

BHARAT HEAVY ELECTRICALS LIMITED
VISAKHAPATNAM-530012 (INDIA)

STANDARD QUALITY PLAN FOR

SQP:H:PP: 28 / 00

TANKS & VESSELS

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Prepared by
Quality Assurance

V. Sunitha
13/8/18
V. Sunitha/Sr. Engineer

Reviewed by	Signature
Engineering (B. Satyeswara Rao)/ DGM	<i>[Signature]</i>
Manufacturing Shops (M.S.V.S.N. Murthy)/ DGM	<i>[Signature]</i> 13/08/18
Planning & Technology (A.Dhanasekar)/ Sr.Mgr	<i>[Signature]</i> 13/08/18
Quality (B. Roy)/ AGM	<i>[Signature]</i>
Quality Assurance (V. Sampath Kumar)/ Dy.Mgr	<i>V. Sampath Kumar</i> 13/08/18

Revision No.	Date	Approved by	Signature
00	13/08/2018	GM / Q	<i>[Signature]</i> 14/8/18

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RECORD OF REVISIONS

Rev. No.	Details of revision	Remarks
00	New Document	

SL. NO.	COMPONENT & OPERATIONS	CHARACTERISTICS	CLASS	TYPE OF CHECK	QUANTUM OF CHECK	REFERENC E DOCUMENT	ACCEPTANCE NORMS	FORMAT OF RECORD	AGENCY			REMARKS
									M	C	N	
1	2	3	4	5	6	7	8	9	D*	**	10	11

1.0 RAW MATERIAL												
1.1	Plates as per BHEL Drawing	Correctness of material specn.	B	Verificatio n of material specn.	100%	Material specification as per Column 2	**		QC			** For IBR materials, material correctness is ensured through mill test certificates. For Non IBR materials, material correctness is ensured through material spec hard stamping. * 100% RT on weld joints of dished ends, if applicable.
1.2	Dished Ends as per* BHEL Drawing.	Dimension	B	Measureme nt	100 %	Drawing	R		QC			
		NDE	B	LPI on Knuckle area	100%	ASME Sec.V/ASME Sec.VIII Div.1 Mandatory Appendix 8	R		ND			
1.3	Branch Connections Pipes & Rounds as per BHEL Drawing	Correctness of material specn.	B	Verificatio n of material specn.	100%	Material specification as per Column 2	**		QC			
2.0 IN PROCESS CONTROL												
2.1	Welding Procedure Qualification & Welders Performance Qualification	1.Procedure 2.Performance	B	Review of WPS, WPQ & PQR@	100%	ASME Sec. IX / IBR as applicable	Report		QC			@ Review of WPS/PQR/WPQ by BHEL

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2.2	Weld inspection	1.weld edge preparation and fit-up. 2.Profile 3.Surface 4. NDE a. Butt Welds b. Fillet Welds	B	Visual & Measurement RT on CS & LS joints LPI	100% \$\$, # 100 %	As per BHEL Drawing/ ASME sec. VIII Div. 1 UW 31-33 ASME Sec V/ ASME Sec VIII Div 1, UW-51 ASME Sec V & ASME Sec VIII Div 1 Mandatory Appendix 8	Record NDE Report NDE Report		QC			\$\$-Quantum of RT 1.For IBR vessels both CS&LS-100% 2.For Non-IBR vessels a) Longitudinal-100% b) Cir seam-10% at random including T joints. # where rejections are observed in 10% lot, another lot of 20% shall be taken, if there are rejection in 20% lot also, complete 100% lot shall be tested for respective NDE.
2.3	Heat treatment (Note-2)	Stress Relieving	B	Verification	HT Chart	ASME Sec VIII Div 1-UW40	HT Chart		QC			
3.0	FINAL INSPECTION											
3.1	Dimension	Overall dimensions, Length, OD, Position of stubs, Edge preparation, Ovality, Thickness	B	Measurements & Visual	100%	BHEL Drawing	Record		QC			
3.2	Pressure test	Strength	B	Hydraulic test	100%	BHEL Drawing & No Leakage, Seepage	Report		QC			
3.3	Painting	DFT and evenness	B	Measurements & Visual	100%	BHEL Drawing	Report		QC			

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3.4	Identification	Stenciling and Hard stamping	B	Visual	100%	As per BHEL standard	Report		QC			
3.5	Documentation Review	Verification of Reports	B	Visual	100%	*	COC/ FIR/ IBR forms as applicable		QC			* BHEL will submit certificate of Compliance (COC)/FIR for Non-IBR items and in case of IBR Items, applicable IBR Forms will be submitted.

Note: 1) In the case of Vessels coming under IBR scope, necessary IBR requirements shall be fulfilled and IBR documents to be submitted.
2) Vessels are to be stress relieved, if the wall thickness > 19mm or C > 0.25 and shall be done before SS cladding as applicable.

Legend:

UT: Ultrasonic Test MTC: Mill test Certificate LPI: Liquid Penetrant Inspection NDE: Non Destructive Examination QC-BHEL Quality Control ND: NDT Personnel IBR: Indian Boiler Regulation	WPS: Welding Procedure Specification PQR: Procedure Qualification Record WPQ: Welders performance Qualification RT: Radiographic Test PWHT: Post Weld Heat Treatment HT: Heat Treatment LS Welds: Longitudinal Seam welds	COC: Certificate of Compliance/Conformance FIR: Final Inspection Report DFT: Dry Film Thickness OD: Outside Diameter CS Welds: Circular Seam Welds ASME: American Society of Mechanical Engineers
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