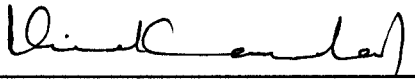


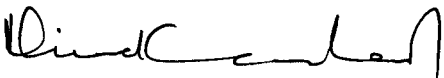

 BHARAT HEAVY ELECTRICALS LTD PIPING CENTRE, CHENNAI - 17 QUALITY ASSURANCE & CONTROL DEPT.			STANDARD QUALITY PLAN FOR LP PIPING FABRICATION WITH VENDOR MATERIAL PROJECT : Non- NTPC Projects						QP NO : QPG 34 REV.NO : 04 DATE : 13.10.2011		
S.No	COMPONENT & OPERATIONS	CHARACTERISTICS	CLASS	TYPE OF CHECK	QUANTUM OF CHECK	REFERENCE DOCUMENT	ACCEPTANCE NORMS	FORMAT OF RECORDS	AGENCY		REMARKS
									M	B	
1	2	3	4	5	6	7	8	9	D*	10	11
1.10	Material	All raw material and fittings shall be manufactured by the Vendors referred in the "RMVENDLISTPVM (Latest revision)"									
1.11	Pipes : IS 3589 / IS 1239 / as per drg.	a) Chemical, Mechanical & Hydro Test	Major	Review of TC	100%	Material Specification.	TC	√	P	V	TC - Test Certificate \$\$ - 100% for Pipe OD >= 1000mm , 10% for others
		b) NDT for 100mm each at both ends for IS 3589 Pipes	Major	RT	\$\$	ASME Sec V / ASME Sec VIII Div-I UW 51	Report	√	P	V	
1.20	Fittings : (SA 234 WPB)	Co-relation & verification of Mill TCs for	Major	Verify	100%	BHEL Drawing , Material Spec.	TC	√	P	V	Note 1
1.21		a) Chem. Composition		Chem. Analysis	1/Heat	BHEL Drawing , Material Spec.					
1.22		b) Mech. Test		Mech. Test	1/Heat	BHEL Drawing , Material Spec.					
1.23		c) Dimensions of fittings (OD & wall thickness, etc.,)		Measurement & Visual	100%	BHEL Drawing , Material Spec.					
1.24		d) Surface Defects		MPI	100%	ASTM E709					
1.25		e) Soundness (for thk > 6mm or dia > NB 200mm		UT	100%	SA 388 / ASME Sec VIII Div II cl 3.3.4					
1.26		f) Heat Treatment if applicable		Time/Temp.	100%	Material Specification.					
1.27		g) Hardness		Measurement	10%	Material Spec.					
1.28		h) Weld quality (in case of welded fitting, if any)		RT	100%	ASME Sec V / ASME Sec VIII Div-I UW 51					
1.30	Fittings : IS 1239	Chemical, Mechanical, NDT & Dimensions including Edge preparation.	Major	Review of TC	100%	As per BHEL TDC:12(Latest revision)	TC	√	P	V	
1.40	Plates : IS 2062 / as per drg.	Chemical & Mechanical	Major	Review of TC	100%	Material Specification.	TC	√	P	V	
 PREPARED BY VIVEKANANDA YELLU ENGR / QA			LEGEND: * RECORDS, IDENTIFIED WITH "TICK" () SHALL BE ESSENTIALLY INCLUDED BY SUPPLIER IN QA DOCUMENTATION. ** M: MANUFACTURER ; B: BHEL P: PERFORM W: WITNESS AND V: VERIFICATION				 APPROVED BY G.PANNEER SELVAM DGM / QA				
SIGNATURE			PAGE 01 OF 02								

 BHARAT HEAVY ELECTRICALS LTD PIPING CENTRE, CHENNAI - 17 QUALITY ASSURANCE & CONTROL DEPT.			STANDARD QUALITY PLAN FOR LP PIPING FABRICATION WITH VENDOR MATERIAL PROJECT : Non- NTPC Projects						QP NO : QPG 34 REV.NO : 04 DATE : 13.10.2011			
S.No	COMPONENT & OPERATIONS	CHARACTERISTICS	CLASS	TYPE OF CHECK	QUANTUM OF CHECK	REFERENCE DOCUMENT	ACCEPTANCE NORMS	FORMAT OF RECORDS	AGENCY			REMARKS
1	2	3	4	5	6	7	8	9	D*	M	B	11
2.0	Piping Fabrication	Piping fabrication, Testing and inspection shall be done as per relevant contract specific Quality Plan. Customer inspection, if any shall be taken care as per contract specific Quality Plan.										
4.0	Final Dimension	Dimensions	Major	Measurement	100%	BHEL Drawing	Report	√	P	W		
5.0	Painting	Painting shall be done as per relevant contract specific Painting scheme and inspection as per contract QP										
6.0	Identification	Marking	Major	Visual	100%	BHEL Drawing, PO	IR	√	P	V	Note 6	
7.0	End Protection	End Protection	Major	Visual	100%	BHEL Drawing, PO			P	V	Note 7	
8.0	Documentation	Verification of Records	Major	Visual	100%	As per QPG 34 and Contract Quality plan	IR, Reports & RM TC	√	P	V		
NOTES : 1) Fittings shall be procured only from BHEL approved Manufacturers . All the requirements covered in para 1.21 to 1.28 for SA234 WPB fittings and that indicated in para 1.30 for IS 1239 fittings shall be taken care by Sub-vendor while ordering fittings on the manufacturer. 2) The items shall be manufactured as per BHEL drawing . 3) Welding Electrodes and Paints used shall be of BHEL approved make 4) All items shall be inspected and cleared by BHEL / BHEL authorised inspection agency. 5) If Customer inspection is involved as per Contract QP, the Vendor shall get despatch clearance from the Customer before despatch of finished material 6) The finished components shall be punched with DU code (14 digit work order du details), material specification & Inspectors seal. In addition, the DU code and Material specification shall also be paint stencilled. 7) Machined / Screwed ends shall be well protected using end caps and fittings shall be suitably packed in box / crate to avoid transit & other damages.												
 PREPARED BY VIVEKANANDA YELLU ENGR / QA			LEGEND: * RECORDS, IDENTIFIED WITH "TICK" () SHALL BE ESSENTIALLY INCLUDED BY SUPPLIER IN QA DOCUMENTATION. ** M: MANUFACTURER ; B: BHEL P: PERFORM W: WITNESS AND V: VERIFICATION					 APPROVED BY G.PANNEER SELVAM DGM / QA				
SIGNATURE			PAGE 02 OF 02									