


# **2x660MW KHURJA STPP (TG)**

## **TECHNICAL SPECIFICATION FOR AIR RELEASE VALVES**

**SPECIFICATION NO.: PE-TS-475-100-M019  
Rev. No.: 00**




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

	<b>TECHNICAL SPECIFICATION AIR RELEASE VALVES FOR 2x660MW KHURJA (TG)</b>	SPECIFICATION NO.: PE-TS-475-100-M019	
		SECTION:	
		REV. NO.: 00	DATE: 14.10.2021
		SHEET 1 OF 1	

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**TECHNICAL SPECIFICATION  
FOR  
AIR RELEASE VALVES  
2x660MW KHURJA (TG)**

**SECTION-I**

**SPECIFIC TECHNICAL REQUIREMENTS**

	<b>SPECIFIC TECHNICAL REQUIREMENTS</b>		SPECIFICATION NO.: PE-TS-475-100-M019
	<b>AIR RELEASE VALVES</b>		SECTION: I
	<b>2x660MW KHURJA (TG)</b>		REV. NO.: 00      DATE: 14.10.2021
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## 1. GENERAL

- 1.1. The valves shall meet the technical requirements and conform to the requirements of Section-I and Data sheet-A of Section-II. However, in the event of contradictions between Section-I & Section-II/Data Sheet-A, Data Sheet-A will prevail.
- 1.2. The technical requirements for valves shall, in general, be as per the attached Data Sheet-A of Section-II.

## 2. SCOPE OF SUPPLY

- 2.1.1. The valves complete with all accessories shall be supplied as per Data Sheet-A of Section-II. For detail refer the same. Each valve (quantity and other details specified in Data Sheet-A) shall have lifting arrangement provision for handling i.e., lifting lugs, eye bolts etc.
- 2.2. Commissioning spares, as per Data Sheet-A.
- 2.3. Set of special tools and tackles, if required, for the maintenance, erection etc. of the equipment supplied.
- 2.4. Finish paints for touch-up painting of equipment after erection at site in sealed containers.
- 2.5. Various drawings, datasheets, operation and maintenance manuals etc. (Nos./ sets of hard copies shall be informed as per project specific requirement).

## 3. CODES AND STANDARDS


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

## 4. DESIGN REQUIREMENTS

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

## 5. MATERIALS

- 5.1. The materials of construction of main parts of Air Release valves shall be as specified in Data Sheet-A.

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5.2. 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.

5.3. Material used in manufacture of valve shall be of tested quality.

## 6. CONSTRUCTION FEATURES

6.1. 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.

6.2. The valve shall also be able to release any trapped air while at normal working conditions from pipes/ducts.

6.3. The body of valve shall be of one-piece construction.

6.4. 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.

## 7. MANUFACTURE OF VALVES

7.1. Valve castings shall be procured from foundries observing strict quality control and approved by reputed customers.


7.2. 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 assembly is started.

## 8. TESTING, INSPECTION & QUALITY ASSURANCE

8.1. 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.

8.2. The Quality Plan enclosed with this specification specify minimum quality control requirement. During contract stage vendor shall furnish this Quality Plan duly signed & stamped for BHEL approval. Quality plans shall be approved by BHEL and customer, as per project requirement. All inspection and testing shall be carried out by BHEL/ BHEL representative and customer (as applicable). In case inspection is by both BHEL and their customer, then the inspection can be carried out jointly or separately, which will be informed later. In case of the foreign bidder, inspection shall be carried out by reputed third party.

8.3. The charges for third party inspection (Lloyds, TUV or equivalent) for foreign bidders shall be included in the base price of the item by the bidder. This third party agency shall be approved by BHEL. Bidder to inform the same in the offer and mention the same in Quality Plan.

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8.4. There may be minor changes in quality plan depending on customer/consultant comments which will have to be accommodated by vendor at no extra cost.

## 9. PAINTING REQUIREMENT:


### 9.1. Cast Iron Valves: –

Valves 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 (St1/St2/St3 as applicable). The surface preparation shall be carried out using any one or combination of SP3/SP5 schemes. The valves shall be first painted with two (2) coats of zinc chromate primer (alkyd base) to IS:104/ Red Oxide Zinc Phosphate primer (Alkyd base) to IS:12744 with each coat of DFT of min. 25 microns. This shall be followed by 1 coat of Intermediate coat of Synthetic Enamel (long oil alkyd) to IS:2932 with DFT of min. 30 microns. Finish paint shall be of two (2) coats of Synthetic Enamel (long oil alkyd) to IS:2932 with each coat of DFT of minimum 35 microns & the total DFT of primer, intermediate & finish paint shall be 150 microns minimum. Colour shade of finished/ final paint shall be shade no. Grey as per RAL 9002.

## 10. PACKING INSTRUCTIONS:

- 10.1. 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.
- 10.2. The valve shall be dispatched in total assembled form.
- 10.3. Body ends shall be suitably sealed to protect them against damage during transit and storage.
- 10.4. 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.
- 10.5. Valve Tag Nos. shall be incorporated in all the dispatch documents.
- 10.6. Proper care shall be taken to avoid damage to the painted surface during transit.
- 10.7. 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.
- 10.8. 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 vendor's work.

There may be minor changes in packing depending on customer/consultant comments which will have to be accommodated by vendor at no extra cost.

	<b>SPECIFIC TECHNICAL REQUIREMENTS</b>  <b>AIR RELEASE VALVES</b>  <b>2x660MW KHURJA (TG)</b>	SPECIFICATION NO.: PE-TS-475-100-M019	
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## 11. SPARES

- 11.1. Mandatory Spares: Refer Data Sheet-A.
- 11.2. Order for the spares may be placed simultaneously or otherwise at the option of purchaser.

## 12. EXCLUSIONS:

- 12.1 The following are excluded from the bidder's scope:
  - 12.1.1. Counter flanges and their nuts and bolts.
  - 12.1.2. Erection & Commissioning of equipment at site.

## 13. DOCUMENTS TO BE SUBMITTED ALONG WITH OFFER

- 13.1. Bidder shall submit the following documents duly filled, signed and stamped along with the bid:
  - 13.1.1. Compliance sheet.
  - 13.1.2. 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.


## 14. DOCUMENTS TO BE SUBMITTED AFTER AWARD OF RATE CONTRACT:

### Category-A:

1. GA Drawing indicating complete cross sectional arrangement of valve, binding dimensions, dismantling clearances, weight and Bill of Material incorporating all material of construction (MOC) of various parts & relevant standard to which MOC confirms to.
  2. Quality plan duly signed and stamped.
- Approval of above documents shall be required for manufacturing clearance and the same shall be considered for delay analysis by BHEL.

### Category-B:


1. Characteristics curves of ARV while filling and emptying.
- Above document is required as information for approval of category-A documents. This shall not be considered for delay analysis.

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




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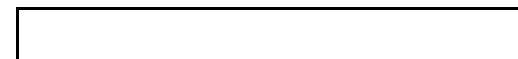
**SECTION-II**



- DATA SHEET – A
- QUALITY PLAN
- COMPLIANCE SHEET

			<div>DATA SHEET- A</div> <div>AIR RELEASE VALVES</div> <div>2x660MW KHURJA (TG)</div>							SPECIFICATION NO.: PE-TS-475-100-M019					
SECTION: II															
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1		2	3	4	5		6	7	8	9	10	11	12	13	14
S. NO.	VALVE TAG NO.	TYPE OF VALVE	SIZE (NB)	OPERATION	DESIGN		SERVICE	RATING, DESIGN & TESTING CODE	BODY, HP & LP COVERS MATERIAL	TRIM MATERIAL	END CONNECTION	SPECIAL FEATURES	VALVES QTY. WITHOUT COMMISSIONING SPARES (NOS.)	COMMISSIONING SPARES	MANDATORY SPARES (COMPLETE SET OF VALVE WITHOUT COMMISSIONING SPARES)
					PRESSURE KG/CM2 (G)	TEMP. (DEG. C)								COVER GASKET (SETS)	
1	CW-12, CW-14, CW-16 & CW-18 (EACH 2 NOS.)	ARV WITHOUT ISOLATING GATE VALVE	200	AUTO	5	50	WATER	PN1.0 AS PER IS:14845	CAST IRON AS PER IS 210 Gr. FG 260	13% Cr SS as per ASTM A182 Gr. F6a	ASME B16.1 CL.125 F/F	-	8	8	3
												TOTAL	8	8	3

**NOTES**


1. LEGENDS: AUTO=AUTOMATIC, ARV=AIR RELEASE VALVE
2. COMMISSIONING SPARES -> 1 SET OF COVER GASKET FOR EACH ARV
3. PRICES OF COMMISSIONING SPARES TO BE QUOTED SEPARATELY BY BIDDER. IT SHALL NOT BE CLUBBED WITH THE UNIT PRICE OF MAIN VALVES.
4. FOR DETAILED MATERIAL OF CONSTRUCTION, REFER SHEET 2 OF 2 OF DATASHEET-A.



 	<b>DATA SHEET-A</b> <b>AIR RELEASE VALVES</b> <b>2x660MW KHURJA (TG)</b>		SPECIFICATION NO.: PE-TS-475-100-M019	
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**SERVICE: WATER SYSTEM**

S. No.	PARTICULAR	MATERIAL
1	BODY, HP& LP COVERS, COWL, JOINT SUPPORTING RING	CAST IRON AS PER IS 210 Gr. FG 260
2	LP SEAT RING	Natural Rubber
3	H.P. ORIFICE, ORIFICE PLUG & FLOAT GUIDE	ASTM A182 Gr F6a with 13% Cr
4	H.P. & L.P. FLOATS	Wooden (ebonite coated)
5	GASKET	Rubber
6	BOLTS & NUTS	ASTM A193 Gr. B7 & ASTM A194 Gr. 2H
7	NAME PLATE FOR PURCHASER'S VALVE TAG NOS.	AISI 316 (2 MM THICK)

	MANUFACTURER/BIDDER/VENDOR NAME & ADDRESS		QUALITY PLAN						SPEC. NO : PE-TS-475-100-M019		DATE: 14.10.2021		
			CUSTOMER: THDC INDIA LIMITED (A Joint Venture of Govt. of India & Govt. of U.P.)						QP NO.: PE-QP-475-100-M019		DATE: 14.10.2021		
			PROJECT: 2x660MW KHURJA (TG)						PO NO.:		DATE:		
			ITEM: AIR RELEASE VALVES			SYSTEM: LP VALVES (WATER SYSTEMS)			SECTION:		SHEET 1 OF 3		
SL NO.	COMPONENT & OPERATIONS	CHARACTERISTICS	CLASS	TYPE OF CHECK	QUANTUM OF CHECK		REFERENCE DOCUMENT	ACCEPTANCE NORMS	FORMAT OF RECORD		AGENCY		REMARKS
1	2	3	4	5	6		7	8	9	*	**		10
					M	C/N					D	M	


## 1.0 MATERIALS

1.1	BODY, HP & LP COVER, COWL, HP ORIFICE & PLUG	1. PHYSICAL & CHEMICAL PROPERTIES	MA	PHYSICAL, CHEMICAL TEST	1/HEAT / HEAT TREATMENT	---	APPD.DRG./REL. STANDARD	APPD. DRG./ REL. STANDARD	MTC	√	P/W	V	V	CORRELATION OF BODY REQD. WITH MTC HEAT NO.
		2. SURFACE DEFECTS	MA	VISUAL	100%	---	MSS SP 55	MSS SP 55	INSP. REPORT	√	P/W	V	V	
		3. SUB SURFACE DEFECTS FOR BODY ONLY	CR	RT	100%	---	ASME B 16.34	ASME B16.34 APPENDIX I	RADIOGRAPHS & RT REPORT	√	P/W	V	V	
		4. DIMENSIONS	MA	MEASUREMENT	100%	---	APPRD. DRG.	APPRD. DRG.	INSP. REPORT	√	P/W	V	V	
1.2	WOODEN FLOATS	1. DIMENSIONS	MA	MEASUREMENT	100%	---	APPRD. DRG.	APPRD. DRG.	INSP. REPORT	√	P/W	V	V	
		2. SURFACE DEFECTS	MA	VISUAL	100%	---	APPRD. DRG.	FREE FROM DEFECTS	INSP. REPORT	√	P/W	V	V	

## 2.0 INPROCESS CONTROL

2.1	MACHINING OF BODY, COVER, ORIFICE	1. DIMENSIONS	MA	MEASUREMENT	100%	---	APPD. DRG.	APPD.DRG	INSP. REPORT	√	P/W	V	V	
		2. SURFACE DEFECTS	MA	VISUAL	100%	---	MSS SP 55	MSS SP 55	INSP. REPORT	√	P/W	V	V	
		3. SUB SURFACE DEFECTS	MA	PT	100%	---	ASME B 16.34	AMSE B 16.34 Appendix III	TEST REPORT	√	P/W	V	V	


BHEL						BIDDER/ SUPPLIER		FOR CUSTOMER REVIEW & APPROVAL			
ENGINEERING			QUALITY			Sign & Date		Doc No:			
Sign & Date		Name	Sign & Date		Name	Seal		Sign & Date		Name	Seal
Prepared by:	ASHISH KUMAR VERMA	Ashish Kumar Verma	Checked by:	Ashish Panigrahi	Ashish Panigrahi			Reviewed by:			
Reviewed by:	Kuldeep Kumar	Kuldeep Kumar	Reviewed by:	RITESH KUMAR JAISWAL	RK Jaiswal			Approved by:			

	MANUFACTURER/BIDDER/VENDOR NAME & ADDRESS		QUALITY PLAN						SPEC. NO : PE-TS-475-100-M019		DATE: 14.10.2021		
			CUSTOMER: THDC INDIA LIMITED (A Joint Venture of Govt. of India & Govt. of U.P.)						QP NO.: PE-QP-475-100-M019		DATE: 14.10.2021		
			PROJECT: 2x660MW KHURJA (TG)						PO NO.:		DATE:		
			ITEM: AIR RELEASE VALVES			SYSTEM: LP VALVES (WATER SYSTEMS)			SECTION:		SHEET 2 OF 3		
SL NO.	COMPONENT & OPERATIONS	CHARACTERISTICS	CLASS	TYPE OF CHECK	QUANTUM OF CHECK	REFERENCE DOCUMENT	ACCEPTANCE NORMS	FORMAT OF RECORD	AGENCY			REMARKS	
1	2	3	4	5	6	7	8	9	*	**			10
					M C/N				D	M	C	N	

2.2	FLOATS WITH EBONITE COATING, LP SEAT RING	1. SURFACE DEFECTS	MA	VISUAL	100%	---	IS: 14845	COMPLETE COVERING OF WOODEN FLOAT WITH EBONITE- FOR FLOATS COMPLETE COVERING OF VULCANITE COATING- FOR LP SEAT RING	INSP. REPORT	√	P/W	V	V	
		2. HARDNESS	MA	MEASUREMENT	100%	---	APPD. DRG.	APPD DRG	TEST CERTIFICATE.	√	P/W	V	V	
		3. DIMENSIONS	MA	MEASUREMENT	100%	---	APPD. DRG.	APPD DRG	INSP. REPORT.	√	P/W	V	V	
3.0	ASSEMBLY	1. DIMENSIONS	MA	MEASUREMENT	100%	---	APPD. DRG.	APPD. DRG.	INSP. REPORT.	√	P/W	V	V	

4.0 TESTING														
4.1	BODY	1. LEAKAGE	CR	HYDROSTATIC TEST	100%	REFER NOTE-2	APPD. DRG. / IS 14845	NO LEAKAGE	TEST CERTIFICATE.	√	P	W	V	
4.2	ORIFICES (FOR ARV)	FUNCTIONAL TEST	CR	AIR/WATER	100%		APPD. DRG/ IS 14845	NO LEAKAGE	TEST CERTIFICATE.	√	P	W	V	
5.0	COMPLETE VALVE	OVERALL DIMENSIONS	MA	MEASUREMENT	SAMPLE		APPD. DRG.	APPD. DRG.	INSP. REPORT	√	P	W	V	
6.0	END CONNECTION	1. DIMENSIONS	CR	MEASUREMENT	100%		APPD. DRG.	APPD. DRG.	INSPN. REPORT	√	P	W	V	
7.0	FINAL INSPECTION	1. CLEANLINESS, WORKMANSHIP, ORIENTATION, MARKING AND TAG	MA	VISUAL	100%		APPD. DRG.	APPD. DRG.	INSPN. REPORT	√	P	W	V	
8.0	PAINTING	1. QUALITY AND THICK- NESS OF PAINT	MA	VISUAL AND MEASUREMENT WITH PAINT THICKNESS GAUGE	100%	---	APPD. DRG.	APPD. DRG	INSPN. REPORT	√	P/W	V	V	

BHEL						BIDDER/ SUPPLIER		FOR CUSTOMER REVIEW & APPROVAL			
ENGINEERING			QUALITY			Sign & Date		Doc No:			
Sign & Date		Name	Sign & Date		Name	Seal		Sign & Date		Name	Seal
Prepared by:	ASHISH KUMAR VERMA	Ashish Kumar Verma	Checked by:	Ashish Panigrahi	Ashish Panigrahi			Reviewed by:			
Reviewed by:	Kuldeep Kumar	Kuldeep Kumar	Reviewed by:	RITESH KUMAR JAISWAL	RK Jaiswal			Approved by:			

	MANUFACTURER/BIDDER/VENDOR NAME & ADDRESS		QUALITY PLAN						SPEC. NO : PE-TS-475-100-M019		DATE: 14.10.2021			
			CUSTOMER: THDC INDIA LIMITED (A Joint Venture of Govt. of India & Govt. of U.P.)						QP NO.: PE-QP-475-100-M019		DATE: 14.10.2021			
			PROJECT: 2x660MW KHURJA (TG)						PO NO.:		DATE:			
			ITEM: AIR RELEASE VALVES				SYSTEM: LP VALVES (WATER SYSTEMS)		SECTION:		SHEET 3 OF 3			
SL NO.	COMPONENT & OPERATIONS	CHARACTERISTICS	CLASS	TYPE OF CHECK	QUANTUM OF CHECK		REFERENCE DOCUMENT	ACCEPTANCE NORMS	FORMAT OF RECORD	AGENCY			REMARKS	
1	2	3	4	5	6		7	8	9	*	**		10	
					M	C/N					D	M		C
9.0	PACKING	APPD. DRG.	MA	VISUAL	100%	100%	APPD. DRG. / PACKING PROCEDURE (IF APPLICABLE)	APPD. DRG. / PACKING PROCEDURE (IF APPLICABLE)	INSPN. REPORT	✓	P/W	W	V	REFER NOTE '3'

**NOTES:**



1. In case of foreign supplier, all test certificates shall be furnished by the supplier, duly witnessed/verified by supplier's TPI.
2. 10% or min. 2 nos. at random by BHEL/Customer & 100% by supplier for each type, size & rating.
3. Following to be noted for packing:
  - a. Material shall be packed suitably in order to avoid damage of paint and valve during transit and also during storage at site in tropical climate conditions.
  - b. Photographs of the packing just before dispatch for information of PEM.
4. The latest revisions/year of issue of all the standard indicated in the QP shall be referred.
5. BHEL reserves the right for conducting repeat test, if required.

**LEGENDS:**

\*RECORDS, IDENTIFIED WITH "TICK"(✓) SHALL BE ESSENTIALLY INCLUDED BY SUPPLIER IN QA DOCUMENTATION,  
 \*\* **M**: SUPPLIER/ MANUFACTURER/ SUB-SUPPLIER, **C**: MAIN SUPPLIER/ BHEL/ THIRD PARTY INSPECTION AGENCY, **N**: CUSTOMER,  
**P**: PERFORM, **W**: WITNESS, **V**: VERIFICATION, AS APPROPRIATE, **D**: DOCUMENTATION  
**MA**: MAJOR, **MI**: MINOR, **CR**: CRITICAL, **MTC**: Mill Test Certificate, **RT**: Radiographic Test, **PT**: Penetrant Test

BHEL						BIDDER/ SUPPLIER		FOR CUSTOMER REVIEW & APPROVAL			
ENGINEERING			QUALITY			Sign & Date		Doc No:			
	Sign & Date	Name		Sign & Date	Name	Seal			Sign & Date	Name	Seal
Prepared by:	ASHISH KUMAR VERMA	Ashish Kumar Verma	Checked by:	Ashish Panigrahi	Ashish Panigrahi			Reviewed by:			
Reviewed by:	Kuldeep Kumar	Kuldeep Kumar	Reviewed by:	RITESH KUMAR JAISWAL	RK Jaiswal			Approved by:			

505358/2021/PS-PEM-MPL

 	<b>COMPLIANCE SHEET</b>		SPECIFICATION NO.: PE-TS-475-100-M019
	<b>AIR RELEASE VALVES</b>		SECTION : II
	<b>2x660MW KHURJA (TG)</b>		REV. NO.: 00      DATE: 14.10.2021
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**A. I hereby comply/not comply (\*) to all the requirements of this technical specification in totality.**

**\* In case the bidder does not comply with 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.**

**Name of Bidder / Authorized Representative: -**

-----

**Designation: -**

-----

**Signature: -**

-----

**Company Seal: -**

-----

**Date: -**

-----

	<b>PRE - QUALIFYING REQUIREMENTS</b>	DOCUMENT No.: PE-TS-475-000-M061
		REVISION NO.:00 DATE: 14.10.2021
		SHEET: 1 of 3

Standard document No.: PE-TS-999-000-M061

**Project: 2x660MW KHURJA (TG)****Package: Air Release Valves****CRITERIA FOR EVALUATION (TECHNICAL / FINANCIAL):****1. Technical Pre-Qualifying Requirements:**

1.1 The bidder (including cases as defined in clause no. 2.1 below) should have designed, in-house manufactured, tested, inspected and supplied Air Release Valves of minimum size of 150NB with material of construction as CI/ CS/ Duplex SS/Ductile iron with 2% Ni as per IS:14845/ AWWA C512 for use in a power plant or for similar application.

1.2 The item(s) mentioned in point 1.1 should have performed successfully in similar installations for atleast one year. To establish meeting this requirement, the bidder shall conform to any one of the following clauses:

- (i) Execution of two purchase orders for different End-users with the item(s) performing successfully for one (1) year from date of commissioning to date of bid submission as defined in Notice Inviting Tender (NIT) by BHEL. Different projects of a customer shall be considered as different End-users.
- (ii) Minimum one (1) repeat contract from two (2) different Purchasers (i.e. 2 Nos. of Purchase orders from each purchaser). A contract shall be considered as repeat, when the second contract is given by the same purchaser after lapse of minimum one (1) year from supply completion of first contract.
- (iii) Execution of one (1) purchase order as per sl. no. (i) above from one End-user and one (1) repeat contract from another Purchaser as per sl. No. (ii) above.
- (iv) Three (3) repeat contracts from one (1) Purchaser. Second and third repeat contract shall be after lapse of minimum one (1) & two (2) years respectively from supply completion of first contract.

1.3 The bidder to furnish the following documents, as applicable, in support of the above:

- a) For point 1.2(i): Performance certificates from End-user (duly signed & dated) specifying that the product is performing successfully for one (1) year from date of commissioning along with correlated purchase order(s).
- b) For point 1.2 (ii) & (iv): Purchase order(s), Material dispatch clearance certificate (MDCC)/ Material receipt certificate (MRC)/Lorry receipt (LR)/ Supply invoice.

1.4 In addition to above, bidder should have the following facilities for size and material of construction of Air Release Valve as per BHEL requirement as mentioned in Data sheet-A of Technical Specification:

- a) Capability of designing and manufacturing of the item(s).

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st=Uttar Pradesh,  
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- b) In-house testing facilities for carrying out tests as per relevant standards & Quality Plan. In case, the in-house testing facilities are not available, then bidder shall furnish undertaking that test(s) will be carried out from govt. approved lab or test house recognized by reputed customers.

Bidder to submit supporting documents (Purchase order (s)/ Certificate indicating capacity and details/ undertaking of manufacturing & testing facilities) for point (a) & (b) above.

- 1.5 To establish business continuity, bidder is required to submit at least two (2) Purchase order for Air Release Valves with minimum size of 100NB in last 3 (three) years prior to the date of bid submission as defined by BHEL-PEM in NIT.

2. Bidder to also comply with general points mentioned below.

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- 2.1 Offers of the JV companies/ Joint Bidders/ bidders having collaboration/ licensing agreement/ MOU/ Indian subsidiaries shall be evaluated as follows:

- If bidder happens to be an Indian subsidiaries of foreign OEM, then the credentials of the foreign OEM can also be considered for meeting PQR.
- If bidder happens to be the Joint Venture Company, then the credentials of any of JV partners can be also considered for meeting PQR.
- If bidder happens to be the having valid collaboration agreement/ MOU/ licensing agreement with some other company, then the credentials of collaborator/ MOU partner/ licensing company can also be considered for meeting PQR.

Note: If bidder(s) qualifies on the basis of credentials of his principal/ JV partner/ Collaborator/ joint bidder etc., then the principal/ JV partner/ Collaborator/ MOU partner/ joint bidder shall be responsible for overall design vetting and warranty/ guarantee of the package. The scope matrix clearly defining their respective roles including design vetting, manufacturing of critical component, E&C etc. and warranty/ guarantee shall be submitted along with the offer.

- 2.2 Bidder to note that the arrangement of bidding (joint bid partners/ collaborator/ MOU partner/ licensing company etc.) once offered to BHEL as a part of bidding documents cannot be changed till the execution of contract(s).

- 2.3 Consideration of offer shall be subject to customer's approval of bidders, if applicable.

- 2.4 Bidder to submit all supporting documents in English. If documents submitted by bidder are in language other than English, a self-attested English translated document should also be submitted.

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
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		REVISION NO.:00 DATE: 14.10.2021
		SHEET: 3 of 3

<p>2.5 Notwithstanding anything stated above, BHEL reserves the right to assess the capabilities and capacity of the bidder/collaborators to perform the contract, should the circumstances warrant such assessment in the overall interest of BHEL.</p> <p>2.6 After satisfactory fulfillment of all the above criteria/ requirement, offer shall be considered for further evaluation as per NIT and all the other terms of the tender.</p> <p>2.7 Bidder to ensure that Third Party/customer issued certificates being submitted as proof of PQR qualification should have verifiable details of document/ certificate issuing authority such as name &amp; designation of issuing authority and its organization contact number and email-id etc. In case the same found not available, purchaser has right to reject such document from evaluation.</p>
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