

FRAMEWORK AGREEMENT

TECHNICAL SPECIFICATION FOR STEAM TRAPS

SPECIFICATION NO. PE-TS-020-100-M010



**BHARAT HEAVY ELECTRICALS LIMITED, POWER SECTOR
PROJECT ENGINEERING MANAGEMENT
NOIDA, INDIA**

	TECHNICAL SPECIFICATION STEAM TRAPS	SPECIFICATION NO. PE-TS-020-100-M010	
		SECTION: -	
		REV. NO.: 00	DATE: 07.09.17
		SHEET 1 OF 1	

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			SECTION: -I
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SECTION-I

SPECIFIC TECHNICAL REQUIREMENTS

	SPECIFIC TECHNICAL REQUIREMENTS STEAM TRAPS	SPECIFICATION NO. PE-TS-020-100-M010	
		SECTION: I	
		REV. NO.: 00	DATE: 07/09//2017
		Sheet 1 of 3	

1. GENERAL

- 1.1 The steam traps shall meet the technical requirements and conform to the requirements of this Section-A and Data sheet A of Section B. However, in the event of contradictions between Section –A & Section –B/ Data sheet A, Section –A will prevail.
- 1.2 The technical requirements for steam traps shall, in general, be as per the attached Data sheets A of Section B.

2. SCOPE OF SUPPLY

- 2.1 The steam traps (Thermodynamic, Thermostatic, Inverted Bucket and Ball float type along with strainer) shall be supplied as per Data sheets A of Section B. For detail refer the same.
- 2.2 Commissioning spares, if any.
- 2.3 Mandatory spares as applicable depending upon the project requirement.

3. DESIGN REQUIREMENTS AND CONSTRUCTION FEATURES

- 3.1 The traps covered in the specification shall be of Thermodynamic, Thermostatic, Inverted Bucket and Ball float type with auto-drain arrangement conforming to supplier's own proven design.
- 3.2 All traps shall be with integral/external strainer designed suitably to prevent the internals of the trap from damage due to dirt etc.
- 3.3 Straining area of strainer shall be kept as minimum four times of the pipe cross-sectional area.
- 3.4 The traps should be suitable for horizontal/vertical mounting with internals easily accessible and replaceable.
- 3.5 Arrow showing inlet should be cast on the body of traps and strainers.
- 3.6 Wherever steam traps are coming under purview of IBR, the relevant stipulations of IBR shall be applicable for compliance.
- 3.7 The trap cover shall be such that it can be removed without breaking the inlet or discharge pipe.
- 3.8 On line cleaning of the strainer element shall also be possible.
- 3.9 All steam traps and strainers shall be with socket welded ends as per ANSI B16.11.
- 3.10 Ball Float type Steam Traps shall be provided with thermostatic air vent (pressure balance type).
- 3.11 Sizes of steam traps and strainers covered herein are from 15 mm Nb to 25mm NB with socket welded (SW) end connection. Seat diameter for Inverted Bucket & Ball Float trap shall be selected based on the required maximum condensate flow rate & working pressure which will be indicated at ordering stage.
- 3.12 A metallic (stainless steel plate 2mm thick) nameplate shall be fitted on each valve. Nameplate inscription required for each valve shall be indicated at the contract stage. Inscriptions shall be engraved 1 mm deep filled with enamel paint.

4. MATERIALS

- 4.1 The materials of construction of main parts of traps shall be specified in Data sheet-A.
- 4.2 The materials of construction of the remaining parts shall be suitable for the service conditions shall be subject to approval of the purchaser.
- 4.3 Materials used in manufacture of traps shall be of tested quality.

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5. TESTING AND INSPECTION

- 5.1 The items covered under this contract shall be subjected to inspection, testing and quality surveillance as per the quality plans attached with this specification. The Inspection Agency shall, at all reasonable times have access to Vendor's works, Quality Control records and all facilities as reasonably required for carrying out the inspection and testing efficiently, and these shall be provided by the vendor free of cost.
- 5.2 The minimum NDT/testing and inspection requirements for traps shall be as per the attached Quality Plan. However, in case of order, final inspection and testing shall be carried out as per the final approved (By BHEL/Customer) quality plan without any price implications.
- 5.3 All inspection and testing shall be carried out by BHEL and CUSTOMER (if necessary). In case inspection is by both BHEL and CUSTOMER, then the inspection can be carried out jointly or separately, which will be informed later.

6. EXCLUSIONS

Erection & Commissioning of equipment at site

7. SURFACE PREPARATION & PAINTING

- 7.1 The surface preparation of all exterior and interior surfaces of valves shall include the following:
 - a) Removal of oil, grease and dirt.
 - b) Removal of rust and scale etc.
 - c) Sand blasting/ shot blasting.
- 7.2 Surface preparation shall be as per SSPC-SP-3/ Power Tool Cleaning followed by 2 coat of Heat Resistance Aluminium paint conforming to IS 13183 Gr. I or equivalent, paint shade Aluminium and total DFT of paint will be equal to 80 microns minimum.

8. PACKING INSTRUCTIONS:

- a) Each trap shall be drained, cleaned, prepared and suitably protected in such a way so as to minimize the possibility of damage and deterioration during transit and storage.
- b) The trap shall be dispatched in total assembled form.
- c) Body ends shall be suitably sealed to protect them against damage during transit and storage.
- d) Trap Tag Nos. shall be incorporated in all the dispatch documents.
- e) Proper care shall be taken to avoid damage to the finished surface during transit.
- f) All the traps shall be packed suitably in wooden cases in order to avoid damage during transit and also during storage at site in tropical climate conditions for a period of 15-18 months.

9. SPARES

- a) **Mandatory Spares:** These shall be as per Data Sheet-A.
- c) Order for the spares may be placed simultaneously or otherwise at the option of purchaser.

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10. DOCUMENTS TO BE SUBMITTED ALONG WITH OFFER

Bidder shall submit the following documents duly filled, signed and stamped along with the bid:

- a) Compliance sheet
- b) Documents as per the list indicated in the NIT.

The above are the only documents which will be used for technical evaluation unless other documents are asked for during technical clarifications. Any other technical document enclosed with the bid shall be ignored for the purpose of technical evaluation. All other documents attached with the specification are for information of the vendor and no comments shall be marked on these.

11. DOCUMENTS TO BE SUBMITTED AFTER AWARD OF FRAMEWORK AGREEMENT:

- 11.1 Complete cross sectional arrangement of the valve.
- 11.2 Binding dimensions, dismantling clearances & weights.
- 11.3 Bill of material incorporating all the materials of construction of various parts and also specifying the IS/BS/ASTM standards to which the materials conform to.
- 11.4 Standard Quality Plan duly signed with bidder's company seal as a token of acceptance by the bidder.

The above drawings/ documents will be considered as reference documents for different projects PO which will be placed later.

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			SECTION: -II
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SECTION-II

- DATA SHEET – A
- QUALITY PLAN
- COMPLIANCE SHEET

 DATASHEET - A REQUIREMENT OF STEAM TRAPS FOR FRAMEWORK AGREEMENT												SPECIFICATION NO.: PE-TS-020-100-M010					
												VOL: IIB					
												SECTION: II					
												REV:00 DATE: 16-09-17					
SHEET 1 OF 4																	
SL. NO.	TYPE	CONNECTING PIPE SIZE SIZE (NB)	PIPE THICKNESS (MM)	SERVICE DESCRIPTION	SERVICE	DESIGN PRESURE (KG/CM2(g)	DESIGN TEMP(deg C)	OPERATING PRESSURE AT INLET OF TRAP (Kg/cm2)	OPERATING PRESSURE AT D/S OF TRAP (Kg/cm2)	MAX. CONDESATE RATE (KG/HR)	FACTOR OF SAFETY	BODY	MATERIAL BODY INTERNALS	END CONN	BLOW OFF CONNECTION	IBR REQUIRED	TOTAL QUANTITY (MAIN)
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
BOQ FOR CAT-I																	
1	THERMODYNAMIC STEAM TRAP-LP	33.4	4.55	POWER CYCLE	INTERMITTENT	20	395	16	0.1 (VAC)	10	NOT LESS THAN 2	CS/SS	SS	SW	YES-PLUGGED	YES	388
2	THERMODYNAMIC STEAM TRAP-HP	33.4	4.55	POWER CYCLE	INTERMITTENT	73.5	380	66	0.1 (VAC)	10		CS/SS/ EQUIVALENT OR HIGHER	SS	SW	YES-PLUGGED	YES	36
3	INVERTED BUCKET TRAP	88.9(*)	5.49	DRAIN LINE	CONTINUOUS	7/ VAC	110	0.95 (VAC)	0.1 (VAC)	700		CS	SS	SW	YES-PLUGGED	NO	15
4	BALL FLOAT STEAM TRAP	88.9(*)	5.49	DRAIN LINE	CONTINUOUS	7/ VAC	110	0.95 (VAC)	0.1 (VAC)	700		CS	SS	SW	YES-PLUGGED	NO	7
5	EXTERNAL Y-TYPE STRAINER	88.9(*)	5.49	DRAIN LINE	CONTINUOUS	7/ VAC	110	0.95 (VAC)	0.1 (VAC)	700		CS	CS	SW	YES-PLUGGED	NO	22
NOTES:															TOTAL		468

- For detailed material of construction refer pages 3 and 4 of this DataSheet-A.
For items s.no. 2 , Equivalent/higher material is acceptable . Bidder to furnish MOC of the traps at s.no. 1 &2 offered along with the offer in the compliance sheet and the same shall be binding.
- Bidder to offer steam trap meeting the parameters mentioned in the above Datasheet-A.
- For item no. 1 and 2, Bidder to offer Suitable matching pieces to match with connecting pipe size.
(*) For item no. 3 , 4 and 5, strainer inlet & trap outlet shall be matched with connecting pipe size by bidder. Strainer outlet and trap inlet shall be matched through expander/reducer.
Bidder to consider all reducer/expander as required in the strainer in their scope
- Bidder to mention NB & MOC of trap & strainer in the offer in compliance sheet and same shall be binding.
- Painting: Heat resistant aluminium paint to IS-13183 Gr.I. TOTAL DFT-80 MICRONS.
- Socket Welding (SW) will be as per ASME-B16.11.
- CS:Carbon Steel, SS-STAINLESS STEEL, VAC: Vacuum, ATM: Atmospheric

PREPARED BY

SR. ENGR. MPL

CHECKED BY

DY MGR (MPL)

APPROVED BY

MGR(MPL)

 DATASHEET - A REQUIREMENT OF STEAM TRAPS FOR FRAMEWORK AGREEMENT												SPECIFICATION NO.: PE-TS-020-100-M010					
												VOL: IIB					
												SECTION: II					
												REV:00 DATE: 16-09-17					
												SHEET 2 OF 4					
SL. NO.	TYPE	CONNECTING PIPE SIZE SIZE (NB)	PIPE THICKNESS (MM)	SERVICE DESCRIPTION	SERVICE	DESIGN PRESURE (KG/CM2(G))	DESIGN TEMP(deg C)	OPERATING PRESSURE AT INLET OF TRAP (Kg/cm2)	OPERATING PRESSURE AT D/S OF TRAP (Kg/cm2)	MAX. CONDESATE RATE (KG/HR)	FACTOR OF SAFETY	BODY	MATERIAL BODY INTERNALS	END CONN	BLOW OFF CONNECTION	IBR REQUIRED	TOTAL QUANTITY (MAIN)
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
BOQ FOR CAT-II																	
1	THERMOSTATIC STEAM TRAP-LP	33.4	4.55	POWER CYCLE	INTERMITTENT	20	350	16	0.1 (VAC)	10	NOT LESS THAN 2	CS/SS	SS	SW	YES-PLUGGED	YES	111
2	THERMOSTATIC STEAM TRAP-HP	33.4	4.55	POWER CYCLE	INTERMITTENT	73.1	415	66	0.1 (VAC)	10		CS/SS/ EQUIVALENT OR HIGHER	SS	SW	YES-PLUGGED	YES	17
3	INVERTED BUCKET TRAP	88.9(*)	5.49	DRAIN LINE	CONTINUOUS	7/ VAC	110	0.95 (VAC)	0.1 (VAC)	700		CS	SS	SW	YES-PLUGGED	NO	5
4	BALL FLOAT STEAM TRAP	88.9(*)	5.49	DRAIN LINE	CONTINUOUS	7/ VAC	110	0.95 (VAC)	0.1 (VAC)	700		CS	SS	SW	YES-PLUGGED	NO	2
5	EXTERNAL Y-TYPE STRAINER	88.9(*)	5.49	DRAIN LINE	CONTINUOUS	7/ VAC	110	0.95 (VAC)	0.1 (VAC)	700		CS	CS	SW	YES-PLUGGED	NO	7
NOTES:															TOTAL		142

NOTES:

- For detailed material of construction refer pages 3 and 4 of this DataSheet-A.
For items s.no. 2 , Equivalent/higher material is acceptable . Bidder to furnish MOC of the traps at s.no. 1 &2 offered along with the offer in the compliance sheet and the same shall be binding.
- Bidder to offer steam trap meeting the parameters mentioned in the above Datasheet-A.
- For item no. 1 and 2, Bidder to offer Suitable matching pieces to match with connecting pipe size.
- (*) For item no. 3 , 4 and 5, strainer inlet & trap outlet shall be matched with connecting pipe size by bidder. Strainer outlet and trap inlet shall be matched through expander/reducer.
Bidder to consider all reducer/expander as required in the strainer in their scope
- Bidder to mention NB & MOC of trap & strainer in the offer in compliance sheet and same shall be binding.
- Painting: Heat resistant aluminium paint to IS-13183 Gr.I. TOTAL DFT-80 MICRONS.
- Socket Welding (SW) will be as per ASME-B16.11.
- CS:Carbon Steel, SS-STAINLESS STEEL, VAC: Vacuum, ATM: Atmospheric

PREPARED BY

CHECKED BY

APPROVED BY

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DY MGR (MPL)

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	DATA SHEET-A STEAM TRAPS		SPECIFICATION NO. PE-TS-020-100-M010
			SECTION : II
			REV. NO.: 00
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1. Thermodynamic type steam trap with integral strainer

MATERIAL OF CONSTRUCTION (SS/CS THERMODYNAMIC STEAM TRAP)

S.NO.	PART NAME	MATERIAL REQUIRED
1	Body (Seat hardened)	Stainless Steel (ASTM A 743 Gr CA 40) / Carbon Steel (ASTM A 105)
2	Cap and Plug	ASTM A 743 Gr CA 40
3	Trap Disc	AISI420 (Equi. CA 40) (Hardened to minimum 40 RC differential hardness shall be maintained for disc and body seats).
4	Gasket	Non asbestos type
5	Strainer Screen	AISI 304 (20 mesh screen)
6	Name plate	SS 316 (2 mm thick)

NOTE: Equivalent/higher material is acceptable for item no. 2 of sheet 1 of 4 and will be binding to bidders. Bidder to furnish detail MOC of the traps offered along with the offer

2. Inverted bucket steam trap with external Y-type strainer

MATERIAL OF CONSTRUCTION (INVERTED BUCKET STEAM TRAP)

S.NO.	PART NAME	MATERIAL REQUIRED
1	Body and cover	Cast Carbon Steel as per ASTM A216 Gr.WCB
2	Valve, Valve seat	AISI 420(furnace hardened to minimum 40 RC). Differential hardness Shall be maintained between seats
3	Valve lever, Bucket, Bucket clip	AISI 304
4	Bolts/Nuts	ASTM A193 Gr.B7/ASTM A194 Gr.2H
5	Gasket	Non asbestos type
6	Name plate	SS 316 (2 mm thick)

3. Ball float steam trap with external Y-type strainer

MATERIAL OF CONSTRUCTION (BALL FLOAT STEAM TRAP)

S.NO.	PART NAME	MATERIAL REQUIRED
1	Body and cover	Cast Carbon Steel as per ASTM A216 Gr.WCB
2	Valve, Valve seat	AISI 420(furnace hardened to minimum 40 RC). Differential hardness Shall be maintained between seats
3	Float	AISI 304
4	Other Internals	AISI 304
5	Bolts/Nuts	ASTM A193 Gr.B7/ASTM A194 Gr.2H
6	Gasket	Non asbestos type
7	Name plate	SS 316 (2 mm thick)

	DATA SHEET-A STEAM TRAPS	SPECIFICATION NO. PE-TS-020-100-M010	
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MATERIAL OF CONSTRUCTION (EXTERNAL Y-TYPE STRAINER)

S.NO.	PART NAME	MATERIAL REQUIRED
1	Body and Strainer cap	ASTM A216 Gr.WCB
2	Strainer	SS 304 (0.8 mm perforated with 20 mesh screen)
3	Gasket	Non asbestos type
4	Name plate	SS 316 (2 mm thick)

4. Thermostatic type steam trap with integral strainer

MATERIAL OF CONSTRUCTION (CS/SS THERMOSTATIC STEAM TRAP)

S.NO.	PART NAME	MATERIAL REQUIRED
1	Body and Cover	Carbon Steel (ASTM A 105) / Stainless Steel (ASTM A 351 Gr. CF8)
2	Thermostatic Element	Stainless Steel (AISI 304)- Bimetallic
3	Valve seat	Stainless Steel (hardness min. 250BHN)
4	Gasket	Spiral wound SS and Graphite (Asbestos Free)
5	Strainer	Stainless Steel (Perforated)
6	Bolts/Nuts	ASTM A193 Gr.B7/ASTM A194 Gr.2H
7	Internals	Stainless Steel
8	Name plate	SS 316 (2 mm thick)

NOTE: Equivalent/higher material is acceptable for item no. 2 of sheet 2 of 4 and will be binding to bidders. Bidder to furnish detail MOC of the traps offered along with the offer

		QUALITY PLAN		CUSTOMER:		PROJECT: FRAMEWORK AGREEMENT		SPEC. NO :PE-SS-999-142-M010		
				BIDDER/VENDOR		QP NO. PE-QP-999-142-M002 REV:01 DT25-01-2008		SPEC. TITLE :STEAM TRAPS		
SHEET 1 OF 2		SYSTEM		POWER CYCLE		ITEM : THERMODYNAMIC STEAM TRAPS		SECTION VOLUME		
S.NO.	COMPONENT/ OPERATION	CHARACTERISTICS CHECKED	CATE- GORY	TYPE/METHOD OF CHECK	EXTENT OF CHECK	REFERENCE DOCUMENT	ACCEPTANCE NORMS	FORMAT OF RECORD	AGENCY P W * V	REMARKS

1.0	RAW- MATERIAL											
1.1	BODY,CAP,DISC AND PLUG	1. PHYSICAL, CHEMICAL PROPERTIES	MA	PHYS. CHEM. ANALYSIS	ONE/HEAT /BATCH	APPD. DRG./ TECH. SPEC.	APPD. DRG./ TECH. SPEC.	TEST CERT.	3/2	2	1	CORRELATION REQD (except disc & plug)
		2. SURFACE DEFECTS	MA	VISUAL	100%	MSS-SP-55	MSS-SP-55	INSPN. REPORT	3/2	-	2,1	
		3. DIMENSIONS	MA	MEASUREMENT	100%	APPD. DRG./ TECH. SPEC.	APPD. DRG./ TECH. SPEC.	-DO-	3/2	-	-	
1.2	SCREEN	1.CHEMICAL PROPERTIES AND MESH SIZE	MA	CHEMICAL TEST & MEASUREMENT	ONE PER LOT	APPD. DRGS./ DATA SHEET	APPD. DRGS./ DATA SHEET	LAB REPORT/ INSP. REPORT	3/2	2	2,1	MESH SIZE AND MESH PERFORATION DIA. SHALL ALSO BE CHECKED.
2.0	MACHINING											
2.1	ALL COMPONENTS	1. DIMENSIONS	MA	MEASUREMENT	100%	-DO-	-DO-	INSP. REPORT	3/2	-	-	
		2. SURFACE DEFECTS	MA	VISUAL EXAM.	100%	MSS-SP-55	MSS-SP-55	-DO-	3/2	-	-	BATCH WISE
		3. HARDNESS OF DISC	CR	HARDNESS TEST	100%	APPD. DRGS./ DATA SHEET ASTM E165	APPD. DRGS./ DATA SHEET NO DECECTS	-DO-	3/2	2	2,1	
		4. DISC SEAT & BODY SEAT	CR	SURFACE DEFECT	100%			-DO-	3/2	2	2,1	
		5. CONTACT SURFACE BETWEEN BODY SEAT AND DISC	CR	BLUE MATCHING	100%	-DO-	UNIFORM METAL TO METAL CONTACT	INSP REPORT	3/2	2	1	
3.0	ASSEMBLY INSPECTION	1. CLEANING & DEBURING	MA	VISUAL	100%	TECH SPEC.	TECH SPEC	LOG BOOK	3/2	-	-	
		2. DIMENSIONS	CR	MEASUREMENT	100%	-DO-	APPD. DRGS./ DATA SHEET	INSP. REPORT	3/2	2,1	1	
		3. LEAK TIGHTNESS OF BODY	CR	HYDRAULIC TEST	100%	APPD. DRG./ TECH. SPEC./ DATA SHEET	NO LEAKAGE	TC/IBR FORMAT	3/2	2,1	1	

BHEL		PARTICULARS	BIDDER/VENDOR	
GAURAV DIXIT 		NAME		
		SIGNATURE		
		DATE		
		BIDDER'S/ VENDOR'S COMPANY SEAL		

		QUALITY PLAN		CUSTOMER:			PROJECT: FRAMEWORK AGREEMENT			SPEC. NO : PE-TS-020-100-M010		
				BIDDER/VENDOR			QP NO. PE-QP-999-142-M002 REV :01 DT25-01-2008			SPEC. TITLE :STEAM TRAPS		
SHEET 2 OF 2		SYSTEM			POWER CYCLE			ITEM: THERMODYNAMIC STEAM TRAPS			SECTION VOLUME	
S.NO.	COMPONENT/ OPERATION	CHARACTERISTICS CHECKED	CATE- GORY	TYPE/METHOD OF CHECK	EXTENT OF CHECK	REFERENCE DOCUMENT	ACCEPTANCE NORMS	FORMAT OF RECORD	AGENCY P W * V			REMARKS

3.0	ASSEMBLY INSPECTION CONTD.(—)	4. FUNCTION OF TRAP	CR	PERFORMANCE TESTING IN SIMULATED CONDITIONS AS PER TEST PROCEDURE	10% (RANDOM) MIN.2 NO.	APPD. DRG./ TECH. SPEC./ DATA SHEET	TECH. SPEC./ DATA SHEET/APPD. DRG	TC/IBR FORMAT	2	1	1	TEST PROCEDURE TO BE SUBMITTED FOR REVIEW
4.0	SOCKET WELD ENDS	1.DIMENSIONS	CR	TEMPLATE	100%	APPD. DRG./ TECH. SPEC.	APPD. DRG./TECH. SPEC.	INSP. REPORT	2	1	1	
		2. SURFACE DEFECTS	CR	PT	100%	ASTME 165	NO SURFACE DEFECTS	-DO-	2	1	1	
5.0	PAINTING	SURFACE PREPARATION AND PAINTING	MA	VISUAL	100%	APPD DRG	APPROD DRG	-DO-	2	2	1	
6.0	PROVISION OF NAME PLATE & PACKING IN WOODEN CASE	AS PER TECH. SPEC.	MA	VISUAL	100%	APPD DRG./ TECH. SPEC.	APPD DRG./ TECH. SPEC.	(Soft copy of photographs)	3/2	-	1	

ABBREVIATIONS

CR= CRITICAL CHARACTERISTIC P= PERFORMED BY, W = WITNESSED BY V = VERIFIED BY

MA=MAJOR CHARACTERISTIC, 1= PURCHASER (BHEL) 2 = VENDOR, 3 = SUB VENDOR OF THE VENDOR

NOTE: SUCCESSFUL VENDOR SHALL SUBMIT FUNCTIONAL TEST PROCEDURE OF TRAP ALONG WITH QP IMMEDIATELY AFTER ORDER IS PLACED FOR APPROVAL.

*The Quantum of check to be witnessed is 10% or Min. 2 Nos. at random by BHEL/Customer & 100 % by Vendor for each type, Size & Rating.

BHEL		PARTICULARS	BIDDER/VENDOR	
GAURAV DIXIT GAURAV DIXIT		NAME		
		SIGNATURE		
		DATE		
				BIDDER'S/ VENDOR'S COMPANY SEAL

	QUALITY PLAN			CUSTOMER:			PROJECT: FRAMEWORK AGREEMENT			SPEC. NO : PE-TS-020-100-M010		
				BIDDER/VENDOR			QP NO. PE-QP-999-142-M003			REV.01 DTD. 25-01-2008		
	SHEET 1 OF 2			SYSTEM STEAM DRAINS			ITEM Y-TYPE STEAM STRAINERS			SECTION VOLUME		
S.NO.	COMPONENT/ OPERATION	CHARACTERISTICS CHECKED	CATE- GORY	TYPE/METHOD OF CHECK	EXTENT OF CHECK	REFERENCE DOCUMENT	ACCEPTANCE NORMS	FORMAT OF RECORD	AGENCY			REMARKS
									P	W * V		

1.0	MATERIAL CONTROL											
1.1	BODY, CAP & LOCK RING	1. PHYS & CHEM PROPERTIES	MA	PHYS TESTS CHEM TESTS	ONE/HEAT/ BATCH	APPD. DATA SHEET/ TECH.SPEC.	APPD. DATA SHEET/ TECH.SPEC	TEST CERT.	3/2	2	1	CORRELATION REQD FOR BODY CAP ONLY
		2. SURFACE DEFECTS	MA	VISUAL	100%	MSS-SP-55	MSS-SP-55	INSPN. REPORT	3/2	2	1	
1.2	MESH	1. CHEM PROPERTIES	MA	CHEM. TESTS	1/SHEET	APPD. DATA SHEET/ TECH.SPEC.	APPD. DATA SHEET/ TECH. SPEC	TEST CERT	3/2	2	1	
		2. MESH SIZE/ PERFORATION DIA.	MA	MEASUREMENT	SAMPLE PIECE	—DO—	—DO—	INSPN REPORT	3/2	2	1	
2.0	IN PROCESS CONTROL											
2.1	ALL COMPONENTS	1.WORKMANSHIP & FINISH	MA	VISUAL	100%	MFG DRG	MFG DRG	INSP REPORT	3/2	-	-	
		2.DIMENSIONS	MA	MEASUREMENT	100%	MFG DRG	MFG DRG	INSP REPORT	3/2	-	-	BATCH WISE
3.0	ASSEMBLY CONTROL											
3.1	COMPLETE STRAINER	1. WORKMANSHIP AND FINISH	MA	VISUAL	100%	APPD.DRG	APPD.DRG	INSPN. REPORT	2	2	-	
		2. OVERALL DIMENSIONS	MA	MEASUREMENT	100%	—DO—	DO—	—DO—	2	2,1	1	
		3. LEAK TIGHTNESS	CR	HYDRO TEST AT 1.5 TIMES THE DESIGN PRESSURE	100%	APPD.DRG/T ECH. SPEC	NO LEAKAGE	I.B.R / T.C.	2	2,1	1	

BHEL		PARTICULARS	BIDDER/VENDOR	BIDDER'S/ VENDOR'S COMPANY SEAL
GAURAV DIXIT		NAME		
GAURAV DIXIT.		SIGNATURE		
		DATE		

07.09.17

		QUALITY PLAN		CUSTOMER:		PROJECT: FRAMEWORK AGREEMENT		SPEC. NO : PE-TS-020-100-M010		
				BIDDER/VENDOR		QP NO. PE-QP-999-142-M003 REV.01 DTD. 25-01-2008		SPEC. TITLE STEAM TRAP		
		SHEET 2 OF 2		SYSTEM STEAM DRAINS		ITEM Y-TYPE STEAM STRAINERS		SECTION VOLUME 		
S.NO.	COMPONENT/ OPERATION	CHARACTERISTICS CHECKED	CATE- GORY	TYPE/METHOD OF CHECK	EXTENT OF CHECK	REFERENCE DOCUMENT	ACCEPTANCE NORMS	FORMAT OF RECORD	AGENCY P W * V	REMARKS

4.0	SOCKET WELDED ENDS	1. DIMENSIONS	CR	TEMPLATE	100%	APPD DRG/ TECH SPEC.	APPD DRG	INSPN REPORT	2	2,1	1	
		2. SURFACE DEFECTS	CR	PT	100%	ASTM E165	NO SURFACE DEFECTS	INSPN REPORT	2	2,1	1	
5.0	PAINTING	1.SURFACE PREPARATION	MA	VISUAL	100%	TECH SPEC	TECH SPEC	INSPN REPORT	3/2	2	1	
		2.PAINTING	MA	VISUAL	100%	APPD DRG/ TECH SPEC	APPD DRG/ TECH SPEC	INSPN REPORT	3/2	2	1	
6.0	VERIFICATION OF ALL PREVIOUS TEST CERTIFICATES/ INSPN REPORTS	REVIEW OF ALL TEST CERTIFICATES/ INSPN. REPORTS OF PREVIOUS STAGES	MA	VISUAL	100%	TECH SPEC	TECH SPEC	INSPN REPORT	2	2, 1	1	
								INSPN REPORT	2	2, 1	1	
7.0	PROVISION OF NAME PLATE & PACKING IN WOODEN CASES	AS PER TECH. SPEC.	MA	VISUAL	100%	TECH. SPEC	TECH. SPEC	(Soft copy of photographs)	3/2	2	1	

NOTE : CR = CRITICAL ACTIVITY

MA = MAJOR ACTIVITY

MI = MINOR ACTIVITY

1 = PURCHASER/BHEL

2 = VENDOR

3 = SUB VENDOR OF THE VENDOR

P = PERFORMED BY

W = WITNESSED BY

V = VERIFIED BY

*The Quantum of check to be witnessed is 10% or Min. 2 Nos. at random by BHEL/Customer & 100 % by Vendor for each type, Size & Rating.

BHEL		PARTICULARS		BIDDER/VENDOR		BIDDER'S/ VENDOR'S COMPANY SEAL
		NAME				
		SIGNATURE				
		DATE				

07.09.17

	QUALITY PLAN		CUSTOMER:			PROJECT: FRAMEWORK AGREEMENT		SPEC. NO : PE-TS-020-100-M010				
			BIDDER/VENDOR :-			QP. NO : PE-QP-999-142-M022 REV. 01 DTD.25-01-2008		SPEC. TITLE STEAM TRAPS				
	SHEET 1 OF 3		SYSTEM :- GSC DRAINS, EJECTOR DRAINS TO CONDENSER SURGE PIPE			ITEM: BALL FLOAT STEAM TRAP WITH THERMOSTATIC AIR VENT (balance pressure type)		SECTION VOLUME				
S.NO.	COMPONENT/ OPERATION	CHARACTERISTICS CHECKED	CATE- GORY	TYPE/METHOD OF CHECK	EXTENT OF CHECK	REFERENCE DOCUMENT	ACCEPTANCE NORMS	FORMAT OF RECORD	AGENCY P W * V			REMARKS

1.	MATERIALS											
1.1	BODY, COVER	1. PHYSICAL& CHEM. PROPERTIES	MA	PHYS.&CHEM, TEST	ONE /HEAT / HEAT BATCH 100%	APPD. DRG. / TECH. SPEC.	APPD. DRG./ TECH. SPEC.	TEST CERT.	3/2	2	1	CO-RELATED TCs SHALL BE FURNISHED.
		2. HEAT TREATMENT	MA	REVIEW OF HT CHART		APPD DRG./ TECH SPEC	RELEVANT STANDARD	H.T INTERNAL INSPN RECORDS INPSN REPORT	3/2	2	1	
		3.SURFACE DEFECTS	MA	VISUAL	100%	MSS-SP-55	MSS-SP-55		3/2	2	1	
		4.DIMENSIONS	MA	MEASUREMENT	100%	MFG. DRG	MFG. DRG	INPSN REPORT	3/2	2	1	
1.2	BALL FLOAT WITH LEVER, VALVE, VALVE SEAT, PIVOT FRAME, SUPPORT FRAME, PIVOT PIN, VALVE SEAT GASKET	1. CHEM. PROPERTIES	MA	CHEM. TEST	ONE /HEAT / BATCH	APPD. DRG	APPD. DRG	TEST CERT	3/2	2	1	
		2. SURFACE DEFECTS	MA	VISUAL	100%	MSS-SP-55	MSS-SP-55	INSPN. REPORT	3/2	2	1	
1.3	THERMOSTATIC AIR VENT	1. MATERIALS	MA	REVIEW OF ALL TEST CERT./ MATL TCs	100%	MFG. DRG MANUFATURER'S SPEC.	MFG. DRG MANUFATURER'S SPEC.	INSPN REPORT	3/2	2	1	
1.4	FASTENERS	1. PHYS., CHEM. PROPERTIES	MA	PHYS., CHEM. TEST	ONE PER TYPE	APPD. DRG	APPD. DRG	TEST CERT	3/2	2	1	
2.0	IN-PROCESS											
2.1	ALL COMPONENTS	1.DIMENSIONS	MA	MEASUREMENT	100%	MFG. DRAWING	MFG. DRAWING	INT. INSPN. REPORT	3/2	-	--	
		2. SURFACE DEFECTS	MA	VISUAL	100%	-DO-	-DO-	INSPN. REPORT	3/2	-	--	

BHEL		PARTICULARS	BIDDER/VENDOR	BIDDER'S/ VENDOR'S COMPANY SEAL
GAURAV DIXIT		NAME		
Gaurav Dixit		SIGNATURE		
		DATE		

	QUALITY PLAN		CUSTOMER:			PROJECT:		FRAMEWORK AGREEMENT		SPEC. NO : PE-TS-020-100-M010		
			BIDDER/VENDOR :-			QP. NO : PE-QP-999-142-M022		REV. 01 DTD.25-01-2008		SPEC. TITLE STEAM TRAPS		
	SHEET 2 OF 3		SYSTEM :- GSC DRAINS, EJECTOR DRAINS TO CONDENSER SURGE PIPE			ITEM: BALL FLOAT STEAM TRAP WITH THERMOSTATIC AIR VENT (balance pressure type)				SECTION VOLUME		
S.NO.	COMPONENT/ OPERATION	CHARACTERISTICS CHECKED	CATE- GORY	TYPE/METHOD OF CHECK	EXTENT OF CHECK	REFERENCE DOCUMENT	ACCEPTANCE NORMS	FORMAT OF RECORD	AGENCY P W * V			REMARKS

3.0	VALVE, VALVE SEAT	1. SURFACE DEFECTS. 2. LAPPING	CR MA	PENTRANT TEST BLUE MATCHING	100% 100%	ASTME-165 SEATING SURFACE SHALL HAVE UNIFORM METAL TO METAL CONTACT	NO DEFECTS	INPN. REPORT LOG BOOK	2 2	2 2	1 1	
3.0	SUB- ASSEMBLY											
3.1	VALVE & VALVE SEAT	1. LEAK TIGHTNESS	CR	AIR/HYD.	100%	APPD. DRG	APPD. DRG.	INT. INSPN. REPORT	2	2	1	
3.2	COVER	1. ALIGNMENT	MA	VISUAL	100%	-DO-	PROPER FITTING	INT. INSPN. REPORT	2	-	-	
4.0	ASSEMBLY											
4.1	COMPLETE ASSEMBLY	1. CLEANLINESS & COMPLETENESS, DIMENSIONS, SW ENDS, ARROW MARKING ETC. 2. LEAK TIGHTNESS OF BODY AND COVER 3. FUNCTIONAL TEST OF TRAP	MA CR CR	VISUAL & MEASUREMENT HYDRO TEST AT 1.5 TIMES THE DESIGN PRESSURE PERFORMANCE UNDER SIMULATED CONDITIONS	100% 100% ONE PER LOT / SIZE	APPROVED DRAWING APPD. DRG./TECH. SPEC./DATA SHEET SMOOTH AND EFFECTIVE OPERATION OF TRAP	APPROVED DRAWING NO LEAKAGE DRAINS OUT CONDENSATE ONLY AND NO STEAM	INSPN REPORT TEST CERT TEST CERT.	2 3/2 2	2,1 1 1	1 1 1	BATCH WISE TEST PROCEDURE TO BE SUBMITTED FOR REVIEW
4.2	Flow capacity test(type test)	Condensate discharge	CR	Discharge flow	1 per pressure rating & orifice size trap	Appd. Flow capacity	Appd. Flow capacity	Type test certificate	3/2	2	1	TYPE TEST CERT FOR VERIFICATION, IF CARRIED OUT EARLIER FOR SAME SIZE, RATING OF TRAP & ORIFICE SIZE
5.0	END CONN.	1. DIMENSIONS	CR	MEASUREMENT	100%	APPD. DRG./ TECH. SPEC	APPD.DRG/ TECH.SPEC	INSPN REPORT	3/2	2	1	

BHEL		PARTICULARS		BIDDER/VENDOR		BIDDER'S/ VENDOR'S COMPANY SEAL
GURAV DIXIT Gurav Dixit.		NAME				
		SIGNATURE				
		DATE				

		QUALITY PLAN		CUSTOMER:		PROJECT:		FRAMEWORK AGREEMENT		SPEC. NO : PE-TS-020-100-M010		
				BIDDER/VENDOR :-		QP. NO : PE-QP-999-142-M022		REV. 01 DTD.25-01-2008		SPEC. TITLE STEAM TRAPS		
		SHEET 3 OF 3		SYSTEM :- GSC DRAINS, EJECTOR DRAINS TO CONDENSER SURGE PIPE		ITEM: BALL FLOAT STEAM TRAP WITH THERMOSTATIC AIR VENT (balance pressure type)		SECTION		VOLUME		
S.NO.	COMPONENT/ OPERATION	CHARACTERISTICS CHECKED	CATE- GORY	TYPE/METHOD OF CHECK	EXTENT OF CHECK	REFERENCE DOCUMENT	ACCEPTANCE NORMS	FORMAT OF RECORD	AGENCY P W * V			REMARKS

		2. SURFACE DEFECTS	CR	PENTRANT TEST	100%	ASTM E165	NO DEFECTS	INSPN REPORT	2	2	1	
6.0	PAINTING	1. SURFACE PREPARATION & UNIFORMITY OF PAINT	MI	VISUAL	100%	APPD. DRG./ TECH. SPEC.	APPD. DRG./ TECH SPEC.	INSPN REPORT	3/2	2	1	
7.0	VERIFICATION OF ALL PREVIOUS TEST CERTIFICATES	REVIEW OF ALL TEST CERTIFICATES/ INSP. REPORTS AS PER TECH. SPEC.	MA	VISUAL	100%	TECH. SPEC.	TECH. SPEC.	INSPN REPORT	2	2	1	
8.0	PROVISION OF NAME PLATE & PACKING IN WOODEN CASES	AS PER TECHNICAL SPECIFICATION	MA	VISUAL	100%	-DO-	-DO-	(Soft copy of photographs)	2	2	1	

ABBREVIATIONS:-

CR - CRITICAL

MA - MAJOR

MI - MINOR

1 = PURCHASER (BHEL)

2 = VENDOR

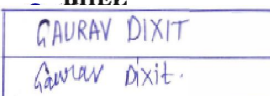
3 = SUB VENDOR OF THE VENDOR

P = PERFORMED BY

W = WITNESSED BY

V = VERIFIED BY

***The Quantum of check to be witnessed is 10% or Min. 2 Nos. at random by BHEL/Customer & 100 % by Vendor for each type, Size & Rating.**

BHEL		PARTICULARS	BIDDER/VENDOR	
		NAME		BIDDER'S/ VENDOR'S COMPANY SEAL
		SIGNATURE		
		DATE		

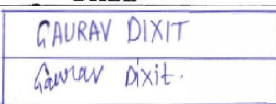
		QUALITY PLAN				CUSTOMER:			PROJECT		FRAMEWORK AGREEMENT		SPEC. NO : PE-TS-020-100-M010	
						BIDDER/VENDOR			QP NO PE-QP-999-142-M015		REV.01 DTD. 25-01-2008		SPEC.TITLE :STEAM TRAP	
		SHEET 1 OF 3		SYSTEM : POWER CYCLE			ITEM : INVERTED BUCKET STEAM TRAPS		SECTION VOLUME					
S. NO.	COMPONENT/ OPERATION	CHARACTERISTICS CHECKED	CATE- GORY	TYPE / METHOD OF CHECK	EXTENT OF CHECK	REFERENCE DOCUMENT	ACCEPTANCE NORMS	FORMAT OF RECORD	AGENCY P W * V	REMARKS				

1.	MATERIALS												
1.1	BODY, COVER, VALVE, VALVE SEAT, BUCKET, VALVE LEVER, BUCKET CLIP & WEIGHT	1. PHYSICAL, CHEMICAL PROPERTIES	MA	PHSY., CHEM. PROPS	ONE /HEAT / HT BATCH	APPROVED DRAWING/ TECH. SPECIFICATION/DATA SHEET	APPROVED DRAWING/ RELEVANT MATERIAL SPECIFICATION	TEST CERTIFICATE	3/2	2	1	BATCH WISE	
		2. SURFACE DEFECTS	MA	VISUAL	100%	MSS-SP-55	MSS-SP-55	INSPN. REPORT	3	2	1		
1.2	INTEGRAL STRAINER (IF APPLICABLE)	CHEM PROPERTIES & MESH SIZE/ PERFORATION DIA.	MA	CHEM. TESTS & MEASUREMENT	1/SHEET SAMPLE PIECE	APPD. DATA SHT. & TECH SPEC.	APPD. DATA SHT. & TECH SPEC.	TEST CERT. /INSP. REPORT	3	2	1		
2.0	IN-PROCESS												
2.1	ALL COMPONENTS	1. DIMENSIONS	MA	MEASUREMENT	100%	MFG. DRAWING	MFG. DRAWING	LOG BOOK	3/2	-	-		
		2. SURFACE DEFECTS	MA	VISUAL	100%	--DO--	--DO--	-DO-	3/2	-	-		
2.2	VALVE, VALVE SEAT	1. SURFACE DEFECTS	CR	PENTRANT TEST	100%	ASTME-165	NO DEFECTS	INSPN. REPORT	3/2	-	2,1		
		2. HARDNESS	MA	TESTING	100%	APPD. DRG.	APPD. DRG.	INSPN REPORT	3/2	-	2,1		
		3. LAPPING	MA	BLUE MATCHING	100%	SEATING SURFACES SHALL HAVE UNIFORM METAL TO METAL CONTACT		INSPN REPORT	3/2	-	1		
3/0	SUB- ASSEMBLY												
3.1	VALVE & VALVE SEAT	1. LEAK TIGHTNESS	CR	HYDRO/AIR TEST	100%	APPD. DRG	APPD. DRG.	TEST. CERT.	3/2	-	2,1		
3.2	COVER	1. ALIGNMENT	MA	VISUAL	100%	--DO--	PROPER FITTING	LOG BOOK	3/2	-	-		

BHEL		PARTICULARS	BIDDER/VENDOR		
	GAURAV DIXIT	NAME			
	Gaurav Dixit	SIGNATURE			
		DATE			
					BIDDER'S/VENDOR'S COMPANY SEAL

	QUALITY PLAN			CUSTOMER:			PROJECT : FRAMEWORK AGREEMENT		SPEC. NO : PE-TS-020-100-M010		
				BIDDER/VENDOR			QP NO PE-QP-999-142-M015 REV.01 DTD. 25-01-2008		SPEC.TITLE :STEAM TRAP		
	SHEET 2 OF 3			SYSTEM : POWER CYCLE			ITEM : INVERTED BUCKET STEAM TRAPS		SECTION VOLUME		
S. NO.	COMPONENT/ OPERATION	CHARACTERISTICS CHECKED	CATE- GORY	TYPE / METHOD OF CHECK	EXTENT OF CHECK	REFERENCE DOCUMENT	ACCEPTANCE NORMS	FORMAT OF RECORD	AGENCY P W * V	REMARKS	

4.0	ASSEMBLY											
4.1	COMPLETE ASSEMBLY	1.CLEANLINESS& COMPLETNESS, DIMENSIONS, SOCKET WELD ENDS, ARROW MARKING ETC.	MA	VISUAL & MEASUREMENT	100%	APPROVED DRAWING	APPROVED DRAWING	INSPN .REPORT	3/2	2,1	-	
		2.LEAK TIGHTNESS OF BODY	CR	HYDRO. TEST	100%	APPD. DRG./TECH. SPEC./DATA SHEET	NO LEAKAGE	TEST CERT	3/2	2,1	-	IBR CERTIFICATE IF REQD. TO BE FURNISHED
		3.FUNCTIONAL TEST OF TRAP	CR	PERFORMANCE TEST UNDER SIMULATED CONDITION	100%	TEST CHART	SMOOTH AND EFFECTIVE OPERATION OF TRAP	TEST CERT.	3/2	2,1	1*	TEST PROCEDURE TO BE SUBMITTED FOR REVIEW
4.2	Flow capacity test(type test)	Condensate discharge	CR	Discharge flow	1 per pressure rating & orifice size trap	Appd. Flow capacity	Appd. Flow capacity	Type test certificate	3/2	2	1	
5.0	SOCKET WELD ENDS	1.DIMENSIONS	CR	TEMPLATE	100%	APPD. DRG./TECH. SPEC.	APPD. DRG.	INSPN REPORT	2	2,1	1	BATCH WISE
		2. SURFACE DEFECTS	CR	PT	100%	ASTM E 165	NO SURFACE DEFECTS	INSP. REPORT	2	2,1	-	
6.0	PAINTING	1. SURFACE PREPARATION & PAINTING	MA	VISUAL	100%	TECH. SPEC.	TECH. SPEC.	INSPN REPORT	3/2	2	1	
7.0	VERIFICATION OF ALL PREVIOUS TEST CERTIFICATES/ INSPN REPORTS	1. REVIEW OF ALL TEST CERTIFICATES/ INSPN. REPORTS OF PREVIOUS STAGES	MA	VISUAL	100%	TECH. SPEC.	TECH. SPEC.	INSPN REPORT	3/2	-	2,1	

BHEL		PARTICULARS	BIDDER/VENDOR	
		NAME		
		SIGNATURE		
		DATE		
				BIDDER'S/VENDOR'S COMPANY SEAL

	QUALITY PLAN		CUSTOMER:			PROJECT : FRAMEWORK AGREEMENT		SPEC. NO : PE-TS-020-100-M010			
			BIDDER/VENDOR			QP NO PE-QP-999-142-M015 REV.01 DTD. 25-01-2008		SPEC.TITLE :STEAM TRAP			
	SHEET 3 OF 3		SYSTEM : POWER CYCLE			ITEM : INVERTED BUCKET STEAM TRAPS		SECTION VOLUME			
S. NO.	COMPONENT/ OPERATION	CHARACTERISTICS CHECKED	CATE- GORY	TYPE / METHOD OF CHECK	EXTENT OF CHECK	REFERENCE DOCUMENT	ACCEPTANCE NORMS	FORMAT OF RECORD	AGENCY P W * V		REMARKS

8.0	PROVISION OF NAME PLATE & PACKING IN WOODEN BOXES	AS PER TECHNICAL SPECIFICATION	MA	VISUAL	100%	TECH. SPEC./APPD. DRG.	TECH. SPEC./APPD. DRG.	(Soft copy of photographs)	3/2	-	-	
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NOTE:-

CR- MEANS CRITICAL ACTIVITY
P - PERFORMED BY
3 - SUB-VENDOR OF THE VENDOR

MA- MEANS MAJOR ACTIVITY
W - WITNESSED BY
2 - VENDOR

V - VERIFIED BY
1- PURCHASER(BHEL)

***The Quantum of check to be witnessed is 10% or Min. 2 Nos. at random by BHEL/Customer & 100 % by Vendor for each type, Size & Rating.**

BHEL		PARTICULARS	BIDDER/VENDOR	
GAURAV DIXIT		NAME		
Gaurav Dixit.		SIGNATURE		
		DATE		
BIDDER'S/VENDOR'S COMPANY SEAL				

07.09.17

	QUALITY PLAN		CUSTOMER:			PROJECT: FRAMEWORK AGREEMENT			SPEC. NO : PE-TS-020-100-M010			
			BIDDER/VENDOR			QP NO. PE-QP-999-142-M003 REV:00 DTD. 24.05.2014			SPEC. TITLE : STEAM TRAPS			
	SHEET 1 OF 2		SYSTEM POWER CYCLE			ITEM: THERMOSTATIC STEAM TRAPS			SECTION		VOLUME	
S.NO.	COMPONENT/ OPERATION	CHARACTERISTICS CHECKED	CATE- GORY	TYPE/METHOD OF CHECK	EXTENT OF CHECK	REFERENCE DOCUMENT	ACCEPTANCE NORMS	FORMAT OF RECORD	AGENCY		REMARKS	
									P	W * V		

1.0	RAW- MATERIAL											
1.1	BODY,CAP,DISC AND PLUG	1. PHYSICAL, CHEMICAL PROPERTIES	MA	PHYS. CHEM. ANALYSIS	ONE/HEAT /BATCH	APPD. DRG./ TECH. SPEC.	APPD. DRG./ TECH. SPEC.	TEST CERT.	3/2	2	1	CORRELATION REQD (except disc & plug)
		2. SURFACE DEFECTS	MA	VISUAL	100%	MSS-SP-55	MSS-SP-55	INSPN. REPORT	3/2	-	2,1	
		3. DIMENSIONS	MA	MEASUREMENT	100%	APPD. DRG./ TECH. SPEC.	APPD. DRG./ TECH. SPEC.	-DO-	3/2	-	-	
1.2	SCREEN	1.CHEMICAL PROPERTIES AND MESH SIZE	MA	CHEMICAL TEST & MEASUREMENT	ONE PER LOT	APPD. DRGS./ DATA SHEET	APPD. DRGS./ DATA SHEET	LAB REPORT/ INSP. REPORT	3/2	2	2,1	MESH SIZE AND MESH PERFORATION DIA. SHALL ALSO BE CHECKED.
2.0	MACHINING											
2.1	ALL COMPONENTS	1. DIMENSIONS	MA	MEASUREMENT	100%	-DO-	-DO-	INSP. REPORT	3/2	-	-	
		2. SURFACE DEFECTS	MA	VISUAL EXAM.	100%	MSS-SP-55	MSS-SP-55	-DO-	3/2	-	-	
		3. Hardness of valve Seat	CR	HARDNESS TEST	100%	APPD. DRGS./ DATA SHEET ASTM E165	APPD. DRGS./ DATA SHEET NO DECECTS	-DO-	3/2	2	2,1	
		4. BODY SEAT	CR	SURFACE DEFECT	100%			-DO-	3/2	2	2,1	
3.0	ASSEMBLY INSPECTION	1. CLEANING & DEBURING	MA	VISUAL	100%	TECH SPEC.	TECH SPEC	LOG BOOK	3/2	-	-	BATCH WISE
		2. DIMENSIONS	CR	MEASUREMENT	100%	-DO-	APPD. DRGS./ DATA SHEET	INSP. REPORT	3/2	2,1	1	
		3. LEAK TIGHTNESS OF BODY	CR	HYDRAULIC TEST	100%	APPD. DRG./ TECH. SPEC./ DATA SHEET	NO LEAKAGE	TC/IBR FORMAT	3/2	2,1	1	

BHEL		PARTICULARS	BIDDER/VENDOR	
GAURAV DIXIT		NAME		
Gaurav Dixit.		SIGNATURE		
		DATE		
BIDDER'S/ VENDOR'S COMPANY SEAL				

		QUALITY PLAN		CUSTOMER:		PROJECT: FRAMEWORK AGREEMENT		SPEC. PE-TS-020-100-M010		
				BIDDER/VENDOR		QP NO. PE-QP-999-142-M003 REV:00 DTD. 24.05.2014		SPEC. TITLE :STEAM TRAPS		
SHEET 2 OF 2		SYSTEM		POWER CYCLE		ITEM: THERMOSTATIC STEAM TRAPS		SECTION VOLUME		
S.NO.	COMPONENT/ OPERATION	CHARACTERISTICS CHECKED	CATE- GORY	TYPE/METHOD OF CHECK	EXTENT OF CHECK	REFERENCE DOCUMENT	ACCEPTANCE NORMS	FORMAT OF RECORD	AGENCY P W * V	REMARKS

3.0	ASSEMBLY INSPECTION CONTD.(—)	4. FUNCTION OF TRAP	CR	PERFORMANCE TESTING IN SIMULATED CONDITIONS	10% (RANDOM) MIN.1 NO.	APPD. DRG./ TECH. SPEC./ DATA SHEET	TECH. SPEC./ DATA SHEET/APPD. DRG	TC/IBR FORMAT	2	1	1	TEST PROCEDURE TO BE SUBMITTED FOR REVIEW
4.0	SOCKET WELD ENDS	1.DIMENSIONS	CR	TEMPLATE	100%	APPD. DRG./ TECH. SPEC.	P APPD. DRG./TECH. SPEC.	INSPE. REPORT	2	1	1	
		2. SURFACE DEFECTS	CR	PT	100%	ASTME 165	NO SURFACE DEFECTS	-DO-	2	1	1	
5.0	PAINTING	SURFACE PREPARATION AND PAINTING	MA	VISUAL	100%	APPD DRG	APPROD DRG	-DO-	2	2	1	
6.0	PROVISION OF NAME PLATE & PACKING IN WOODEN CASE	AS PER TECH. SPEC.	MA	VISUAL	100%	APPD DRG./ TECH. SPEC.	APPD DRG./ TECH. SPEC.	(Soft copy of photographs)	3/2	-	1	Photographs of valves after packing to be verified by BHEL before issuing MDCC.

ABBREVIATIONS

CR= CRITICAL CHARACTERISTIC P= PERFORMED BY, W = WITNESSED BY V = VERIFIED BY

MA=MAJOR CHARACTERISTIC, 1= PURCHASER (BHEL) 2 = VENDOR, 3 = SUB VENDOR OF THE VENDOR

NOTE: SUCCESSFUL VENDOR SHALL SUBMIT FUNCTIONAL TEST PROCEDURE OF TRAP ALONG WITH QP IMMEDIATELY AFTER ORDER IS PLACED FOR APPROVAL.

BHEL		PARTICULARS	BIDDER/VENDOR
 		NAME	
		SIGNATURE	
		DATE	
BIDDER'S/ VENDOR'S COMPANY SEAL			

	COMPLIANCE SHEET STEAM TRAPS FRAMEWORK AGREEMENT	SPECIFICATION NO. PE-TS-020-100-M010	
		SECTION : II	
		REV. NO.: 00	DATE: 07.09.2017
		Sheet 1 of 1	

- A. I hereby comply/not comply (*) to all the requirements of this technical specification in totality.
 In case the bidder does not comply to the technical specification, the deviations shall be explicitly listed in the technical deviation sheet of GCC. Deviations listed in technical deviation sheet shall only be considered.
- B. Bidder to tick whichever is applicable:

Quoted for Category-I items of Data Sheet-A ☐	Quoted for Category-II items of Data Sheet-A ☐	Quoted for both Category-I & II items of Data Sheet-A ☐
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- C. Specify NB & MOC of trap & strainer offered. (as applicable).

Sl.No. (As per Data Sheet-A)	Type (As per Data Sheet-A)	Trap Size (NB) (To be filled by Bidder)	MOC (To be filled by Bidder)	Material Grade (To be filled by Bidder)
CAT-I				
1	THERMODYNAMIC STEAM TRAP-LP			
2	THERMODYNAMIC STEAM TRAP-HP			
3	INVERTED BUCKET TRAP		NA	
4	BALL FLOAT STEAM TRAP		NA	
5	EXTERNAL Y-TYPE STRAINER		NA	
CAT-II				
1	THERMOSTATIC STEAM TRAP-LP			
2	THERMOSTATIC STEAM TRAP-HP			
3	INVERTED BUCKET TRAP		NA	
4	BALL FLOAT STEAM TRAP		NA	
5	EXTERNAL Y-TYPE STRAINER		NA	

Name of Bidder / Authorized Representative :-

Designation :-

Signature:-

Company Seal :-

Date :-
