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- 1.0 The tender document contains three (3) volumes. The bidder shall meet the requirements of all the three volumes.

1.1 **Volume-I** (CONDITIONS OF CONTRACT)

This consists of four parts as below:-

- Volume-IA : This part contains instructions to bidders for making bids to BHEL.
- Volume-IB : This part contains general commercial conditions of the tender & includes provision that vendor is responsible for the quality of item supplied by their sub-vendors.
- Volume-IC : This part contains special conditions of contract.
- Volume-ID : This part contains commercial conditions for erection & commissioning site work, as applicable.

1.2 **Volume-II** TECHNICAL SPECIFICATIONS

Technical requirements are stipulated in Volume-II which comprises of:-

- Volume-IIA : General Technical Conditions
- Volume-IIB : Technical Specification including Drawings, if any.

1.2.1 **Volume-IIB**

This volume is sub-divided into following sections:-

- Section-A : This section outlines the scope of enquiry.
- Section-B : This section provides "Project Information".
- Section-C : This section indicates technical requirements specific to the contract, not covered in Section-D.
- Section-D : This section comprises of technical specifications of equipments complete with data sheet A, B and C.

Data Sheet - A Specifies data and other requirements pertaining to the Equipment.

Data Sheet - B Specifies data to be filled by the bidder (Data Sheet-B is contained in Volume-III).

Data Sheet -C Indicates data/documents to be furnished after the award of contract as per agreed schedule by the vendor (as applicable).

1.2.2 **Volume-III** (TECHNICAL SCHEDULES)

This volume contains technical schedules and Data Sheets-B, which are to be duly filled by the bidder and the same shall be furnished with the technical bid.

- 2.0 The requirements mentioned in Section-C / Data Sheets-A of section-D shall prevail and govern in case of conflict between the same and the corresponding requirements mentioned in the descriptive portion in Section-D.

**2X660MW SURATGARH STPP
(STAGE-V, UNIT#7&8)**


VOLUME – IIB

**TECHNICAL SPECIFICATION
FOR
AIR RELEASE VALVES**

SPECIFICATION NO. PE-TS-392-100-M019




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

	TECHNICAL SPECIFICATION AIR RELEASE VALVES 2X660MW SURATGARH STPP (STAGE-V, UNIT#7&8)	SPECIFICATION NO. PE-TS-392-100-M019	
		VOLUME : IIB	
		SECTION:	
		REV. NO.: 00	DATE: 07.05.2014
		SHEET 1	OF 1


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D	STANDARD TECHNICAL SPECIFICATIONS
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	DATA SHEET – C

	TECHNICAL SPECIFICATION AIR RELEASE VALVES	SPECIFICATION NO. PE-TS-392-100-M019	
		VOLUME : IIB	
		SECTION: A	
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SECTION-A

SCOPE OF ENQUIRY

	TECHNICAL SPECIFICATION AIR RELEASE VALVES 2X660MW SURATGARH STPP (STAGE-V, UNIT#7&8)		SPECIFICATION NO. PE-TS-392-100-M019	
			VOLUME : IIB	
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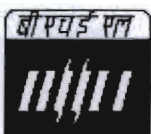
SCOPE OF ENQUIRY

1. SCOPE

This enquiry covers the Design, Manufacture, Inspection & Testing at vendor's and/or his sub-vendor's works, proper packing and delivery to site of Air release valves without isolating gate valve complete with all accessories as per the requirements mentioned in different sections of the specification for 2X660MW SURATGARH STPP (STAGE-V, UNIT#7&8).


2. GENERAL TECHNICAL INSTRUCTIONS

- a) It is not the intent to specify herein all the details of design and manufacture. However the equipment shall conform in all respects to high standards of design, engineering and workmanship, and shall be capable of performing the required duties in a manner acceptable to Engineer/ Owner, who will interpret the meaning of drawing and specifications, and shall be entitled to reject any component or material, which in his judgement is not in full accordance herewith.
- b) The omission of specific reference to any component/ accessories necessary for the proper performance of Air release valves without isolating gate valve shall not relieve the bidder of the responsibility of providing such facilities to complete the supply of Air release valves without isolating gate valve at quoted prices.
- c) Design/ drawings/ data sheets etc. shall be subject to approval of BHEL as per specification, in the event of order.
- d) BHEL's / customer's representative shall be given access to the shop in which the equipment are being manufactured or tested and all test records shall be made available to him.
- e) The equipment covered under this specification shall not be despatched unless the same have been finally inspected, accepted and shipping release issued by BHEL.

	TECHNICAL SPECIFICATION AIR RELEASE VALVES	SPECIFICATION NO. PE-TS-392-100-M019	
		VOLUME : IIB	
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SECTION-B

PROJECT INFORMATION

	TECHNICAL SPECIFICATION BUTTERFLY VALVES (STEAM SERVICE) 2X660MW SURATGARH STPP (STAGE-V, UNIT#7&8)	SPECIFICATION NO. PE-TS-392-100-M019	
		VOLUME : IIB	
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PROJECT INFORMATION

- Project information will be provided later. The bidder shall acquaint himself by a visit to the site, if felt necessary, with the conditions prevailing at site before submission of the bid. The information provided in this section will be for general guidance and shall not be contractually binding on BHEL/OWNER. All relevant site data/information as may be necessary shall have to be obtained/ collected by the bidder.
- The plant site is located in Prabat Nagar, Suratgarh, Sriganganagar district, Rajasthan having latitude and longitude of 29°10' N and 74°01' E respectively.

	TECHNICAL SPECIFICATION AIR RELEASE VALVES	SPECIFICATION NO. PE-TS-392-100-M019	
		VOLUME : IIB	
		SECTION: C	
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SECTION-C

SPECIFIC TECHNICAL REQUIREMENTS

	SPECIFIC TECHNICAL REQUIREMENTS AIR RELEASE VALVES 2X660MW SURATGARH STPP (STAGE-V, UNIT#7&8)		SPECIFICATION NO. PE-TS-392-100-M019
			SECTION C
		REV. NO.: 00	DATE: 07.05.2014
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1. GENERAL

- 1.1 The valves shall meet the technical requirements and conform to the standard technical specification and Data sheet A of Section D. In addition, the requirements of this Section-C shall also be complied with. However, wherever the details given in standard technical specification of Section-D and Data sheet A are different, the requirements of Data sheet A shall prevail. Similarly in the event of contradictions between Section –C & Section –D/ Data sheet A, Section –C will prevail.
- 1.2 The technical requirements for valves shall, in general, be as per the attached standard Technical specification for Valves, and Data sheet A of Vol. II B Section D.

2. SCOPE OF SUPPLY

- 2.1 The valves complete with all accessories shall be supplied as per Data sheet A of Section D. For detail refer the same. Each valve (quantity and other details specified in Data Sheet-A) shall be complete with the following accessories.
 - i) Lifting arrangement provision for handling i.e., lifting lugs, eye bolts etc.
- 2.2 Commissioning spares, if any.
- 2.3 Set of special tools and tackles if required for the maintenance, erection etc. of the equipment supplied.
- 2.4 Mandatory spares as applicable depending upon the project requirement.
- 2.5 Finish paints for touch-up painting of equipment after erection at site in sealed containers.
- 2.6 Various drawings, datasheets, operation and maintenance manuals etc., as specified in Data Sheet-C.


3. EXCLUSIONS:

The following are excluded from the bidder's scope:

- a) Counter flanges and their nuts and bolts..
- b) Erection & Commissioning of equipment at site.

4. QUALITY ASSURANCE

The Quality Plans enclosed with this specification specify minimum quality control requirement. During contract stage vendor shall furnish these Quality Plans duly signed & stamped for their compliance. Quality plans shall be approved by BHEL and customer (If necessary). 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.

	SPECIFIC TECHNICAL REQUIREMENTS		SPECIFICATION NO. PE-TS-392-100-M019
	AIR RELEASE VALVES		SECTION C
	2X660MW SURATGARH STPP		REV. NO.: 00 DATE: 07.05.2014
	(STAGE-V, UNIT#7&8)		Sheet 2 of 3

5 PAINTING REQUIREMENT:

a) Non-Coastal locations:

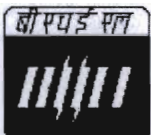
Valve shall be painted externally after the necessary testing has been carried out. Just before the painting, valve bodies and other items shall be thoroughly cleaned with wire brush/hand tool (Sa1/St2/St3 as applicable). The valves shall be first painted with two coats of primer zinc Chromate to IS 2074 (alkyd medium) each coat of DFT minimum of 25 to 35 microns. Finish paint shall be of three(3) coats of synthetic enamel (alkyd medium) as per IS 2932 & each coat DFT of minimum 20-35 microns & the total DFT of primer & finish paint shall be 150 microns minimum. Colour shade of finished/final paint shall be shade no. 217 of IS 5 or Grey as per RAL 9002.

b) Coastal locations:

~~Valve shall be painted externally after the necessary testing has been carried out. Just before the painting, valve bodies and other items shall be thoroughly cleaned with wire brush/hand tool (Sa1/St2/St3 as applicable). For coastal environment the primer shall be two coats of epoxy red oxide zinc phosphate with each coat of DFT equal to 25-35 microns. Total DFT of primer coats 50 Microns minimum. This shall be followed by 2 coats of intermediate coat (each coat 20-30 DFT) of Epoxy based TiO2 pigmented paint with minimum. Total DFT of 50 micron shall be applied over primer painted surface. 2 finished coats (each coat 20-30 DFT) of Epoxy based finish paint of minimum DFT as 50 micron shall be applied over intermediate painted surface. Finished Paint colour shade shall be grey as per RAL 9002. Total DFT of primer+Intermediate+Finish paint shall not be less than 150 microns in case coastal environment.~~

6 PACKING INSTRUCTIONS:

- Each valve 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.
- The valve shall be dispatched in total assembled form.
- Discs of all valves shall be properly secured while dispatching so that there is no risk of damage to the disc & seat.
- Body ends shall be suitably sealed to protect them against damage during transit and storage.
- A thin sheet steel circular blanking plate of a diameter 6mm less than the bolt holes inner P.C.D. shall be firmly fixed to the flange faces by the application of adhesive after first ensuring that the flange faces have been thoroughly degreased. A thin coat of adhesive shall be applied to the flange face and the blanking plate and then allowed to dry for 15-20 minutes. The coated face of the blanking plate should then be offered up to the face of the flange taking care that the plate is concentric with the flange. Firm pressure shall be applied to ensure intimate contact between plate and flange. A wooden blank should then be bolted to the flange using a minimum of 4 bolts.
- Valve Tag Nos. shall be incorporated in all the dispatch documents.
- Proper care shall be taken to avoid damage to the painted surface during transit.
- Vendor to provide soft copy of photos/snaps of duly packed valve. The soft copies to be provided by vendor after final inspection of valves. Clearance for dispatch of valves will be given only after satisfactory packing conditions of valves from vendors work.

	SPECIFIC TECHNICAL REQUIREMENTS AIR RELEASE VALVES 2X660MW SURATGARH STPP (STAGE-V, UNIT#7&8)		SPECIFICATION NO. PE-TS-392-100-M019
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- i) All the valves 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.

7 SPARES


- a) **Mandatory Spares:** These shall be as per Data Sheet-A.
- b) **Recommended Spares:** ~~List of recommended spares for 3 year reliable operation along with the unit price shall be indicated in the schedule of prices for recommended spares enclosed in Volume III. Cost of Recommended spares shall not be included in the base price.~~
- c) Order for the spares may be placed simultaneously or otherwise at the option of purchaser.

8 DOCUMENTS TO BE SUBMITTED ALONG WITH OFFER

Bidder shall submit the following documents (enclosed in Vol III) duly filled, signed and stamped along with the bid:


- Compliance sheet
- Schedule of Deviations if any.
- Schedules of Price & Unit Price for each project.
- Schedule of declaration.

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.

	TITLE: TECHNICAL SPECIFICATION AIR RELEASE VALVES	SPECIFICATION NO. PE-TS-392-100-M019	
		VOLUME : IIB	
		SECTION: D	
		REV. NO.: 00	DATE: 07.05.2014
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SECTION-D

STANDARD TECHNICAL SPECIFICATION DATA SHEET – A QUALITY PLAN DATA SHEET – C

	STANDARD TECHNICAL SPECIFICATION FOR Air release valves		SPECIFICATION NO. PE-SS-999-100-M019	
			VOLUME II-B	
			SECTION D	
			REV. NO. 01	DATE: 29-05-2012
	SHEET 1 OF 2			

1. GENERAL

This specification covers the design, materials, construction features, manufacture and testing of Air release valves at Vendor's or/ and sub-Vendor's works inclusive of painting and packing requirements.

2. CODES AND STANDARDS

- 2.1 The design, materials, construction features, manufacture, inspection and testing of valves shall conform to the latest applicable codes and standards.
- 2.2 The valves covered under this specification shall be designed and tested as per IS 14845.
- 2.3 In case of any conflict between the above codes/ standards and this specification, the latter shall prevail and in case of any further conflict in the matter, the interpretation of the specification by the Engineer shall be final and binding.

3. DESIGN REQUIREMENTS

- 3.1 Valves shall be flanged, double orifice, double float & kinetic type.
- 3.2 All valves shall be suitable for the service conditions i.e. flow, temperature and pressure under which they are required to operate and those performing similar duties shall be interchangeable with each other unless otherwise specified.

4. Materials


- 4.1 The materials of construction of main parts of Air release valves shall be as specified in Data Sheet-A.
- 4.2 The materials of construction of the remaining parts shall be as per the relevant standard governing the valves and to suit water quality. These materials shall be subjected to approval.
- 4.3 Material used in manufacture of valve shall be of tested quality.

5. CONSTRUCTION FEATURES

- 5.1 The float shall not close the valve at higher air velocities. The orifice contact joint with the float shall be leak tight. The valves shall efficiently discharge the displaced air automatically from pipes/ducts while filling them & admit air automatically into them while they are being emptied. The valve shall also be able to release any trapped air while at normal working conditions from pipes /ducts.
- 5.2 The body of valve shall be of one piece construction.
- 5.3 All valves shall be fitted with a stainless steel nameplate (2 mm thick) with valve tag nos. & service description, engraved 1 mm deep and filled with black enamel paint. This nameplate is in addition to the rating plate being provided by vendor indicating the valve body material, rating, size etc.

6. MANUFACTURE OF VALVES

- 6.1 Valve castings shall be procured from foundries observing strict quality control and approved by reputed customers.
- 6.2 Particular care shall be taken to ensure that all foundry sand and loose material is properly removed from castings by fettling before the valve's manufacture is started.

	STANDARD TECHNICAL SPECIFICATION FOR Air release valves		SPECIFICATION NO. PE-SS-999-100-M019	
			VOLUME II-B	
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			SHEET 2	OF 2

7 TESTING AND INSPECTION


- 7.1 The items covered under this contract shall be subjected to inspection, testing and quality surveillance. 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
- 7.2 The minimum NDT/testing and inspection requirements for valve 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 quality plan without any price implications.

8 PAINTING

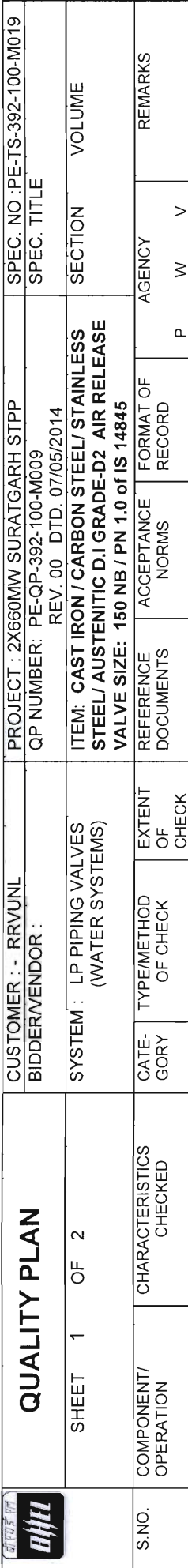
- 8.1 The surface preparation of all exterior and interior surfaces of valves shall include the following:
 - a) Removal of oil, grease, dirt and swarf etc.
 - b) Removal of rust and scale etc.,
 - c) Sand blasting/ shot blasting.
- 8.2 All exterior surfaces of valves shall be painted with primer and finish coated with coating of min. 150 microns thickness. Color shade etc. shall be subject to BHEL/ Customer approval.

9 CLEANING AND PROTECTION FOR DESPATCH

- 9.1 Each valve 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.
- 9.2 Floats of valves shall be properly secured while dispatching so that there is no risk of damage to them.
- 9.3 Valve ends shall be protected from external damage and sealed against the ingress of dirt. A thin sheet steel circular blanking plate of a diameter 6mm less than the bolt holes inner P.C.D. shall be firmly fixed to the flange faces by the application of adhesive after first ensuring that the flanges faces have been thoroughly degreased. A thin coat of adhesive shall be applied to the flange face and the blanking plate and then allowed to dry for 15-20 minutes. The coated face of the blanking plate should then be offered up to the face of the flange taking care that the plate is concentric with the flange. Firm pressure shall be applied to ensure intimate contact between plate and flange. A wooden blank should then be bolted to the flange using a minimum of 4 bolts.
- 9.4 All the valves shall be packed suitably in wooden cases in order to avoid damage during transit and also during storage at site.
- 9.5 Valve Tag Nos. shall be incorporated in all the dispatch documents.


	DATA SHEET-A AIR RELEASE VALVES 2X660MW SURATGARH STPP (STAGE-V, UNIT#7&8)	SPECIFICATION NO. PE-TS-392-100-M019	
		VOLUME-IIB	
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SI no	PARTICULAR	MATL. FOR CAST IRON	STAINLESS STEEL
1	BODY, HP& LP COVERS, COWL, JOINT SUPPORTING RING	IS 210 Gr. FG 260	ASTM A 743 Gr. CF8M
2	LP SEAT RING	Natural rubber	Natural rubber
3	H.P. ORIFICE, ORIFICE PLUG & FLOAT GUIDE	ASTM A182 Gr F6a	ASTM A 479 Type 316L
4	H.P. & L.P. FLOATS	Wooden(ebonite coated)	Wooden(ebonite coated)
5	GASKET	rubber	Teflon
6	BOLTS & NUTS	ASTM A193 Gr B7 & ASTM A194 Gr 2H	ASTM A193 Gr B8LN & ASTM A194 Gr 8LN
7	NAME PLATE FOR PURCHASER'S VALVE TAG NOS.	AISI 316 (2 MM THICK)	AISI 316 (2 MM THICK)



1.0	MATERIALS		MA	PHYSICAL & MECH TEST	1/HEAT/ HEAT TREAT-MENT	APPD.DRG/ TECH. SPEC.	APPD. DRG./ TECH. SPEC.	TEST CERT	3/2	2	1	PHYSICAL TEST ONLY FOR C/DI PARTS
1.1	BODY, HP & LP COVER, COWL,HP ORIFICE & PLUG	1. PHYSICAL & CHEMICAL PROPERTIES	MA									
		2. SURFACE DEFECTS	MA	VISUAL	100%	MSS-SP-55	NO HARMFUL DEFECTS	LOG BOOK	3/2	2	2	
		3. SUB-SURFACE DEFECTS(FOR BODY, HP & LP COVER)	CR	RT	100%	ASME B16.34	ASME B16.34	TC	3/2	2	1	RT FOR SS & AUSTENITIC D.I ASTM A439 GR. D2
		3. DIMENSIONS	MA	MEASUREMENT	100%	PROD. DRG./APPD. DRG	PROD. DRG./APPD. DRG	LOG BOOK	3/2	2	2	
1.2	WOODEN FLOATS, GASKET	1. DIMENSIONS	MA	MEASUREMENT	100%	-DO-	-DO-	-DO-	3/2	2	2	
		2. SURFACE DEFECTS	MA	VISUAL	100%	IS: 14845	FREE FROM DEFECTS	-DO-	3/2	2	2	
2.0	INPROCESS CONTROL											
2.1	MACHINING OF BODY, COVER, ORIFICE	1. DIMENSIONS	MA	MEASUREMENT	100%	PROD. DRG.	PROD. DRG.	-DO-	3/2	2	2	
		2. SURFACE DEFECTS	MA	VISUAL	100%	MSS-SP-55	FREE FROM DEFECTS	-DO-	3/2	2	2	
		3. SUB SURFACE DEFECTS	MA	PT	100%	ASME B 16.34 / ASTM E 165 IS: 14845	ASME B 16.34 / ASTM E 165 COMPLETE COVERING OF WOODEN FLOAT WITH EBONITE	TEST CERT	3/2	2	1	
2.2	FLOATS WITH EBONITE COATING, LP SEAT RING	1. SURFACE DEFECTS	MA	VISUAL	100%			-DO-	3/2	2	2	
		2. HARDNESS	MA	MEASUREMENT	100%	APPD DRG./ IS:14845 (cl. 10.6.1, cl.10.5.4& cl.10.5.5)	APPD DRG./ IS:14845 (cl. 10.6.1, cl.10.5.4& cl.10.5.5)	INSP. REPORT.	3/2	2	1	
		3. DIMENSIONS	MA	--DO--	100%	APPD DRG/ IS:14845(cl.	APPD DRG/ IS:14845(cl.	--DO--	3/2	2	1	

BHEL	PARTICULARS	BIDDER/VENDOR
ARVIND BHARDWAJ	NAME	
<i>[Signature]</i>	SIGNATURE	
07/05/2014	DATE	
		BIDDER'S/VENDOR'S COMPANY SEAL


	QUALITY PLAN					CUSTOMER : - RRVUNL	PROJECT : 2X660MW SURATGARH STPP		SPEC. NO : PE-TS-392-100-M019	
	SHEET 2 OF 2		BIDDER/VENDOR :		SYSTEM : LP PIPING VALVES (WATER SYSTEMS)	QP NUMBER: PE-QP-392-100-M009		SPEC. TITLE		
						REV. 00 DTD. 07/05/2014				
						ITEM: CAST IRON / CARBON STEEL/ STAINLESS STEEL/ AUSTENITIC D.I GRADE-D2 AIR RELEASE VALVE SIZE: 150 NB / PN 1.0 of IS 14845		SECTION	VOLUME	
S.NO.	COMPONENT/ OPERATION	CHARACTERISTICS CHECKED	CATE- GORY	TYPE/METHOD OF CHECK	EXTENT OF CHECK	REFERENCE DOCUMENTS	ACCEPTANCE NORMS	FORMAT OF RECORD	AGENCY	REMARKS
									P W V	


3.0 4.0 4.1	ASSEMBLY TESTING BODY	DIMENSIONS LEAKAGE	MA CR	MEASUREMENT HYDRAULIC	100%*** 100%***	10.5.1) APPD.DRG. APPD.DRG / IS:14845 (CL 12.4.4)	10.5.1) APPD. DRG. NO LEAKAGE	-DO- TEST CERT	3/2 3/2	2,1 2,1	- -
4.2	HP & LP ORIFICES SEAT TEST AND PERFORMANCE	LEAKAGE, FUNCTIONAL & PERFORMANCE TEST	CR	AIR/WATER	100%***	IS:14845 (CL.12.4.1, 12.4.2 & 12.4.3)	NO LEAKAGE AND SMOOTH & SATISFACTORY OPERATION	-DO-	3/2	2,1	-
5.0	END CONNECTION	DIMENSIONS	CR	MEASUREMENT	100%***	APPD. DRG./ TECH.SPEC.	APPD. DRG./ TECH.SPEC.	INSPN. REPORT	3/2	2,1	-
6.0	FINAL INSPECTION	1. CLEANLINESS 2. COMPLETENESS AND CORRECTNESS & NAMEPLATE WITH TAG NOS.	MA MA	VISUAL VERIFICATION OF RECORDS & CERTIFICATE	100%*** 100%	-DO- -DO-	-DO- -DO-	-DO- CERT.	3/2 3/2	2,1 2	- 1
7.0	PAINTING	1. QUALITY AND THICK-NESS OF PAINT	MA	VISUAL AND MEASUREMENT WITH PAINT THICKNESS GAUGE	100%	-DO-	-DO-	-DO-	3/2	2	1
8.0	PACKING	AS PER BHEL TECHNICAL SPEC.	MA	VISUAL	100%	TECH. SPEC.	TECH. SPEC.	(Soft copy of photographs)	3/2	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

*** 10% OR MIN. 2 NOS. AT RANDOM BY BHEL/ CUSTOMER & 100% BY VENDOR FOR EACH TYPE, SIZE & RATING.

BHEL		BIDDER/VENDOR	
ARVIND BHARDWAJ		NAME	
		SIGNATURE	
07/05/2014		DATE	
BIDDER'S/VENDOR'S COMPANY SEAL			

	TECHNICAL SPECIFICATION AIR RELEASE VALVES 2X660MW SURATGARH STPP (STAGE-V, UNIT#7&8)	SPECIFICATION NO. PE-TS-392-100-M019	
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DATA SHEET - C

Drawings/documents distribution schedule to be followed by the successful bidder:

1.0 The successful bidder shall submit the following drawings/documents within two weeks after award of contract.

- 1.1 Relevant drawings/leaflets for the valves showing following information.
 - i) Complete cross sectional arrangement of the valve.
 - ii) Binding dimensions, dismantling clearances & weights.
 - iii) Bill of material incorporating all the materials of construction of various parts along with BS/ASTM/IS standards to which the materials conform to.
 - iv) Special features, if any, as called for in the specific requirement
 - v) Type of oil/Grease wherever required and its annual consumption.
- 1.2 Quality Plan duly signed & stamped with bidder's seal.
- 2.0 The following shall be submitted within the stipulated time period as per vendor's drawings/ documents schedule, but not later than one month before first dispatch.
 - a) Drawings of components & details as deemed necessary.
 - b) Instruction manual for erection, operation and maintenance.
 - c) Storage instructions.
- 3.0 Before dispatch of the equipment the vendor shall furnish the following.
 - a) Material Test certificates.
 - b) Shop test reports and certificates.
- 4.0 Distribution of drawings / documents for all projects:
After award of the contract the successful bidder shall furnish drawings/ documents as per following distribution schedule.

Sl. No.	Type of Document	No of Hard copies	No. of Soft copies
1	Documents submitted for Approval	2 Nos.	1 Nos.
2	Final Distribution(Approved Documents)	12 Nos.	1 Nos.
3	O&M Manuals	12 Nos.	2 Nos.