black light intensity shall be at least of 800 uW/cm² on the surface of the part being examined and the light source being kept at a distance of at least 375 mm from the surface being examined. The operator should allow his eyes to become accustomed to the darkness of the inspection booth for at least 5 minutes before inspecting the parts. He should avoid looking directly into the black light and also avoid going from the darkness to



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the light and back again **without allowing** sufficient time for his eyes to adjust to the darkness. The intensity shall be measured at least once every 8 hours and whenever the work station is changed.

7.0 EVALUATION OF INDICATIONS & INTERPRETATION:

7.1 As the developer dries to a smooth, even white coating, indications will appear at the locations of discontinuities. Depth of surface discontinuities may be correlated with the richness of colour and speed of bleeding out. However, localised surface imperfections such as may occur from machining marks or surface conditions may produce similar indications which are non-relevant.

7.2 Usually, a crack or similar opening will show a line and light cracks or partially welded lap will show a broken line. Gross porosity may produce large indications covering an entire area. Very fine porosity is indicated by random dots.

7.3 Any non-relevant indication shall be regarded as a defect until the indication is either eliminated by surface conditioning or it is Proved non-relevant by other NDT methods.

7.4 Linear indications are those indications in which the length is more than three times the width. Rounded indications are indications which are circular or elliptical with the length less than three times the width.

7.5 All indications shall be evaluated in terms of the acceptance standards of the referencing documents.

8.0 ACCEPTANCE STANDARDS:

8.1 For castings - Refer Corporate Standard AA 085 01 32.

8.2 For Austenitic Forgings - Refer Corporate Standard AA 085 01 30.

8.3 For Welds - Refer Corporate Standard AA 085 01 29.

9.0 POST EXAMINATION CLEANING:

Surfaces examined shall be cleaned after evaluation of the test with dry cotton rag with or without water rinse.

TABLE - 1 (Clause 5.3.2)

Suggested Penetration Time For Post-emulsified And Solvent

Removable Penetrants

Material	Form	Type of discontinuity	*Penetration time (min.)
Aluminium	Castings	Porosity	5
		Cold shut	5
	Extrusions & Forgings	Laps	10
		Lack of fusion	5
	Welds	Porosity	5
	All forms	Cracks	10

CORPORATE STANDARD**TABLE - 1 (Clause 5.3.2) Contd.**

Material	Form	Type of discontinuity	*Penetration time (min.)
Magnesium	Castings	Porosity	5
		Cold shut	5
	Extrusions & Forgings	Laps	10
		Lack of fusion	10
	Welds	Porosity	10
	All forms	Cracks	10
Steel	Castings	Porosity	10
		Cold shut	10
	Extrusions & Forgings	Laps	10
		Lack of fusion	20
	Welds	Porosity	20
	All forms	Cracks	20
Brass & Bronze	Castings	Porosity	5
		Cold shut	5
	Extrusions & Forgings	Laps	10
		Lack of fusion	10
	Brazed parts	Porosity	10
	All forms	Cracks	10
Plastics	All forms	Cracks	5
Glass	All forms	Cracks	5
Carbide tipped tools	All forms	Lack of fusion	5
		Porosity	5
		Crack	20
Titanium & high temperature alloys	All forms		20 to 30
Ceramic	All forms	Cracks	5
		Porosity	5

* For lower temperatures, penetration time should be increased.

ANNEXURE - 1 (Clause 5.3.3)**PROCEDURE FOR NON-STANDARD TEMPERATURES****A.1 General:**

When it is not practical to conduct a liquid penetrant examination within the temperature range of 15.6 to 51.6°C (60 to 125°F), the examination procedure at the proposed lower or higher temperature range requires qualification. This shall require the use of a quench cracked aluminium block, which is designated as 'Liquid Penetrant Comparator Block'.

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CS - 757



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AA 085 01 31

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A.2 Liquid Penetrant Comparator Block:

The liquid penetrant comparator block shall be **made of aluminum**, ASTM B209, Type 2024 or SB-211. Type 2024, 10 mm (3/8 in.) thick, and shall have approximate face dimensions of 50 mm x 75 mm (2 in. x 3 in.). At the centre of each face, an area approximately 25 mm in diameter shall be marked with a 510°C (950°F) temperature indicating crayon or paint. The marked area shall be heated with a blow torch, a Bunsen burner or similar device to a temperature between 510°C (950°F) and 524°C (975°F). The specimen shall then be immediately quenched in cold water which produces a network of the fine cracks on each face. The block shall then be dried by heating to approximately 149°C (300°F). After cooling, the block shall be cut into two halves. One half of the specimen shall be designated block 'A' and the other block 'B' for identification in subsequent processing. Figure 1 illustrates the comparator blocks "A" and "B". As an alternate to cutting the block in half to make blocks "A" and "B", separate blocks 50 mm x 75 mm (2 in. x 3 in.) can be made using the heating and quenching technique as described above. Two comparator blocks with closely matched crack patterns may be used. The blocks shall be marked "A" and "B".

A.3 Comparator Application:

- (a) If it is desired to qualify a liquid penetrant examination procedure at a temperature of less than 15.6°C (60°F) the proposed procedure shall be applied to block "B" after the block and all materials have been cooled and held at the proposed examination temperature until the comparison is completed. A standard procedure which has previously been demonstrated as suitable for use shall be applied to block "A" in the 15.6 to 51.6°C (60 to 125°F) temperature range. The indications of cracks shall be compared between blocks "A" and "B". If the indications obtained under the proposed condition on block "B" are essentially the same as obtained on block "A" during examination at 15.6 to 51.6°C (60 to 125°F), the proposed procedure shall be considered qualified for use.
- (b) If the proposed temperature for the examination is above 51.6°C (125°F), block "B" shall be held at this temperature throughout the examination. The indication of cracks shall be compared as described in T-647.3(a) while block "B" is at the proposed temperature and block "A" is at the 15.6 to 51.6°C (60 to 125°F) temperature range.
- (c) A procedure qualified at a temperature lower than 15.6°C (60°F) shall be qualified from that temperature to 15.6°C (60°F).
- (d) To qualify a Procedure for temperatures above 51.6°C (125°F), the upper and lower temperature limits shall be established and the procedure qualified at these temperatures.
- (e) As an alternate to the requirements of (a) and (b) when using color contrast penetrants, it is permissible to use a single comparator block for the standard and non-standard temperatures and to make the comparison by photography.



- (f) When the single comparator block and photographic technique is used, the processing details (as applicable) described in (a) and (b) above shall apply. The block shall be thoroughly cleaned between the two processing steps. Photographs shall be taken after processing at the nonstandard temperature and then after processing at the standard temperature. The indication of cracks shall be compared between the two photographs. The same criteria for qualification as (a) above shall apply.
- (g) Identical photographic techniques shall be used to make the comparison photographs.

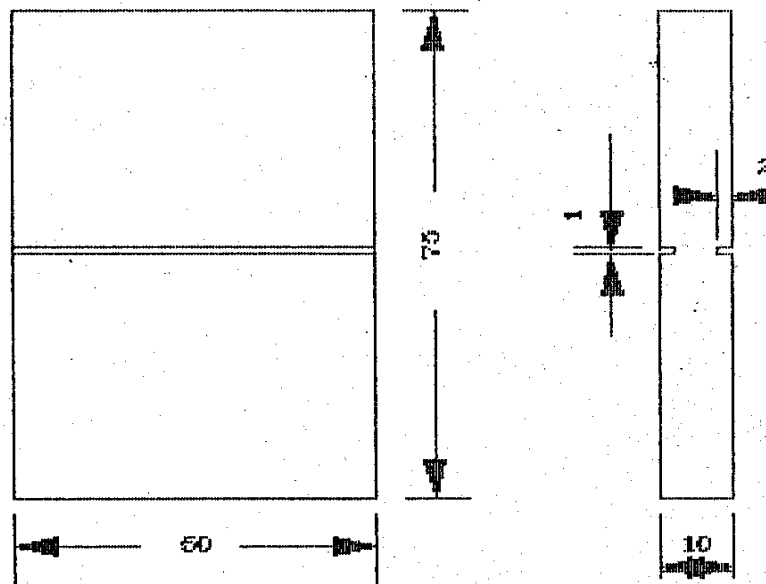


FIGURE: 1-LIQUID PENETRANT COMPARATOR BLOCK



CORPORATE PURCHASING SPECIFICATION

AA10119

Rev No. 15

PAGE 1 of 2

STRUCTURAL STEEL - WELDABLE QUALITY (PLATES, SECTIONS, STRIPS, FLATS AND BARS)

ORDERING DESCRIPTION

1.0 GENERAL:

The material shall conform to IS 2062 – 2011, E250-Gr.BR (with mandatory Impact Test) or DIN EN 10025-2:2005, Gr. S275JR and comply with following additional requirements.

2.0 APPLICATION:

For general engineering purposes, suitable for welding.

3.0 CONDITION OF DELIVERY:

3.1 Bars & Sections shall be supplied in Hot rolled in straight lengths without twists and bends.

3.2 The material shall be supplied as per IS: 2062 – 2011, E250 Gr.BR (with mandatory Impact Test) or as per DIN EN 10025-2:2005 Gr. 275JR.

3.3 Any other additional requirement as per BHEL Purchase order.

4.0 DIMENSIONS AND TOLERANCES:

4.1 Sizes:

Material shall be supplied to the dimensions specified in BHEL Order.

4.2 Tolerances:

The tolerances on hot rolled material shall comply with IS: 1852 or any other equivalent national standard.

4.3 Straightness for hot rolled bars:

Unless otherwise specified, the permissible deviation in straightness shall not exceed 5 mm in any 1000 mm length.

5.0 TEST SAMPLES:

The selection of test pieces for all tests like Chemical, Mechanical etc. shall be as per IS: 2062, E250-Gr.BR or DIN EN 10025-2, Gr. S275JR.

Revisions:

Clause No. 1, 3, 5 & 8 revised (as per MOM of 38th MRC meeting), Clause 10 added

APPROVED:

INTERPLANT MATERIAL RATIONALISATION
COMMITTEE – MRC(S&GPS)

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HPEP, Hyderabad

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CS-72

CORPORATE PURCHASING SPECIFICATION



6.0 ULTRASONIC EXAMINATION:

Plates shall be ultrasonically examined in accordance with BHEL standard AA0850120 (or ASTM-A435) as detailed below and shall comply with the acceptance standards specified therein.

6.1 For plates above 40 mm thick:

Shall be ultrasonically examined unless when otherwise specified in order.

7.0 TEST CERTIFICATES:

Unless otherwise specified, three copies of test certificates shall be supplied.

In addition, the supplier shall ensure to enclose one copy of the test certificate along with their dispatch documents to facilitate quick clearance of the material.

The test certificate shall bear the following information:

AA10119 - Rev.No.15/ IS: 2062-Gr: BR (with mandatory Impact test) or DIN EN 10025-2, Gr. S275JR,

BHEL order No.

Melt No, Size & Quantity, Batch No with heat treatment details, Results of Chemical analysis,

Mechanical tests & NDT, Supplier's name, Identification No, TC No, Signature of Competent Authority, etc.

8.0 PACKING AND MARKING:

Plates shall be transported suitably to avoid damage during transit.

Each plate shall be marked with Melt No. Material grade and specification, BHEL Order No, Supplier's Name Identification No, Size & weight, on any one corner and encircled with paint preferably of white colour.

9.0 REJECTION AND REPLACEMENT

If the material does not comply with the requirements of this specification during receipt inspection at BHEL or if any defect is found during further processing of material, BHEL reserves the right to reject the whole consignment and the supplier shall replace the material free of cost. The rejected material shall be taken back by the supplier after fulfilling the commercial terms and conditions.

10.0 REFERRED STANDARDS (Latest publications including amendments):


1) IS: 1852


2) ASTM - A435

3) AA0850120

26/6/14

CS-721

	CORPORATE PURCHASE SPECIFICATION			AA 551 54	
				Rev. No. 03	
				PAGE 1 OF 2	
RUST PREVENTIVE HARD FILM, BLACK (TRP)					
<p>1.0 GENERAL:</p> <p>This specification governs the quality requirements of temporary rust preventive (TRP), coating a hard film on drying. The material consists of film forming ingredients dissolved in solvents to give a low viscous liquid at room temperature. On evaluation of solvents, a thin though abrasion resistant film capable of being handled without damage shall be obtained. Normally this material gives protection upto six months and thereafter requires inspection and reapplication, if necessary.</p>					
<p>2.0 APPLICATION:</p> <p>Depending upon components and their sizes, the rust preventive can be applied by brush, dip or spray. Two liberal coats are desirable for adequate protection. The surface to be coated with anti rust solution should be absolutely clean and free from rust.</p>					
<p>3.0 REMOVAL:</p> <p>This TRP can be removed by cotton cloth soaked in white spirit to BHEL specification AA 56701.</p>					
<p>4.0 COLOUR : Steel Black.</p>					
<p>5.0 COMPLIANCE WITH NATIONAL STANDARDS:</p> <p>The material shall comply with the requirements of the following national standards and also meet the requirements of this specification.</p> <p>IS: 1153 - 2000:RA-2005 Temporary Corrosion Preventive, Fluid, Hard Film, Solvent deposited,</p>					
<p>6.0 COMPOSITION:</p> <p>The composition shall be based on asphalt, mineral oil and inhibitive pigments with suitable additives.</p>					
<p>7.0 TEST SAMPLES:</p> <p>Half a litre of sample shall be taken for testing and approval.</p>					
<p>8.0 PROPERTIES:</p> <p>When tested in accordance with the relevant clauses of BHEL standard AA 085 00 01, the test sample shall show the following properties:</p>					
<p>8.1 Consistency : 90 ± 10 seconds in Ford Cup No.4 at 27± 0.5°C.</p>					
<p>8.2 Drying Time : Tack free: Within one hour Hard dry : 16 hours</p>					
<p>8.3 Flash Point : 32°C, min.</p>					
Revisions: As per 40th MOM of MRC-CPO			APPROVED: INTERPLANT MATERIAL RATIONALISATION COMMITTEE-MRC (CPO)		
Rev. No. 03	Amd.No.	Reaffirmed	Prepared BHOPAL	Issued Corp. R&D	Dt. of 1st Issue NOVEMBER, 1982
Dt. 26.05.2012	Dt:	Year:			

AA 551 52	CORPORATE PURCHASE SPECIFICATION	
Rev. No. 03		
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8.4 Weight : 11 ± 0.5 kg per 10 litres.

8.5 Non-volatile Matter : 58 ± 2% by mass.

8.6 Test for Adhesion : To pass the test

8.7 Spreading Capacity : 8.0 sq.meter/litre, minimum

8.8 Protection against corrosion at high temperature and humidity:
To pass the test for 360 hours, minimum..

9.0 TYPE TESTS:
Whenever specified, the following tests shall be carried out, as per the methods mentioned against each:

i) Protection against corrosion under conditions of condensation (IS:101, part 6/sec.1):
No sign of corrosion on the surface after 21 days of exposure.

10.0 TEST CERTIFICATES:
Three copies of test certificates shall be supplied alongwith each consignment, giving the following information:

In addition, the supplier shall ensure to enclose one copy of the test certificate alongwith the despatch documents to facilitate quick clearance of the material.

AA 551 54, Rev. 03 : Rust preventive hard film, black (TRP)
BHEL Order No.
Batch / Lot No.
Supplier's/ Manufacturer's Name and Trade mark, if any
Date of manufacture and expiry
Test results of clause 8.0 & 9.0.

11.0 KEEPING PROPERTY:

When stored in a covered dry place in the original sealed containers under normal temperature conditions, the material shall retain the properties prescribed in this specification for a period of not less than 12 months after the date of manufacture which shall be subsequent to the date of placing the order.

12.0 PACKING & MARKING:
Unless otherwise specified, the material shall be supplied in 4 kg steel containers, which shall be leak free, dry and clean.

Each container shall marked with the following information:

AA 551 54: Rust preventive hard film, black (TRP)
BHEL Order No.
Supplier's / Manufacturer's Name and Trade mark, if any
Batch No./Lot No.
Date of manufacture and expiry
Quantity supplied

8.0 ENVIRONMENTAL REQUIREMENTS:
The supplier shall furnish Material Safety Data Sheet (MSDS) covering all information relating to human safety and environmental impacts of the hazardous materials particularly during their transportation, storage, handling and disposal alongwith each supply.
Each container shall be marked with corresponding symbol and minimum worded cautionary notice for flammable / corrosive / toxic / harmful / irritant and oxidizing etc. as applicable

13.0 REFERRED STANDARDS (Latest Publications Including Amendments):
1. AA 085 00 01 2. AA 56701 3. IS: 1153



CORPORATE PURCHASE SPECIFICATION

AA 551 55

Rev. No. 02

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RUST PREVENTIVE, DRYING TYPE – PIGMENTED (TRP)

1.0 GENERAL:

This specification governs the quality of pigmented drying temporary hard film TRP coating. The material consists of a film forming synthetic resin, inhibition pigment (zinc chromate/ zinc phosphate) and suitable additives. This bright yellow pigmented preservative gives long term preservation at medium and high ambient upto one year and needs inspection and reapplication, if necessary.

2.0 APPLICATION:

Depending upon the components and their size, the rust preventive can be applied by brush, spray or dip. Two liberal coats are desirable for adequate protection. The surface to be coated with rust solution should be scrupulously clean and devoid of rust.

3.0 COLOUR:

Yellow.

4.0 COMPLIANCE WITH NATIONAL STANDARDS:

There is no Indian standard covering this material.

5.0 CHEMICAL COMPOSITION:

The composition shall be based on synthetic resin inhibitive pigment (zinc chromate/zinc phosphate) with suitable additives.

6.0 TEST SAMPLES:

Half a litre of sample shall be taken from each consignment for testing and approval.

6.1 To draw a representative sample, the contents of the container selected for sampling shall be mixed as thoroughly as possible by shaking or stirring or both or by rolling, so as to bring all portions into uniform distribution.

6.2 The samples shall be taken in a suitable, clean, dry air-tight glass bottle of one liter capacity. It should be almost but not completely filled by the sample.

6.3 In case of failure of first sample, two samples shall be drawn from other two drums of the same consignment at random and failure of the second sample in complying with the specification will lead to the rejection of the whole consignment.

7.0 PROPERTIES:

When tested in accordance with test methods mentioned against each, the test sample shall show the following properties:

7.1 Consistency (AA 085 00 01):

60 – 70 seconds in cup No. 4 to IS: 3944 -1982, RA-2005at 27± 0.5° C.

7.2 Drying Time (AA 085 00 01):

Touch dry : within one hour
Hard dry : 16 hours

Revisions:

As per 40th MOM of MRC-CPO

APPROVED:

INTERPLANT MATERIAL
RATIONALISATION COMMITTEE-MRC (CPO)

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BHOPAL


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Corp. R&D

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JANUARY, 1990

Dt. 26.05.2012

Dt :

Year:

AA 551 55	CORPORATE PURCHASE SPECIFICATION	
Rev. No. 02		
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7.3 Weight in kg per 10 litres (AA 085 00 01):
14.0 ± 0.5

7.4 Non-volatile Content (AA 085 00 01):
73 ± 2% by mass.

7.5 Test for Adhesion (AA 085 00 01):
To pass the test.

7.6 Protection Against Corrosion at High Temperature and Humidity (AA 085 00 01):
No sign of corrosion under the film.

7.7 Scratch Hardness (IS: 1153):
To pass the test.

8.0 REMOVAL:
This shall be removable by using white spirit to BHEL specification AA 567 01.

9.0 TYPE TESTS:

9.1 Flash Point (AA 085 00 01):
Above 35⁰ C.

9.2 Spreading capacity (AA 085 00 01):
6.5 sq.m per litre. minimum.

9.3 Salt spray Test for 7 days (IS:2074):
No sign of corrosion underneath the paint film.

10.0 TEST CERTIFICATES
Three copies of test certificates shall be supplied alongwith each consignment, giving the following information:
In addition, the supplier shall ensure to enclose one copy of the test certificate alongwith the despatch documents to facilitate quick clearance of the material.
AA 5551 55, Rev. 02 : Rust preventive, drying type-pigmented (TRP)
BHEL Order No.
Batch / Lot No.
Supplier's/ Manufacturer's Name and Trade mark, if any
Date of manufacture and expiry
Test results of clause 7.0.



CORPORATE PURCHASE SPECIFICATION

AA 551 55

Rev. No. 02

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11.0 KEEPING PROPERTY:

When stored in a covered dry place in the original sealed containers under normal temperature conditions, the material shall retain the properties prescribed in this specification for a period of not less than 12 months after the date of manufacture which shall be subsequent to the date of placing the order.

12.0 PACKING & MARKING

Unless otherwise stated, the TRP shall be supplied in 4 kg steel containers.

Each container shall bear the following information:

AA 551 55: Rust preventive, drying type-pigmented (TRP)

BHEL Order NO.

Supplier's / Manufacturer's Name

Trade mark, if any

Date of manufacture and expiry

Batch No.

Quantity supplied

13.0 ENVIRONMENTAL REQUIREMENTS:

The supplier shall furnish Material Safety Data Sheet (**MSDS**) covering all information relating to human safety and environmental impacts of the hazardous materials particularly during their transportation, storage, handling and disposal alongwith each supply.

Each container shall be marked with corresponding symbol and minimum worded cautionary notice for flammable / corrosive / toxic / harmful / irritant and oxidizing etc. as applicable

14.0 REFERRED STANDARDS (Latest Publications Including Amendments)

1. AA 085 00 01

2. AA 567 01

3. IS: 1153

4. IS 2074

5. IS 3944



CORPORATE PURCHASING SPECIFICATIONS

AA56101

Rev. No.07

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ANTI-CORROSIVE PRIMING PAINT

1.0 GENERAL:

This specification governs the quality requirements of air drying Anti Corrosive ready mixed Red oxide Zinc phosphate priming paint which shall be capable of being brushed, sprayed by conventional methods. The priming paint shall be suitable to be thinned with MTO/white spirit conforming to BHEL specification AA56701.

The paint shall be compatible with high quality full glossy outdoor finishing paint to BHEL specification AA56126 (IS: 2932), when surfaces primed with this paint are coated with 2 coats of finishing paint.

2.0 APPLICATION:

The material shall be intended for use as a primer coat in the painting system for protection of steel surfaces against corrosion for outdoor and indoor application on Electrical equipment. Normally, for best performance the surface to be coated shall be ensured free from oil, loose rust/dust etc., followed by blast cleaning to Sa 2 1/2.

This shall be followed by application of two coats of the priming so as to achieve dft of 30 microns, min.

3.0 COMPLIANCE WITH NATIONAL STANDARDS:

The material shall comply with the requirements of the following national standard and also meet the requirements of this specification.

IS: 12744 – 1989 (Reaffirmed 2004): Ready Mixed Paint, Air Drying, Red Oxide-Zinc Phosphate Priming-Specification.

4.0 COLOUR: The colour of the material shall be that of red oxide.

5.0 FINISH: Smooth and Matt to Egg shell flat

6.0 FREEDOM FROM DEFECTS:

The priming paint shall remain free from defects like hard settling of pigments, thick and hard skinning etc., when kept in closed container and livering (excessive viscosity build up) during its rated shelf life.

The dried surface of the coating shall be smooth, uniform, homogenous appearance and shall be free from physical defects like, pinholes, wrinkles, hard particles, blisters, air bubbles etc.

7.0 CHEMICAL COMPOSITION:

The paint shall be formulated with anti-corrosive pigments like Red oxide of iron, Zinc phosphate, extenders etc., dispersed in unsaponifiable modified alkyd medium in solvent, thinner and drier in suitable proportions so as to satisfy the requirements prescribed in this

Revisions:
As per 40th MOM of MRC-CPO

APPROVED:
INTER PLANT MATERIAL RATIONALISATION
COMMITTEE – MRC(CPO)

Rev. No.07	Amd. No.	Reaffirmed
Dt:26-05-2012	Dt:	Year:

Prepared
HEEP, Haridwar

Issued
Corp. R&D

Dt. of 1st Issue
Jan 1980

CORPORATE PURCHASING SPECIFICATIONS



specification. The raw materials used in the formulation of the priming paint shall be of good quality and conform to following Indian standards.

- | | |
|----------------------------------|-------------|
| a) Zinc Phosphate | : IS: 10897 |
| b) Red Oxide of Iron | : IS: 44 |
| c) Petroleum hydrocarbon solvent | : IS: 1745 |

The supplier of the material has to certify that the paint supplied shall be free from lead or its compounds and also meets the legislative requirements of ISO 14001.

8.0 TEST SAMPLES AND TEST METHODS:

Tender samples will not be required when once the type approval is given and the supplier concerned declared that the material for which the tender is given of the same quality as the type approved sample.

500ml of thoroughly mixed sample representing lot be drawn from randomly selected drum and shall be sent to laboratory for testing. The testing shall be done in accordance with relevant part and section of IS: 101 or as specified in this specification.

9.0 PROPERTIES:

9.1. Drying Time

- | | |
|-------------|---------------------|
| Surface dry | : 2 hours, maximum |
| Hard dry | : 12 hours, maximum |

9.2. Consistency

Smooth and uniform and suitable for brushing without appreciable drag on the brush or spraying as required.

Efflux time by Ford cup No. 4, at $27 \pm 20^\circ\text{C}$: 80 - 120 secs.

9.3. Mass per Ten Litres:

13.5 kgs. min.

9.4. Flash Point:

30°C , min

9.5. Scratch Hardness:

When tested on coated panels air dried for 48 hrs and tested at a load of 1500g on steel panels and 1000g on tinned mild steel panels, no such scratch as to show the bare metal shall be produced.

9.6. Flexibility and Adhesion:

When tested on coated panels air dried for 48 hrs, no visible damage or detachment of coating shall take place and passes the test when tested by cylindrical bend test method.

9.7. Resistance to Salt Spray:

When tested as per test method of IS 2074, the test panel prepared from the followed by air drying for 48 hrs, material shall show no sign of corrosion after continuous exposure for 96 hrs, in salt spray cabinet.



CORPORATE PURCHASING SPECIFICATIONS

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9.8. Protection against Corrosion under Conditions of Condensations:

The coated panels air dried for 48 hrs, are subjected to continuous exposure, shall show no sign of deterioration of the coating & metal surface show no sign of corrosion.

9.9. COMPOSITION:

9.9.1. Pigment Content: $50 \pm 5\%$ by mass

9.9.2. Zinc Phosphate (IS 10897): 16.0%, min. by mass on pigment

9.9.3. Red Oxide AS Fe_2O_3 (IS 44): 50.0%, min. by mass on pigment

10.0 VOLUME SOLIDS: 40.0% min. (Pigment + Binder) by weight.

11.0 COMPATIBILITY TEST WITH COATS:

The primer paint shall be fully compatible with top coats like, High quality full glossy finishing paint conforming to AA56126 /IS 2932, when tested as per method prescribed in Annexure-1.

12.0 WET OPACITY (FOR INFORMATION ONLY):

Theoretical coverage: 10 sq.m / litre @ Dft: 35 microns.

13.0 TEST CERTIFICATES:

Unless otherwise stated, three copies of test certificates shall be supplied along with each consignment.

In addition, the supplier shall ensure to enclose one copy of the test certificates along with their despatch documents to facilitate quick clearance of the material.

The test certificates shall bear the following information:

AA56101 Rev. No. 07 - ANTI-CORROSIVE PRIMING PAINT

BHEL order:

Supplier's Name and address

Identification/Trade Mark, if any.

Batch No/Lot No.:

Date of Manufacture and Expiry.

Lot Quantity:

Test results of clause 7.0 to 12.0.

Special Instructions, if any.

14.0 KEEPING PROPERTY:

When the material stored in a covered dry place in the original sealed container at under ambient conditions, the same shall retain the properties prescribed in this specification for a period of at least 12 months after the date of manufacture, which shall not be subsequent to the date of placing the order and not earlier than one month of the scheduled delivery date mentioned in BHEL order.

CORPORATE PURCHASING SPECIFICATIONS



15.0 ENVIRONMENTAL REQUIREMENTS:

The supplier shall furnish Material Safety Data Sheet (MSDS) covering all information relating to human safety and environmental impacts of the hazardous materials particularly during their transportation, storage, handling and disposal along with each supply. Each container shall be marked with corresponding symbol and minimum worded cautionary notice for flammable / corrosive / toxic / harmful / irritant and oxidizing etc. as applicable.

16.0 PACKING & MARKING:

Unless otherwise stated, the paint shall be supplied in packing size as specified in BHEL order and shall be packed in air tight leak -proof metal container conforming to IS: 1407 and IS: 2552. Each container shall bear following information neatly written or pasted on the container.

AA56101 - ANTI-CORROSIVE PRIMING PAINT

BHEL order:

Name of supplier and address:

Identification/Trade Mark, if any.

Quantity of material:

Batch No/Lot No.:

Date of Manufacture and Expiry.

Special Instructions, if any:

17.0 REFERRED STANDARDS (Latest Publications Including Amendments):

- 1) IS : 44
- 2) IS : 101
- 3) IS : 1407
- 4) IS : 1745
- 5) IS : 2074
- 6) IS : 2552
- 7) IS : 2932
- 8) IS : 10897
- 9) IS : 12744
- 10) IS : 13262
- 11) ASTM D 3359
- 12) AA56126
- 13) AA56701



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ANNEXURE-I


TEST FOR COMPATIBILITY OF ANTI-CORROSION PRIMING PAINT (AA 56101) WITH TOP COATS OF FINISHING PAINT (AA56126/IS: 2932)

The compatibility of anti-corrosive priming paint conforming to AA 56101 with top coat finishing paint to AA 56126/IS: 2932, shall be checked by Cross-cut tape adhesion method prescribed in ASTM D 3359. The adhesion tape used shall conform to IS: 13262 or any other tape bearing ISI mark having sufficient adhesion strength.

A Steel plate of size 150x100mm is taken for testing compatibility. Thoroughly clean the plate with emery to make it free from rust, oil, dust etc. Apply two coats of homogenized anticorrosive priming paint after allowing coating to dry over night before, application of next coat.

Apply two coats of top coat finishing paint evenly covering plate completely. Allow the coatings, to dry for 48 hours at ambient conditions before performing the cross cut adhesion test.

Test method B shall be followed and the acceptance criteria shall be 4 B, i.e., small flakes of the coating material are detached at intersections and less than 5% of the area is affected

	TD-215 Rev.00	AMENDMENT-NOTIFICATION		HY 064 07 63 REV.NO.03					
PAGE 1 OF 1									
<p align="center">PROCESS SPECIFICATION FOR POST WELD HEAT TREATMENT OF CARBON STEEL AND LOW ALLOY STEEL PRESSURE VESSELS PARTS & OTHER COMPONENTS</p> <p>The following clause shall be added in page no. 3 of 11, after clause 3.4.</p> <p><u>Clause 3.4.1</u> Threaded portion of the weldments / components shall be protected or preserved by applying “ERPEDOL” compound</p> <p align="center">(Material Code no. is HY5510062002).</p>									
REF: HY:Tech:001		AMD.NO. 01	APPROVED MANAGER, STDS. ENGG.	ISSUED STDS. ENGG.	<table border="0"> <tr> <td>DATE</td> <td>CUM. Sl.No.</td> </tr> <tr> <td align="center">29.9.2001</td> <td align="center">A 0351</td> </tr> </table>	DATE	CUM. Sl.No.	29.9.2001	A 0351
DATE	CUM. Sl.No.								
29.9.2001	A 0351								



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PROCESS SPECIFICATION FOR POST WELD HEAT TREATMENT OF CARBON STEEL AND LOW ALLOY STEEL PRESSURE VESSELS PARTS & OTHER COMPONENTS

1.0 GENERAL:

- 1.1 This procedure outlines precautions/general guide lines to Technologists/Heat treatment personnel to ensure code requirements are fully met with during Post Weld Heat Treatment (PWHT) and is written in line with clauses UW-40, UCS-56 and UCS - 85.
- 1.2 For complete code requirements, relevant clauses/Tables shall be referred to.
- 1.3 Code requirements /' code cases shall over rule this procedure in case of any discrepancy.
- 1.4 This procedure is applicable for coded vessels constructed with carbon steel and low alloy steels singularly stress relieved (whole or local) clubbed with other coded/non-coded vessels/weldments.
- 1.5 This standard stipulates guidelines for applications as per ASME Section VIII div.1. Specific jobs shall be postweld heat treated in consultation with welding engg dept.
- 1.6 The components/products for which the material specification is in accordance with National/ International codes such as IBR/BS/DIN/ASTM/ANSI/API, the post weld heat treatment requirements stipulated in the relevant codes shall be applicable.

2.0 COMPLIANCE WITH STANDARD:

This standard is based on ASME SECTION VIII, Division 1, Clauses UCS-56, UCS-85 and UW-40.

3.0 EQUIPMENT AND ITS CALIBRATION:

- 3.1 Heat treatment furnaces operating on electric power or gas or oil are suitable.
 - 3.1.1 In case of thermocouple not placed on component, uniformity of temperature in the working zone shall be maintained within $\pm 14^{\circ}\text{C}$ during the operation.
- 3.2 Furnace shall be provided with suitable controller/recorder for temperature measurement. All controlling furnace instruments shall be calibrated as per QMI 001.

Revisions:

Brought in line with ASME Sec VIII, Div.1

Issued:

STANDARDS ENGINEERING SECTION

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Dt. DEC .94	Dt.	Year:			

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3.3 Location of the thermocouple shall be as per the guide lines given below (applicable for ASME coded vessels/ parts) and as per the details given in the technology process sheet of relevant part.

3.3.1 Placement of thermocouples must represent realistic temperature spread expected in the furnace both vertically and axially.

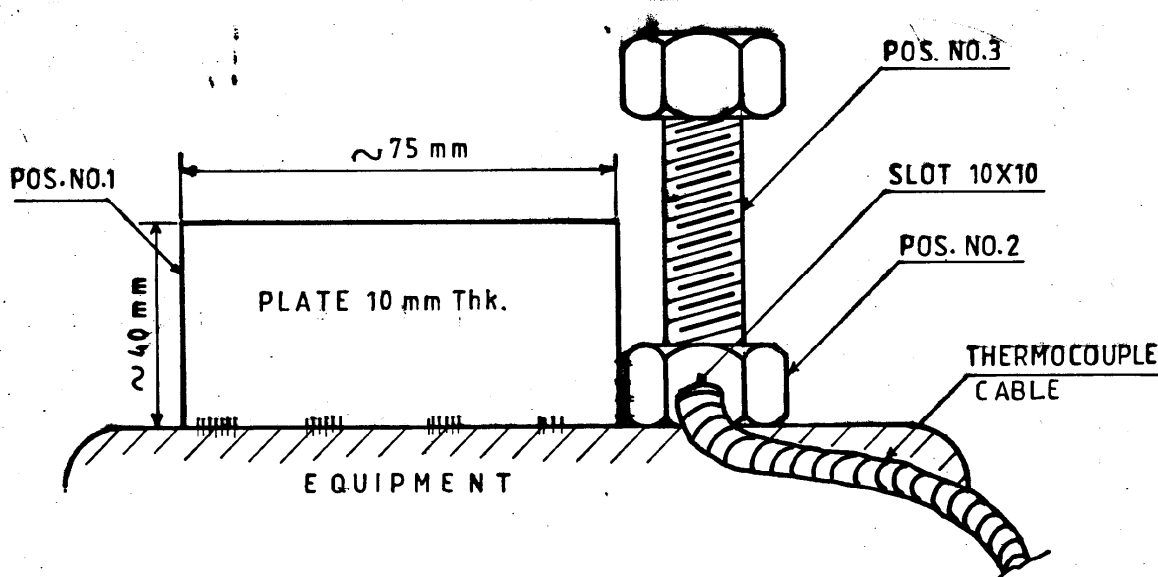
3.3.2 Two thermocouples are required on every single charge upto 5 meters long (zone). An additional thermocouple is required for every additional 5 meter or fraction there of. No two thermocouples may be placed more than 5 meters apart.

3.3.3 When more than one pressure vessel or pressure vessel parts are postweld heat treated in one furnace charge, each such vessel part shall be represented by atleast one thermocouple. Pressure vessels shall be so located such that it satisfies the requirement of clause 3.3.2.

3.3.4 Closure seams of pressure vessels locally or wholly heat treated will have two thermocouples placed 180° apart around the out side of the seam, on top and bottom or on the sides. In case of tube sheet to Hemihead joint (C1 joint) one thermocouple will be placed in tube hole near to center of the tube plate. However, for carbon steel tubed Heat exchanger, thermocouple at the centre is not required.

3.3.5 Fixing of themocouple prior to PWHT on the job shall conform to the procedure for fixing thermocouples as given below:

a) Thermocouple shall be fixed on the equipment with the help of fixing arrangement shown in figure below.



b) Material for Pos. No.1 shall be cut from pressure vessel quality carbon steel plates.



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- c) Plate Pos.No.1 shall be tackwelded to the nut Pos.No.2 which is provided with a slot of 10x10 mm to facilitate insertion of thermocouple cable. Ensure the nut (Pos.No.2) bottom surface is flush with the plate (Pos.No.1) before tackwelding.
- d) Pos. No.1 shall be tackwelded to the equipment by qualified welder with approved WPS. The nut shall not be tackwelded to the equipment.
- e) Thermocouple cable shall be secured to the equipment by tightening bolt Pos.No.3 as shown in the fig. above.
- f) After PWHT, plate Pos.No.1 shall be removed from the equipment by grinding the tacks.

Do not hammer to break the tacks. Flush grind the tacks after removing the plate.

- 3.4 Components/pressure vessels shall be protected from the direct impingement of flame.
- 3.5 Quality control shall ensure conformity of the requirement stipulated in clause 3.1 to 3.4.
- 4.0 Simulated test coupons shall be proved wherever necessary for all materials used in the ASME code vessels except as permitted in UCS-85(d), (e), (f) and (g). The total time at temperature during simulation shall be atleast 80% of the total time at temperature during actual heat treatment of the product and may be performed in a single cycle. Material of P.No.1, Gr.No.1 & 2 and all carbon steels and low alloy steels used in annealed condition are exempted from this requirement.
- 5.0 POST WELD HEAT TREATMENT (PWHT) CYCLE:
- 5.1 All materials in the PWHT charge shall be categorised as per 'P' number and group no. according to ASME Section IX - Clause QW-422. For weldments involving non ASME materials, P numbers and group no. shall be assigned based on nearest equivalent ASME material specification.
- 5.2 Outline special requirements/instructions if any from drgs/Route cards/material specifications. Necessary information shall be filled in Furnace loading sheet No. PD-316 enclosed.
- 5.3 Clubbing of non ASME material with coded vessels shall be considered only when such requirements are acceptable to code specified PWHT Cycle.
- 5.3.1 For assembly of materials of different P numbers, the postweld heat treatment shall be the lowest range of the material requiring the higher postweld heat treatment temperature after giving due consideration to the mass of the material involved.
- 5.4 The temperature of the furnace shall not exceed 425°C at the time of loading.

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5.5 Rate of heating:

5.5.1 Rate of heating above 425°C shall not be more than 222°C/hr divided by the maximum metal thickness of the shell or head plate in inches, but in no case more than 222°C/hr. Maximum metal thickness in coded vessel or other weldments in the charges, whichever is maximum shall be used in the calculation. During the heating period there shall not be greater variation in temperature throughout the portion of the vessel being heated than 138°C within any 4.6 M interval of length.

5.5.1.1 The rate of heating and cooling need not be less than 55°C/hr. However, the reduced rates of heating and cooling for closed chambers and complex structures may be considered to avoid distortion due to excessive thermal gradient.

5.6 Soaking Temperature and Time:

5.6.1 Minimum holding time and temperature shall be as per table UCS-56 as given in annexure-1.

A temperature range of 50°C shall be specified starting from code specified minimum normal holding temperature which may be relaxed to 60°C range to facilitate clubbing with vessels constructed to codes other than ASME Sec.viii Div.1.

5.6.2 Wherever impracticable, PWHT at minimum normal holding temperature can be considered as permitted by table UCS 56.1 as given in the annexure-2.

5.6.3 For assessing min. holding time, the nominal thickness shall be the thickness of weld joint as defined in UW-40 (f).

5.6.4 For combined charge the min. holding temperature is the max. of the min. normal holding temperatures of the applicable materials in the charge as per 5.6.1 above. Holding temperatures lower than the min. normal holding temperatures (clause 5.6.2) can be considered only when such temperature is acceptable for all materials in the charge.

5.6.5 For combined charge, the min. holding time is the max. of the min. holding times for various weldments as calculated in applicable clauses 5.6.1, 5.6.2 and 5.6.3 above.

5.6.6 For vessels requiring notch toughness properties (low temp. application, customer requirement etc.) which are post weld heat treated singularly or clubbed with other components/vessels; Soaking time shall be specified in consultation with welding engineering.



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5.7 Rate of Cooling:

- 5.7.1 Above 425°C, cooling shall be done in a closed furnace or cooling chamber at a rate (vide clause 5.5.1.1 also) not greater than 278°C/hr divided by the maximum metal thickness of the shell or head plate in inches, but in no case more than 278"/hr. From 425°C the vessel may be cooled in still air.

6.0 LOCAL POSTWELD HEAT TREATMENT:

- 6.1 Wherever not practicable, circumferential joints may be locally post weld heat treated by gas fired split furnace or by electrical heating which shall ensure required uniformity.

- 6.2 The width of the heated band on each side of the greatest width of finished weld shall be not less than two times the shell thickness.

- 6.3 The portion outside the heating device shall be protected so that the temperature gradient is not harmful.

7.0 POWER/GAS FAILURE DURING PWHT CYCLE:

7.1 Safety precautions on power / gas failure.

- 7.1.1 Ensure isolation of gas line by closing gate valve on gas inlet line.

- 7.1.2 Fully open all dampers.

- 7.1.3 Close all burners.

7.2 Safety precautions before recharging.

- 7.2.1 Open main door.

- 7.2.2 Purge residual gases in furnace, by operating air blower.

- 7.3 Record time and date of gas / power failure and restart of the furnace on the chart.

- 7.4 Repeat PWHT cycle as per loading chart. Starting temperature for the cycle shall be the existing job temperature.

8.0 INSPECTION AND CERTIFICATION:

- 8.1 Heat treatment chart shall be certified by Shop QC/third party inspection as per Route card/Quality plan requirements.

9.0 REFERRED STANDARDS:

ASME Sec.VIII Div.I

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ANNEXURE - 1

TABLE UCS - 56.1

ALTERNATIVE PWHT REQUIREMENTS FOR CARBON AND LOW ALLOY STEELS

(Applicable only when permitted in table UCS-56)

Decrease in temperature below the min. specified temperature °C	Minimum holding time [Note (1)] at decreased temperature (hrs)	Note
28°C	2	--
56°C	4	--
84°C	10	(2)
112°C	20	(2)

Note: (1) Minimum holding time for 25mm thickness or less, Add 15 minutes per 25mm for thickness greater than 25 mm.

(2) The above lower PWHT temperatures permitted only for P No.1 Gr. No.1 and 2 materials.



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ANNEXURE - II

POSTWELD HEAT TREATMENT REQUIREMENTS FOR CARBON AND LOW ALLOY STEELS

Sl. P No.	BHEL Specification (Base Standard)	ASME Equivalent	Product: Nominal Form	Minimum Holding Time at Normal Temperature Temp °C For Thickness(mm) (See UW-40(f))	Remarks
				≤ 50 $> 50 \leq 125$ > 125	
1.	P1 AA 10108 (IS 2062, Gr. A)	--	Sheet	600	1hr/25mm + 2 hr + 15 minutes for each additional 25 mm over 150 mm; Refer Notes 1, 2, 3 of UCS-56 also
2.	equi- valent: AA 10112 (Low (IS 9550, Gr. 20) Carbon:	--	Bars section:	600	1hr/25mm + 2 hr + 15 minutes for each additional 25 mm over 150 mm; Refer Notes 1, 2, 3 of UCS-56 also
3.	Steels: AA 10119 (IS 2062, Gr. B)	--	Pl, Sh, section: bars	600	1hr/25mm + 2 hr + 15 minutes for each additional 25 mm over 150 mm; Refer Notes 1, 2, 3 of UCS-56 also
4.	- AA 10122 (IS 961 Gr. Fe 540 W.Hr)	--	Plates	600	1hr/25mm + 2 hr + 15 minutes for each additional 25 mm over 150 mm; Refer Notes 1, 2, 3 of UCS-56 also
5.	- AA 10152 (IS 1239 pt.1 ERW)	--	Tubes	600	1hr/25mm + 2 hr + 15 minutes for each additional 25 mm over 150 mm; Refer Notes 1, 2, 3 of UCS-56 also
6.	- AA 10156 (ASTM A 179)	SA 179	Tubes	600	1hr/25mm + 2 hr + 15 minutes for each additional 25 mm over 150 mm; Refer Notes 1, 2, 3 of UCS-56 also
7.	- AA 10157 (ASTM A 179)	SA 179	Tubes	600	1hr/25mm + 2 hr + 15 minutes for each additional 25 mm over 150 mm; Refer Notes 1, 2, 3 of UCS-56 also

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Sl. No.	P No.	BHEL Specification (Base Standard)	ASME Equivalent	Product Form	Nominal Holding Temperature Temp °C For Thickness(mm) (See UW-40(f)) Minimum	Minimum Holding Time at Normal	Remarks
8.	-	HY 10192 (DIN:2391) Gr.St35-NBK		Tubes	"	"	"
9.	-	HY 10193 (DIN:2391) St52-NBK		Tubes	"	"	"
10.	-	HY 10194 (IS 3601 CDS-430)		Tubes	"	"	"
11.	-	HY 10198 (ASTM A 36)	SA 36	Section	"	"	"
12.	-	HY 10199 (IS1570 pt.II Gr.15C8)		Bars	"	"	"
13.	-	HY 10408 (ASME SA 516 Gr.70)	ASME SA516 Gr.70	Plates	600	"	"
14.	-	AA 10455	SA106 Gr.B	Pipes	600	"	"
15.	-	HY 10470	SA516 Gr.70	Pipes	600	"	"



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Sl. No.	BHEL Specification (Base Standard)	ASME Equivalent	Product:Form	Nominal: Holding Temperature Temp °C:For Thickness(mm) Minimum	Minimum Holding Time at Normal	Remarks
16.	P1	AA 19931	-	-	-	-
	Gr.1	IS 2004 Cl.2	-	-	-	-
17.	-	AA 19341	SA105	Forging:600	-	-
		(IS4367 20C15)	-	-	-	-
18.	-	HY 19361	SA105	Forging:600	-	-
19.	-	HY 19364	SA350 LF2	Forging:600	-	-
20.	Gr.2	HY 19366	SA266 Cl.2	Forging:600	-	-
21.	-	AA 19511	SA216	Casting:600	-	-
		(ASTM A 216 WCC:Gr.WCC	-	-	-	-
22.	-	AA 19521	--	Casting:600	-	-
		(IS 2708 Gr.1)	-	-	-	-
23.	-	HY 19561	(SA352 LCB	Casting:600	-	-
		(ASTM A 352 LCB	-	-	-	-
24.	-	HY 19562	SA216	Casting:600	-	-
		(ASTM A 216 WCA:Gr.WCA	-	-	-	-
25.	-	HY 19569	SA216	Casting:580	-	-
		(DIN17245	Gr.WCA	-	-	-
		GS-C25)	-	-	-	-

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Sl. No.	P No.	BHEL Specification (Base Standard)	ASME Equivalent	Product: Form	Nominal Holding Time at Normal Temperature	Remarks
26.	-	HY 19570 (DIN 17245 GS-C25)	SA216 Gr. WCA	Casting	580	"
27.	P3 (C-Mn Steel)	HY 19571 (DIN 17245) GS-22Mo4		Casting	660	2h + 15 min. for each additional 25mm over 50mm
28.	P4 (1Cr 1/2Mo)	AA 10632	SA335 P11	Plates	600	1hr/25mm 15 min. minimum
29.	P4 (1Cr 1/2Mo)	HY 19387	SA182 F11	Forging	600	5hr + 15 min. for each additional 25mm over 125mm
30.	P5 (2 1/4Cr 1 Mo Gr. 1)	AA 10630	SA335 P22	Pipes	680	"
31.	-	ASME SA387 Gr. 5	SA 387 Gr. 5	Plates	680	Refer notes 1, 2, 3 of table UCS-56

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Sl. No.	BHEL Specification (Base Standard)	ASME Equivalent	Product: Nominal Form	Minimum Holding Time at Normal Holding Temperature	Remarks
32.	P6 (13%Cr Gr. 425 C11 Stain-less steel)	--	Casting: 540-560		
Note: Maximum holding temperature shall be 30°C below the actual tempering temperature of the parts/components.					

DATE OF LOADING;

DATE OF CHARGING;

DT. & SHIFT	OPERATION INCHARGE	ACTUAL TIME		REMARKS
		STARTING	COMPLETION	
				HEATING SOAKING COOLING

THERMOCOUPLE INDICATION:

SNO. CALIBRATION DUE DATE COLOUR SNO. CALIBRATION DUE DATE COLOUR

1. _____

4. _____

2. _____

5. _____

3. _____

6. _____

RECORDER NO. DUE DATE OF CALIBRATION.

(PRODUCTION INCHARGE)

H.T. CHART REF. NO.

REVIEWED AND ACCEPTED. RELEASED FOR FURTHER OPERATIONS.

(QUALITY CONTROL)



**BHEL HERP VARANASI
QUALITY PLAN**


QUALITY PLAN FOR

FABRICATED & MACHINED COMPONENT (MILD STEEL)

SL.NO.	COMPONENT	CHARACTERISTIC CHECKED	TYPE/METHOD OF CHECK	EXTENT OF CHECK	REFERENCE DOCUMENTS & ACCEPTANCE NORM	FORMAT OF RECORD	AGENCY			REMARKS
							P	W	V	
1.0	Raw Material									
	i. Plate material, Rounds, Pipes (Specns. as applicable)	Verification of supplier's certificates for chem. & mech. Properties	Certificate review	100%	IS2062 FOR MS PL. IS228 FOR MS ROD SA106 GR.B FOR seamless stl. PIPE, En8 /En19 FOR RODs	T.C.	3	-	2	Matl. TC can be waived off if the same is specified in Purchase Order
		Soundness of MS Plates > 40 mm thk.	UST	100%	ASTM A-435	T.C.	3	-	2	Plates < 40 mm shall be UST tested if specifically called in PO.
	ii. Standard Fasteners (Bolts, Nuts, screws)	Verification of make and class	review of sub supplier's documents	100%	Drawing / purchase order	Inspection Report	3	-	2	All Fasteners of class 8.8 and above should be of reputed make like TVS/LPS/DFL/Boltmaster/CAPARO/Sri Pavitra make
2.0	Fabrication	i. Visual inspection of welds	Visual	100%	Free from defects	Inspection Report	3/2	-	2	Welding shall be done as per WPS mentioned in the drawing. DP test o be witnessed by BHEL if asked in the PO
		ii. Soundness of welded joints	DP Test of welded joints (if required as given in the Drg./PO)	as mentioned in Drg. / Po	AA0850131 & AA0850129	Inspection Report	3	2	-	
		iii. Verification of Dimensions and visual inspection	visual & Measurement	100% by Vendor	Drawing.	Dimension Report	3	-	2	
		iv. Stress relieving after welding (when called in Drg. or PO)	Review of H.T. Chart	100%	HY0640763	H.T. Chart	3	-	2	
3.0	Final Inspection	i. Overall dimensions after final machining	Measurement	100% for machined dimensions and random 10% for other dimensions	Drawing.	Dimension Report	3/2	2	-	Tol. For untol. Dimensions will be governed by IS2102 med. Grade for machined dimensions and Course grade for Fabricated dimensions
		ii. surface finish	Visual	100%	Drawing	Inspection Report	3/2	2	-	
		iii. Painting/preservation	Visual, Paint shade and DFT	Random Sample basis	Drawing / PO		3/2	-	2	
		iv. Identification & Marking	Punching of P.O.No. & Inspector Seal	100% by BHEL		Inspection Report	3/2	2	-	
QP. NO.	RV/FAB & MCD/12 REV-03				MANAGER P&D					
DATE	26.08.2017				SIGNATURE & DATE					
PG. NO.	1 OF 1									

REV-03

Painting Witness changed to verification


विरेंद्र कुमार / Virendra Kumar
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 भारत हेवी इलेक्ट्रिकल्स लि.
 Varanasi

T.C. = TEST CERTIFICATE

P = PERFORM
 W = VERIFY
 V = VENDOR
 B = BHEL



BHARAT HEAVY ELECTRICALS LIMITED

RAMACHANDRAPURAM, HYDERABAD-500 032.

PD - 268

QW-482 WELDING PROCEDURE SPECIFICATION (WPS)

Welding Procedure Specification No. WE.Q01. Date 2.4.94. Supporting PQR No. 185 + 21

Revision No. 2. Date 15.09.1993.

Welding Process (as) SMAW Type (s) Manual

JOINTS (QW 402)

Details

Joint Design AS per manufacturer's Drawing

Backing (Yes) & back strip (No) For double sided joints For single side joints

Backing Material (Type) Weld metal for double side welding and Pt for backing strip joints.

Metal Yes Non fusing metal

BASE METALS (QW-403)

P. No. 1. Group No. 1 & 2 to P. No. 1. Group No. 1 & 2.

OR

Specification type and grade.

to Specification type and grade.

OR

Chem. Analysis and Mech. Prop.

to Chem. Analysis and Mech. Prop.

Thickness Range :

Base Metal : Groove 4.75 - 200mm Fillet All

Pipe Dia. Range : Groove All dia Fillet All

Other. Root spacing for backing strip joints : 8-10mm
For others : 2 + 1mm

FILLER METALS (QW-404)

Spec No. (SFA) 5.1

AWS No. (Class) E 7018

F. No. 4

A. No. 1

Size of Filler Metals ϕ 2.5 to 6.3mm

Deposited Weld Metal

Thickness Range : Groove 200mm Max

Fillet All

Electrode Flux (Class) Basic

Flux Trade Name NA

Consumable Insert No : Retainers : no

Bead thickness : 5mm Max.

POSITIONS (QW-405)

Position [s] Groove All

Welding Progression : Up For V Down

Position [s] Fillet AllPREHEAT [QW 406] Upto 30mm 10°CPreheat Temp Min From 31-100mm 100°C
Above 100mm 150°CInterpass Temp. Max 350°CPreheat Maintenance Nil

[POSTWELD HEAT TREATMENT QW-407]

Temperature Range 600°C - 650°CTime Range As per UCS - 56

GAS [QW-408]

Percent Composition NA

Gas [es] [Mixture] Flow Rate

Shielding --Trailing --Backing --

ELECTRICAL CHARACTERISTICS [QW-409]

Current AC or DC DC Polarity Reverse (+Ve)Amps [Range] 60-300 Volts Range 22-26Tungsten Electrode size and type NAMode of Metal Transfer for GMAW NAElectrode wire feed speed range NA

TECHNIQUE [QW-410]

String or Weave Bead String & Weave Orifice or Gas Cup Size NAInitial and Interpass Cleaning Chipping, Brushing, GrindingMethod of Back Gouging By Grinding Oscillation NAContact Tube to Work Distance NA Multiple or Single Pass MultiMultiple or single Electrodes Single Travel Speed [Range] NAPeening Not Allowed Electrode Spacing NAOther Clean 20mm width on either side of the weld area prior to weld to remove paint, Oil, Grease etc.

Weld Layer [s]	Process	Filler Metal		Current		Volt Range	Travel Speed Range mm/min	Other
		Class	Dia. mm	Type Polar	Amp. Range			
	SMAW	E7018	2.5	DC +	60-90	--	--	String & Weave Max - 3D
	SMAW	E7018	3.15	DC +	90-140	--	--	
	SMAW	E7018	4.0	DC +	140-180	--	--	
	SMAW	E7018	5.0	DC +	180-240	--	--	
	SMAW	E7018	6.3	DC +	240-300	--	--	

Krm.

PREPARED BY

SR. MANAGER
WELDING ENGG.