

2 X 660 MW ENNORE SEZ STPP

VOLUME – IIB

TECHNICAL SPECIFICATION


FOR

SPRING LOADED BYPASS VALVES

SPECIFICATION NO. PE-TS-412-100-M009




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

	TECHNICAL SPECIFICATION SPRING LOADED BYPASS VALVES 2 X 660 MW ENNORE SEZ STPP	SPECIFICATION NO. PE-TS-412-100-M009	
		VOLUME : IIB	
		SECTION:	
		REV. NO.: 00	DATE: 15.04.2015
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SECTION-A

SCOPE OF ENQUIRY

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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 Spring loaded bypass valve complete with all accessories as per the requirements mentioned in different sections of the specification for 2 X 660 MW ENNORE SEZ STPP.


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 spring loaded bypass valve shall not relieve the bidder of the responsibility of providing such facilities to complete the supply of spring loaded bypass 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.

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SECTION-B

PROJECT INFORMATION

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PROJECT INFORMATION

PROJECT NAME: 2 X 660MW ENNORE SEZ STPP

OWNER : TANGEDCO

Major Road distances:

The proposed site for main power plant is located near Ennore port (approx. 5 kms). The nearest Railway station is at Athipattu Pudunagar (approx 5 kms).

All weather roads from Pattamandri on the Thiruvottiyur-Ponneri district highway is the nearest road access.

The nearest airport is at Chennai at a distance of 60 km.

LOCATION

The site is located near Vayalur Village, Ennore

Latitude : 13017' N to 130

Longitude : 8018' N

018' E to 800


Distance from Chennai City : 35 km 19' E

Nearest Airport is at Chennai at a

Distance of : 60 km


Nearest Seaport is : Ennore

Nearest Railway Station is : Athipattu Pudunagar (approx 5 kms)

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SECTION-C

SPECIFIC TECHNICAL REQUIREMENTS

	SPECIFIC TECHNICAL REQUIREMENTS SPRING LOADED BYPASS VALVES 2 X 660 MW ENNORE SEZ STPP	SPECIFICATION NO. PE-TS-412-100-M009	
		SECTION C	
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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:

Erection & Commissioning at site are excluded from the bidder's scope.

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.

5 PAINTING REQUIREMENT:

All surfaces to be painted shall be thoroughly cleaned of oil, grease and other foreign matter, surfaces shall be free of moisture and contamination from chemicals and solvents.

The following surfaces scheme are to be carried out for surface preparation:

- SP1 - Solvent cleaning,
- SP2 - application of rust converter (Ruskil or equivalent grade),
- SP3 - power tool cleaning

	SPECIFIC TECHNICAL REQUIREMENTS SPRING LOADED BYPASS VALVES	SPECIFICATION NO. PE-TS-412-100-M009	
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Surface preparation shall be followed by two coats of Heat Resistant Aluminium paint to IS 13183 Gr. I or equivalent, paint shade Aluminium and total DFT of paint will be equal to 120 microns minimum.

6 PACKING INSTRUCTIONS:

- a) 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.
- b) The valve has to be dispatched in total assembled form.
- c) Body ends shall be suitably sealed to protect them against damage during transit and storage.
- d) Valves with butt-welding ends shall be protected by means of polythene caps/rubber end protectors to prevent damage to ends & also to avoid foreign material entering the valve during shipment & storage.
- e) Valve Tag Nos. shall be incorporated in all the dispatch documents.
- f) Proper care shall be taken to avoid damage to the painted surface during transit.
- g) 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.
- h) 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.
- i) Spare parts shall be packed separately and clearly marked. Spares shall also be suitably packed for transit and long storage period at site.

7 SPARES


- a) **Mandatory Spares:** Not applicable for this project.
- 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.~~

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:


- a) Compliance sheet
- b) Schedule of Deviations if any.
- c) Schedules of Price & Unit Price for each project.
- d) 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 SPRING LOADED BYPASS VALVES	SPECIFICATION NO. PE-TS-412-100-M009	
		VOLUME : IIB	
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SECTION-D

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

	STANDARD TECHNICAL SPECIFICATION FOR SPRING LOADED BYPASS VALVES	SPECIFICATION NO. PE-SS-999-100-M009	
		VOLUME . II B	
		SECTION D	
		REV. NO. 02	DATE. 15.05.2012
		SHEET 1	OF 2

1.0 GENERAL

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

2.0 CODES AND STANDARDS:

- 2.1 The valves covered under this specification shall be of manufacturer's own proven design and shall be suitable for the required technical parameters mentioned in Data sheet A. However BS:759 and BS EN ISO 4126 shall be referred to wherever applicable.
- 2.2 In case of any conflict between the above Codes/Standards and this specification, the latter shall prevail and in case any further conflict in this matter, the interpretation of the specification by the Engineer shall be final & binding.

3.0 DESIGN REQUIREMENTS

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.

4.0 MATERIALS


- 4.1 The materials of construction of main parts of valves shall be specified in Data sheet-A.
- 4.2 The materials of construction of the remaining parts shall be as per relevant code/ standard governing the valves and to suit the service conditions. These materials shall be subject to approval of the purchaser.
- 4.3 Materials used in manufacture of valves shall be of tested quality.

5.0 CONSTRUCTION FEATURES:

- 5.1 All valves shall be globe type construction.
- 5.2 The seat and disc shall be easily removable and shall be suitable for easy relapping.
- 5.3 Valves shall have pressure seal bonnet / bolted bonnet construction and the adjusting screw shall be covered under a cap.
- 5.4 An arrow indicating the direction of flow shall be embossed on the body of the valves.
- 5.5 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.
- 5.6 Suitable lifting lugs and eye bolts shall be provided for valves of weight 500 Kg and above.

6.0 LUBRICATION:

- 6.1 Lubrication, if any, required for smooth and easy operation of valves shall be mentioned.
- 6.2 Choice of lubrication shall be based on ambient temperature condition of 50°C.

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6.3 Type of lubricant to be used and its annual consumption (based on 100 operations per year) shall be indicated by the tenderer.

7.0 **INSPECTION AND TESTS:**

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 Valves coming under the purview of IBR shall be inspected by Independent Inspecting authority approved by Indian Boiler Board and the test Certificate in IBR Form III-C duly countersigned shall be submitted. The Independent Inspecting Authority proposed by the vendor shall be informed in the offer.

7.3 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.

7.4 Body of all valves shall be hydraulically tested at 1.5 times the design pressure for leak tightness.

8.0 **PAINTING**

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.


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.

9.0 **CLEANING AND PROTECTION FOR DESPATCH**

9.1 Suitable rust preventive shall be applied on machined exposed surfaces.

9.2 Valve ends shall be protected from external damage and sealed against the ingress of dirt by means of polythene caps/rubber end protectors.

9.3 Valve Tag Nos. shall also be incorporated in all the despatch documents.


	DATA SHEET-A SPRING LOADED BYPASS VALVE 2 X 660 MW ENNORE SEZ STPP	SPECIFICATION NO. PE-TS-412-100-M009	
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**REQUIREMENT OF SPRING LOADED BYPASS VALVE
BILL OF MATERIAL FOR MAIN VALVE & SPARES**

DESCRIPTION	QUANTITY (NOS)			
	MAIN VALVE(NOS.)	COMMISSIONING SPARES		MANDATORY SPARES
		BONNET GASKET (NOS)	CAP GASKET (NOS)	
FDV-42	2	2	2	NIL

Note: Bidder to offer minimum size of SLBV meeting the technical parameters in totality and note that the reducers/ matching pieces for connecting this valve with the connecting pipe size shall be taken care by BHEL itself, if required.

Datasheet - A, sheet 2 of 2

	DOCUMENT TITLE	DOCUMENT NUMBER
	DATA SHEET FOR SPRING LOADED BYPASS VALVE ACROSS HP HEATERS	PE-DC-412-100-N307
		REVISION 0 DATE 04/04/2015
TANGEDCO – 2 X 660 MW ENNORE SEZ STPP	SHEET 1 OF 1	

1.0 GENERAL DESCRIPTION

3 nos. of HP Heaters (HPH-6, 7 & 8) on feed water side are installed in the regenerative feed cycle. Each heater is provided with motor operated gate valve at its inlet, outlet & bypass. A 100% capacity feed water bypass line is provided across the complete HP Heater bank with spring loaded bypass valve (SLBV) FDV-42 for facilitating isolation of one or more HP heaters due to any operational problem. The SLBV is sized to pass BMCR feed water flow and works on differential pressure across the valve.

2.0 TECHNICAL REQUIREMENTS

1.	Tag No. & Quantity	:	FDV-42; 1 no./unit (i.e. 2 nos. for two units)
2.	Type	:	Globe type spring loaded bypass valve.
3.	Size of valve	:	To be decided by bidder based on sizing data.
4.	a) End connection b) Connecting pipe size c) Connecting pipe material	:	Butt welded. OD 457 mm x 62 mm Thk. SA 106 GrC
5.	No. of Heater banks.	:	1 no.
6.	Pressure drop across each heater bank.	:	4.5 kg/cm ² at 2120 T/Hr
7.	Operating conditions.	:	Valve shall pass 2120 T/Hr of feed water at 192.5°C & 310 kg/cm ² (a). Set pressure 5.0 kg/cm ² . Fully opens at 10% over pressure.
8.	Set pressure range	:	Each valve shall be adjustable for opening when differential pressure settings are 4.5 to 5.5 kg/cm ² .
9.	Design pressure and temperature	:	335 kg/cm ² (g) and 310°C
10.	Valve body Material	:	ASTM A216 WCC
11.	Regulatory requirement	:	IBR certificate in form IIIC

3.0 Bidder to offer minimum size of SLBV meeting the technical parameters in totality and note that the reducers/ matching pieces for connecting this valve with the connecting pipe size shall be taken care by BHEL itself, if required.

QUALITY PLAN		CUSTOMER: TANGEDCO		PROJECT: 2 X 660 MW ENNORE SEZ STPP		SPEC. NO.: PE-SS-999-100-M009	
SHEET 1 OF 3		BIDDER/VENDOR: LATER		QP NUMBER: PE-QP-412-100-M012		SPEC. TITLE: TECH. SPEC. SLBV	
CHARACTERISTICS CHECKED		SYSTEM		ITEM: SPRING LOADED BYPASS VALVE		SECTION-C VOLUME- IIB	
S.N.O.	COMPONENT/ OPERATION	CATE- GORY	TYPE/METHOD OF CHECK	EXTENT OF CHECK	REFERENCE DOCUMENT	ACCEPTANCE NORMS	AGENCY
							P W V
							RECORD
							REMARKS

S.N.O.	COMPONENT/ OPERATION	CATE- GORY	TYPE/METHOD OF CHECK	EXTENT OF CHECK	APPROVED DRG./TECH. SPEC.	APPROVED DRG/ TECH SPEC	TEST CERT	3/2	2	1	REMARKS
1.0	MATERIALS										
1.1	BODY, BONNET, CAP, SPINDLE, DISC, BODY SEAT, SPRING PLATES, FASTENERS	MA	PHYSICAL, CHEMICAL TESTS	ONE/HEAT / HEAT BATCH	APPROVED DRG./TECH. SPEC.	APPROVED DRG/ TECH SPEC	-DO-	3/2	2	1	-CORRELATION REQUIRED FOR BODY, BONNET, CAP, DISC, SPINDLE
	1. DIMENSION	MA	MEASUREMENT	100%	-DO-	-DO-	-DO-	3/2	2	1	
	3. HEAT TREATMENT	MA	HT CHART REVIEW VISUAL	100%	-DO-	-DO-	HT CHART	3/2	2	1	
	4. SURFACE DEFECTS	MA	VISUAL	100%	MSS-SP-55	MSS-SP-55	INSPN. REPORT	3/2	2	1	
1.2	BODY, BONNET, CAP, BODY SEAT	CR	PT/MT	100%	ASTME 165/ASTME 709	ASTME 165/ASTME 709	TEST CERT.	3/2	2	1	
	2. SUB-SURFACE DEFECTS	CR	RT/UT	100%	ANSI B16.34/TECH SPEC	ANSI B16.34/TECH SPEC	INSPN REPORT	3/2	2,1	2,1	-FILM REVIEW FOR RT & WITNESSING FOR UT
1.3	SPRING & VALVE GUIDE	MA	PHYSICAL, CHEMICAL TESTS	100%	APPROVED DRG./TECH. SPEC.	APPROVED DRG/TECH SPEC	TEST CERT	3/2	2	1	-CERTIFICATE OF COMPLIANCE TO BE FURNISHED
1.4	BONNET BUSH & ADJUSTING SCREW	MA	CHEM. TESTS	100%	APPROVED DRG./TECH. SPEC.	APPROVED DRG/TECH SPEC	TEST CERT	3/2	2	1	--DO--
1.5	SPRING	CR	ENDURANCE TEST	1/BATCH	RELEVANT SPEC./BS:759	RELEVANT SPEC.	-DO-	3/2	2	1	
	2. SPRING RATE	CR	LOAD TEST	1/BATCH	APPROVED DRG./MFR. STANDARD	APPROVED DRG./MFR. STANDARD	-DO-	3/2	2	1	
	3. SCRAGGING	CR	FULL DEFLECTION	100%	RELEVANT SPEC.	NO PERMANENT SET IN 10 CYCLES	-DO-	3/2	2	1	
	4. SURFACE DEFECTS	CR	PT/MT	100%	ASTME 165/ASTME-709	NO DEFECTS	-DO-	3/2	2	1	
2.0	IN PROCESS CONTROL										
2.1	MACHINING OF BODY, BONNET,	MA	MEASUREMENT	100%	MFG DRG	MFG DRG.	INSPN. REPORT	3/2	2	1	

BHEL		BIDDER/VENDOR	
NAME		SIGNATURE	
DATE		COMPANY SEAL	
SAVARABY DUGGAL		BHEL	
15/04/15			



QUALITY PLAN

CUSTOMER: TANGEDCO
 BIDDERS/VENDOR: LATER

S.NO.	COMPONENT/OPERATION	SHEET 2 OF 3	CHARACTERISTICS CHECKED	SYSTEM	FEED WATER	EXTENT OF CHECK	TYPE/METHOD OF CHECK	CATE-GORY	ACCEPTANCE NORMS	REFERENCE DOCUMENT	FORMAT OF RECORD	AGENCY	REMARKS

2.2	CAP, DISC, BODY SEAT, SPINDLE, SPRING PLATE ETC.	2 SURFACE FINISH 3. SURFACE DEFECTS (PRESSURE PARTS)	WELD DEPOSIT	MA	VISUAL	100%	-DO-	-DO-	ASTME 165/ ASTME 709	ASTME 165/ ASTME 709	-DO-	3/2	2	1
2.3	SS DEPOSIT ON DISC/BODY SEAT DISC SEAT, BODY SEAT & VALVE GUIDE	1. HARDNESS 2. CONTACT PATTERN		MA MA	HARDNESS TEST BLUE MATCHING	100% 100%			INTERNAL STANDARD	APPROVED DRAWING/ TECHNICAL SPEC	TEST CERT.	3/2	2	1
2.4	SPINDLE	3. SURFACE DEFECTS		CR	PT/MT	100%			ASTME 165.	NO DEFECTS	-DO-	3/2	2	1
3.0	ASSEMBLY TESTING	1. SURFACE DEFECTS		CR	PENETRANT TEST	100%			ASTME 165	NO DEFECT	TEST CERT.	3/2	2	1
		2. HARDNESS		MA	MEASUREMENT	100%			APPD DRG.	APPD DRG.	INSPN REPORT	3/2	2	1
		1. DIMENSIONS		MA	MEASUREMENT	100%			APPROVED DRAWING	APPROVED DRAWING	INSPN REPORT	3/2	2,1	-
		2. BODY LEAK TIGHTNESS		CR	HYDRAULIC	100%			APPROVED DRAWING/ TECHNICAL SPEC.	APPROVED DRAWING/ TECHNICAL SPEC.	TEST CERT. & IBR III-C TEST CERT.	3/2	2,1	-
4.0	END CONNECTION (FOR B.W. ENDS)	3. SEAT LEAK TIGHTNESS		CR	HYDRAULIC	100%			-DO-	NO LEAKAGE	-DO-	3/2	2,1	-
		4. PRESSURE SETTING		CR	HYDRAULIC	100%			SMOOTH OPERATION, VALVE TO OPEN AT SET PRESSURE	SMOOTH OPERATION, VALVE TO OPEN AT SET PRESSURE	-DO-	3/2	2,1	-
4.0		1. DIMENSIONS		MA	MEASUREMENT	100%			APPROVED DRAWING/ TECHNICAL SPEC.	APPROVED DRAWING/ TECHNICAL SPEC.	INSPN REPORT	3/2	2	1
		2. SURFACE DEFECTS		CR	PENETRANT TEST	100%			ASTME 165	NO DEFECTS	TEST CERT.	3/2	2	1

BHEL	BIDDER/VENDOR
SAURABH DUGGAL	
SIGNATURE	
DATE	
15/04/15	
BIDDER'S/VENDOR'S COMPANY SEAL	


QUALITY PLAN		CUSTOMER: TANGEDCO		PROJECT: 2 X 660 MW ENNORE SEZ STPP		SPEC. NO: PE-SS-999-100-M009	
SHEET 3 OF 3		BIDDER/VENDOR: LATER		QP NUMBER: PE-QP-412-100-M012		SPEC. TITLE: TECH. SPEC. SLBV	
CHARACTERISTICS CHECKED		SYSTEM		ITEM: SPRING LOADED BYPASS VALVE		SECTION-C	
S.N.O.		CATEGORY		REFERENCE DOCUMENT		AGENCY	
COMPONENT/OPERATION		TYPE/METHOD OF CHECK		ACCEPTANCE NORMS		P W V	
		EXTENT OF CHECK		FORMAT OF RECORD		REMARKS	

S.N.O.	FINAL INSPECTION	CLEANLINESS AND COMPLETENESS	MA	VISUAL	100%	APPROVED DRAWING/ TECHNICAL SPEC.	APPROVED DRAWING/ TECHNICAL SPEC.	INSPN. REPORT	3/2	2	1	REMARKS
5.0			MA	VISUAL	100%							
6.0	PAINING	QUALITY AND THICKNESS OF PAINT	MA	VISUAL & MEASUREMENT	100%	-DO-	-DO-	-DO-	3/2	2	1	
7.0	PACKING	AS PER TECHNICAL SPECIFICATION	MA	VISUAL	100%	TECHNICAL SPEC.	COMPLIANCE REPORT & PHOTOGRAP.-HS	-DO-	3/2	2	1	PO No(s). WRITTEN WITH PAINT SHALL APPEAR IN THE PHOTOGRAPHS OF WOODEN CASES

ABBREVIATIONS
CR = CRITICAL CHARACTERISTIC
MA = MAJOR CHARACTERISTIC
1 = BHEL/CUSTOMER/THIRD PARTY INSPECTION AGENCY
2 = VENDOR
3 = SUB VENDOR

W = WITNESSED BY **P = PERFORMED BY** **V = VERIFIED BY**

BHEL		PARTICULARS		BIDDER/VENDOR	
SAURABH DUGGAL		NAME			
Saurabh,		SIGNATURE			
15/04/15		DATE			
				BIDDER'S/VENDOR'S COMPANY SEAL	

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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 contact.

- 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 Relevant catalogue/leaflet of the actuators

1.3 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	5 Nos.	1 Nos.
2	Final Distribution(Approved Documents)	12 Nos.	2 Nos.
3	O&M Manuals	12 Nos.	2 Nos.

2 X 660 MW ENNORE SEZ STPP

VOLUME - III

TECHNICAL SCHEDULES


FOR

SPRING LOADED BYPASS VALVES

SPECIFICATION NO. PE-TS-412-100-M009




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

	SPRING LOADED BYPASS VALVE 2 X 660 MW ENNORE SEZ STPP	SPECIFICATION NO. PE-TS-412-100-M009	
		VOLUME : III	
		SECTION:	
		REV. NO.: 00	DATE: 15.04.2015
		SHEET 1	OF 1

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The bidder shall sign and return a copy of this compliance sheet along with his offer, indicating his compliance to the points specified herein:

A) Technical Details: Bidder to tick whichever is applicable.

1.	Technical requirements as per Data sheet-A & Standard Technical Specification of Vol IIB Section-D	Accepted	Not Accepted
2.	Quality Plan	Accepted	Not Accepted
3.	Specific Technical requirements of Vol IIB Section-C	Accepted	Not Accepted
4.	Documentation requirement as per Data sheet-C of Vol IIB Section-D	Accepted	Not Accepted

B) Deviations to the technical specification are not acceptable. However, if there are any deviations due to unavoidable reasons then the same to be clearly specified in the schedule of deviation. In case of no deviations, schedule of deviations to be filled as NIL by bidder.

C) The offered materials should be either equivalent or superior to those specified. Also for components where material is not specified, the material used shall be suitable for intended duty.


D) QP/ test procedures shall be submitted in the event of order based on the guidelines given in the specification & QP enclosed therein. QP will be subject to BHEL/Customer approval in the event of order & customer hold points for inspection/ testing shall be marked in the QP at the contract stage. All Inspection/ testing shall be as per approved QP. The charges for 3rd party inspection (Lloyds, TUV or equivalent) for foreign bidders shall be included in the base price of the equipment by the bidder. This 3rd party inspection agency shall be approved by BHEL and will be decided in contract stage.

E) All drawings/data – sheets etc. to be submitted during contract shall be subject to BHEL/Customer review/ approval.

F) GA drawings, as submitted with offer at tender stage are for reference purpose only and shall be subject to approval during contract stage.

G) The commissioning spares (if any) are supplied on 'As Required Basis' & prices for same shall be quoted in the price bid format. If the bidder has not quoted for commissioning spares at tender stage and if the same are actually required during commissioning, then the same shall be supplied by bidder without any cost to BHEL.

PARTICULARS OF BIDDER / AUTHORISED REPRESENTATIVE				
NAME	DESIGNATION	SIGNATURE	DATE	COMPANY SEAL

	COMPLIANCE SHEET SPRING LOADED BYPASS VALVES 2 X 660 MW ENNORE SEZ STPP	SPECIFICATION NO.:PE-TS-412-100-M009	
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- H) All drawings/documents in soft as well as hard copy shall be submitted within 2 weeks from placement of Purchase orders in the event of order. A technical representative of bidder shall come for meeting with BHEL along with revised documents within one week of receipt of BHEL comments to resolve all issues and incorporate all comments in the soft copy for further submission to customer if required. Further, on receipt of customer comments on the documents a technical representative from bidder shall come for meeting to resolve all issues and incorporate all comments in the soft copy at BHEL and resubmit the drawings /documents for CAT I approval and shall visit customer/customer's consultant if required for across the table approval of documents.
- I) Any special tools & tackles, if required, shall be in bidder's scope.
- J) Prices for recommended spares (if any) for three year operation shall be furnished separately and not to be included in the base price.
- K) The offered model design should be of bidder's proven model and they should have designed, manufactured, supplied and tested the equipment of similar type and rating in at least Two (2) projects and be in satisfactory operation for last two (2) years.

PARTICULARS OF BIDDER / AUTHORISED REPRESENTATIVE				
NAME	DESIGNATION	SIGNATURE	DATE	
				COMPANY SEAL



TITLE
*** SCHEDULE OF DEVIATIONS**
 () From Technical Specifications (Volume -II B)

SPECIFICATION NO.
 PE-TS-412-100-M009


VOL III

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(This area is intentionally left blank for listing deviations.)

We the undersigned hereby certify that the above mentioned are the only deviations.

PARTICULARS OF BIDDER / AUTHORISED REPRESENTATIVE				COMPANY SEAL
NAME	DESIGNATION	SIGNATURE	DATE	

	TITLE *SCHEDULE OF DECLARATIONS	SPECIFICATION NO. PE-TS-412-100-M009
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* Bidder shall include this schedule both in technical and Price offers

DECLARATION

Icertify that all the technical data and information pertaining to this specification are correct and are true representation of the equipment/system covered by our format proposal number Dated and there is no deviation to the specification other than those listed in "Schedule of deviations" of this Vol III.

I hereby certify that I am duly authorized representative of the Bidder's company whose name appears above my signature.

Bidder's Company Name

.....

Authorised representative's
Signature

.....

Name

.....

Bidder's Name

The bidder hereby agrees to fully comply with the requirements and intent of this specification for the price indicated

PARTICULARS OF BIDDER / AUTHORISED REPRESENTATIVE				
NAME	DESIGNATION	SIGNATURE	DATE	
				COMPANY SEAL