	BHARAT HEAVY ELECTRICALS LIMITED R.C.PURAM, HYDERABAD	STANDARD QUALITY PLAN FOR VENDOR ITEMS ITEM: H.P.HEATER TUBE SHEET FORGING BHEL SPEC: HE 51155, R10 BHEL DRG : AS PER P.O. PROJECT : WBPDCL	QP. NO: HY/ HE/ 001/ TUBE SHEET/WBPDCL REV. NO. : 00 DATE: 21.05.2022 PAGE 1 OF 2

SL	COMPONENT & OPERATIONS	CHARACTERISTICS	CLASS	TYPE OF CHECK	QUANTUM OF CHECK	REF DOCUMENT	ACCEPTANCE NORMS	FORMAT OF RECORD	* D	AGENCY P	AGENCY W	AGENCY V	REMARKS
1.0	**AT SUPPLIERSWORKS**												
1.1	TUBE SHEET FORGING	CHEM. COMPOSITION	MAJOR	CHEM.	AS PER SPN.	SA 350 LF2 CL1 & HE 51155		SUPPLIERS TC	✓	2		1, 3	NOTE 2
1.2		REVIEW OF HEAT TREATMENT CHART	MAJOR	REVIEW	100%	SA 350 LF2 CL1 & HE 51155		HT CHART	✓	2		1, 3	
1.3		MECH. PROPERTIES , HARDNESS IMAPCT TEST TEST COOUPON SELCTION SHALLBE DONE IN PRESENCE OF TPIA. TEST COUPON SHALL BE SELECTED AS PER DRAWING AND ASME SPECIFICATION REQUIREMENT	MAJOR	MECH.	ASPER SPN.	SA 350 LF2 CL1 & HE 51155		SUPPLIERS TC	✓	2	1, 3		NOTE 3
1.4		UT EXAM. OF FORGING AFTER ROUGH MACHINING	MAJOR	NDE	100%	SA 388	HE71044	SUPPLIERS TC	✓	2	1, 3		
1.5		MT OF THE SURFACE TO BE OVER LAYED	MAJOR	NDE	100%	ASME SEC.V ART.	ASME SEC.VI II DIV.I APPX.6	SUPPLIERS TC	✓	2	1, 3		
1.6		PT ON SURFACE TO BE OVERLAYED	MAJOR	NDE	100%	ASME SEC.V ART.6	ASME SEC.VI II DIV.I , APPX.8	SUPPLIERS TC	✓	2	1, 3		
1.7		DIM. CONFORMITY,VISUAL	MAJOR	MEASURT. VISUAL	100%	DRG.	DRG.	SUPPLIERS TC	✓	2	1, 3		NOTE-6
1.8		VERIFICATION OF TCS, IDENTIFICATION OF MATERIAL & TES COUPON FOR COMPLETION AS PER SPECN. & QP	MAJOR	VISUAL	100%	SA 350 LF2 CL1 & QP	SA 350 LF2 CL1 & QP	SUPPLIERS TC	✓	2		1, 3	NOTE-8
1.9		PRESERVATION, PACKING ,MARKING & IDENTIFICATION OF FORGING	MAJOR	VISUAL	100%	P.O., DRG. & SPN.	P.O., DRG. & SPN.	SUPPLIERS TC	✓	2		1, 3	NOTE 4
2.0	**AT BHEL**												

VENDOR TO SUBMIT DRAWING ANDTECH.DATASHEET FFOR BHEL APPROVAL.
LEGEND:
P: - PERFORM, W: - WITNESS , V: - VERFICATION,
INDICATING 1: - BHEL / BHEL NOMMNATED INSPECTION AGENCY, 2: - VENDOR / SUB VENDOR 3: WBPDCL TPIA AS APPROPRIATE AGAINST EACH COMPONENT / CHARACTERISTICS UNDER THE COLUMNS P, W & V.
* D: RECORDS IDENTIFIED WITH TICK (✓) SHALL BE ESSENTIALLY INCLUDED IN QA DOCUMENTATION.

PREPARED BY:	Reviewed by:	Approved by:
Alok Behera		
ALOK BEHERA **DY.MGR/ QA**	B. ASHOK KUMAR AGM/QA	B. ASHOK KUMAR AGM/QA

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2.1	VERIFICATION & CORRELATION OF MATERIAL & TEST COUPON		MAJOR	VISUAL	100%	PO, SPEC. & QP	PO, SPEC. & QP	INSP. RECORD	✓		1	3	

NOTES:

1) CORRELATION OF FINISHED PRODUCTS WITH RAW MATERIAL AND MANUFACTURER TCs IS TO BE ENSURED.
2) BOTH HEAT ANALYSIS AND PRODUCT ANALYSISI SHALL BE DONE AND SHALL BE REPORTED IN TC.
3) ORIENTATION OF THE TEST COUPON SHALL BE AS PER UW 13.3 (A) OF ASME SEC. VII I, DIV.1.
4) ALL MACHINED SURFACES TO BE PROTECTED BY APPLYING RUST PREVENTIVE COATING TO PROTECT FROM RUST FOR A MINIMUM PERIOD OF 6 MONTHS.
5) PROJECT SPECIFIC REQUIREMENTS, IF ANY AS PER P.O., SHALL ALSO BE COMPLIED WITH
6) FORGING SHALL BE FREE FROM CRACKS, FLAKES SEEMS, NON METALIC INCLUSIONS & OTHER VISUAL DEFECTS.
7) IN CASE OF ANY INCONSISTENCY BETWEEN THE REQUIREMENTS OF BHEL SPEC./PO & QAP, BHEL SPEC./PO SHALL PREVAIL.
8) APPLICABLE VALID IBR TC IN SPECIFIED FORMAT SHALL BE PROVIDED FOR BHEL TPIA REVIEW.

NOTES FOR INSPECTOR - TPIA

1. TPIA TO CHECK THE LATEST VERSION OF STANDARDS/DRAWINGS /TOLERANCES ETC TO BE MENTIONED IN QUALITY PLAN/DRAWING. THIS QP SHOULD BE READ ALONG WITH BHEL SPEC, BHEL DRAWINGS / APPROVED DRAWINGS, DATA SHEET, BOM AND PO
2. ONLY LEVEL II & ABOVE QUALIFIED PERSON IN RESPECTIVE NDE TO VERIFY OR WITNESS THE NDT TEST REPORT/RESULTS
3. INSPECTOR TO ENSURE THAT DOCUMENTS (QUALITY PLAN, DRAWINGS, DATA SHEET, PURCHASE SPECIFICATIONS, ETC) ARE AVAILABLE AS PER PURCHASE ORDER BEFORE STARTING THE INSPECTION.
4. TPIA TO REVIEW ONLY THE ORIGINAL TEST CERTIFICATES ISSUED BY THIRD PARTY LABORATORIES OR SUPPLIERS.
5. INSPECTION REPORTS SHALL BE SUBMITTED WITH A REMARK THAT ' COMPARED WITH ORIGINAL TEST CERTIFICATE. REVIEWED, VERIFIED AND FOUND IN ORDER '. TPIA TO ENSURE THE SAME.
6. INSPECTOR TO ENSURE USE OF VALID AND CALIBRATED MEASURING INSTRUMENTS AND EQUIPMENT.
7. TPIA SHALL ENSURE THAT MATERIAL TEST CERTIFICTAE & TRACEABILITY RECORDS ARE AVAILABLE FOR USE OF CORRECT MATERIAL
8. QUALIFICATION OF EQUIPMENT, PROCESS & PERSONNEL FOR SPECIAL PROCESSES LIKE WELDING, BRAZING, PAINTING & METAL COATING ETC.
9. TPIA TO ENDORSE ON ALL CERTIFICATES WITH COMMENTS (WITNESSED OR VERIFIED) AS PER QUALITY PLAN
10. TPIA SHALL ENSURE THAT LOG SHEETS CONTAIN ACTUAL MEASURED VALUES INSTEAD OF SAYING OK/NOT OK.

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11. COMPLETE INSPECTION AND TEST DOCUMENTATION WHICHEVER IS IDENTIFIED WITH (√) UNDER COLUMN D OF APPROVED QULAITY PLAN SHALL BE ENCLOSED WITH THE INSPECTION REPORT. ALL TEST CERTIFICATES/ REPORTS REVIEWED AND CERTIFIED BY BHEL/TPI SHALL BE SUBMITTED TO BHEL AS DOCUMENTATION PACKAGE
12. ORIGINAL COPIES OF ALL INSPECTION AND TEST DOCUMENTS AUTHENTICATED BY TPIA SHALL BE SUBMITTED.

GENERAL NOTES

- BHEL RESERVES THE RIGHT FOR CONDUCTING REPEAT TEST, IF REQUIRED.
- BHEL APPROVED INSPECTION ENGINEERS TO BE DEPLOYED FOR INSPECTION.

- DRAWING / DATA SHEET SHALL PREVAIL OVER QUALITY PLAN IN CASE OF ANY CONTRADICTION BETWEEN QUALITY PLAN AND DRAWING / DATA SHEET.
- ALL TEST REPORTS SHALL BE PROVIDED AS PER PRESCRIBED FORMATS IN BHEL SPEC.
- ANY OTHER TESTS/ CHECKS INDICATED IN SPECIFICATION, P.O., OR DRAWING & ANY ADDITIONAL CHECKS ENVISAGED BY BHEL/TPI TO ENSURE WORKMANSHIP, FINISH, AESTHETICS, ETC. SHALL ALSO BE CONDUCTED AND WITNESSED/VERIFIED BY BHEL /TPI / CUSTOMER AS REQUIRED

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