









Plant MRPL Mangalore		Client MRPL	Contract Code WSS for PFCC Flue Gas		Document ID 6723-JEX-G00-EC-0001-A213		Contract No. 66-6723			
<div></div>		Indicative Inspection and Test Plan(IITP) for Plug Valves Soft (Resilient Seated)						<div></div>		
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Sr. No.	Component / Operation	Stage Description	Characteristics	Reference Std.	Acceptance Std.	Format of Record	Inspection			
							Vendor	LSTK Contractor	TPIA	PMC / Owner
QAP Approval										
1	Raw material	Forging, Castings for Body, Plug & Cover	Visual	MSS-SP-55, ASME B16.34, Material Specification	MSS-SP-55, ASME B16.34, Material Specification	Inspection report	H	--	--	A
			Dimensions	Drawing	Drawing	Inspection report	H	--	--	--
			Steel making process, heat treatment, Chemical, mechanical properties, NDE (RT, DP, MT, bend test, Hardness as applicable etc. IGC – B (for casting) / E with micro test for SS material.	Order Specification, Relevant ASTM Std. & Approved drawing	Order Specification, Relevant ASTM Std. & Approved drawing	Foundry test certificate	R	R	R	--
		Fasteners	Heat treatment, Chemical, mechanical properties, etc.	Order Specification, Relevant ASTM Std.	Order Specification, Relevant ASTM Std.	Manufacturer's test certificate	R	R	R	--
2	In process	Stem & PTFE sleeve, body gasket	Chemical, mechanical properties, etc.	Order Specification, Relevant ASTM Std. & Approved drawing	Order Specification, Relevant ASTM Std. & Approved drawing	Manufacturer's test certificate	R	R	R	--
		Machined Components	Visual & dimensions	Drawing & MSS-SP-55	Drawing & MSS-SP-55	Inspection report	W	--	--	--

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							Vendor	LSTK Contractor	TPIA	PMC/ Owner	
3	Final inspection	Strip test (1% of offered qty.)	Visual	Drawing, order specification	Inspection report	Inspection report	H	H	H	--	
		Visual	Workmanship / Finish	MSS-SP-55, ASME B16.34, Material Specification	Inspection report	Inspection report	H	100% H	100% H	--	
		Dimensions	Measurement	Approved drwg. & MSS-SP-55	Inspection report	Inspection report	H	H*	H*	--	
		Pressure test (shell, high pressure closure & low pressure closure tests) & Functional Test	Leak tightness, Water Cl2 content <20 ppm for SS and Portable water for others	Applicable testing std./approved drwg.	Inspection report	Inspection report	H	H*	H*	--	
		D.P. test on butt weld & socket weld ends/ Ends	Visual	ASTM E 165	Inspection report	Inspection report	H	H*	H*	--	
		Radiography test (if applicable)	Defects	ASME B 16.34, ASTM E 446	Radiography report	Radiography report	R	R (Review of RT films)	R (Review of RT films)	--	
		Radiography of Butt weld for end connections ( if applicable)	weld Defects	ASME Sec V, ASME VIII Div1	Radiography report	Radiography report	R	R (Review of films)	R (Review of films)	--	
		PMI test, as applicable	Conformance to requirements for materials and welds	Drawing, order specification	Test report	Test report	H	H- 10%( per tag , per size, per visit)	H- 10%( per tag , per size, per visit)	--	
		Marking details	Visual	Approved drwg.	Inspection report	Inspection report	H	100% H	100% H	--	
		Helium and cryogenic test as applicable	Conformance to requirements	Drawing, order specification	Test report	Test report	H	H - 100%	H - 100%	--	

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4	Inspection before despatch	Surface preparation & painting	Paint DFT, shade, etc.	Applicable std., Order specification	Applicable std., Order specification	Inspection report	H	H	H	--
		Pickling passivation for SS valves.	Visual	Applicable std., Order specification	Applicable std., Order specification	Inspection report	H	H	H	--
		100% Stamping by LSTK Contractor & TPIA and Issue of Inspection Release Note	Review of Documents including Fire Safe Design, if applicable.	Drawings, order specification, API 607/API6FA std.	Drawings, order specification, API 607/API6FA std.	Inspection report & test certificates	H	H	H	-
		Packing	Visual	Order specification, manufacturer's std.	Order specification, manufacturer's std.	Internal records, packing slip	H	W	R	--
5	Inspection documentation & Issue of IRN	Valve Test reports, Material Test Certificate	Review of Documents	100%	As per Applicable Material & Order Specifications, drawings	Conformance to Codes & Order Specification, drawings	H	H	H	R
5	Final documentation & Despatch Clearance	Compilation of final documents	Verification for completeness	Purchase Order, specification	Purchase Order, specification	Dossier	R	H	--	H

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<b>Notes</b> 1. LSTK contractor to prepare final QAP based on this IITP, Applicable specifications, standards and codes and submit to PMC for final approval 2. Testing/acceptance standard shall be as per Order Specification, approved drawing, testing standards, viz. EN 12266 part 1 or 2, API 598, etc. 3. For C.S. valves with butt weld or socket weld ends, C.E. shall not be greater than that specified in Order specification. 4. Vendor shall weld end nipples at both the ends before assembly. WPS/PQR shall be submitted for LSTK Contractor, TPIA review for all welds including Bypass welds. Bypass valve shall be tested as per the requirements of main valve. 5. *Quantity of check shall be 100% by Vendor & 10%(per Tag, per size, per visit) by LSTK Contractor & TPIA 6. Helium test for valves shall be in line with EDB-0006. 7. Seat tests are to be carried out from both directions (Exception-unidirectional valves). 8. Fire safe valves shall be as per Process requirement. 9. Statutory requirement and inspection by Statutory Authority, if applicable, the same shall be met. 10. LSTK Contractor may increase percentage of inspection upto 100% if any rejection or non-conformity is observed during sampling inspection or based on past experience with the vendor. 10. In addition to the requirements of IITP, all requirements of Purchase order, material specification, Order specification and Order Technical requirements (Document ID: EDB-0006) for raw material and final product shall be fulfilled. In addition, Material in Hydrogen Service shall comply with the requirements of Annexure F of document EDB-0006. Material in Sour service shall comply with the requirements of NACE MR0103 & MR0175 & EDB-0006. 11. Statutory requirement and inspection by Statutory Authority, if applicable, the same shall be met. IBR requirements for EDB-0006 shall be met. Original IBR Forms shall be submitted 12. Hydro test Water quality shall be as potable for CS and LAS. For SS material Chloride shall be 20 ppm max										
Legends: W - Witness, R - Review, H – Hold A – Approval										
Devesh Sharma	Thomas Abhi / Sundar T. V.			Syam N.S.	Syam S.	Syam S. Neliparambil				
Prepared by: LE	Checked by: SSP / DQAR			HDP						