 432-003	ENQUIRY VALVES	Bharat Heavy Electricals Limited (A Government of India undertaking) HIGH PRESSURE BOILER PLANT PURCHASE DEPARTMENT/VALVES TIRUCHIRAPPALLI-620 014.	Phone:04312577913 FAX :0431-2520383 Email: fayasmalik@bheltry.co.in	
		ENQUIRY NO. ENSFV00150	DATE 09.06.2016	DUE DATE FOR QUOTATION 30.06.2016
Please quote Enquiry No., and due date in correspondences This is only a request for quotation and not an order.				
Supply of Pneumatic operated Globe & Gate Valve <u>Date , Time & Venue of tender opening :</u> 30.06.2016 at 14.30 Hrs.at The Tender Opening Cell / Valves Room No. -26, Building -24 Bharat Heavy Electricals Limited Tiruchirappalli - 620014, Tamilnadu, India Email: tender_cell@bheltry.co.in	Scope of supply Supply of Pneumatic operated Globe & Gate Valve as per the purchase specification enclosed. -List of Annexures Annexure 1A- Scope of Supply Annexure 1B- Valv_conv_specification Annexure 1C- Val_Pneu_Actr_Spec_028 Annexure 1D- QP format Annexure 2A- General terms & Conditions Annexure 2B- Special tender terms Annexure 2C IBR approved Inspection agencies Annexure 2D-Tender checklist Annexure 3A- Schedule of Deviation Format Annexure 3B- Performance Bank Guarantee			
<p>The rate of Excise Duty and Sales Tax, Prevalent on the date of quotation, should be clearly indicated in the quotation itself.</p> <p>Please, submit your lowest quotation in duplicate subject to our terms and conditions , for the above materials, so as to reach us on or before the due date by 14.00 Hrs. (IST)</p> <p>The IEM for the tender is Mrs. Pravin Tripathi, IA and AS (Retd.)</p> <p>Quotation will be opened at 14.30 Hrs. (IST) on the due date in the presence of tenderers who may like to be present.</p> <p>Late tenders will not be considered.</p>			<p style="text-align: center;">Yours faithfully,</p> <p style="text-align: center;">For Bharat Heavy Electricals Ltd</p> <p style="text-align: center;">Fayas Malik K Engineer/Purchase/Valves</p>	

SCOPE OF SUPPLY

SL NO.	Material code	Material description	Type	OPERATION	QTY	SPECIFICATION	Pressure Kg/Sq.Cm	Temp. Deg.C	Spares	PIPE
1	964677070000	1-C1500-SV-SW-PNU-A105	GLOBE STOP	PNEUMATIC	96	VALSPEC:IVP:GEN:001 REV.NO.04 & VAL/PNEUMATIC_ACTR_ASSLY/SPEC/028 Rev.:00	143	200	One set of Packings & gasket	OD33.4
2	964677080000	1-1/2-C800-SV-SW-PNU-A105-SST	GLOBE STOP	PNEUMATIC	3	VALSPEC:IVP:GEN:001 REV.NO.04 & VAL/PNEUMATIC_ACTR_ASSLY/SPEC/028 Rev.:01	42	100	One set of Packings & gasket	OD48.3X5.08
3	964677090000	2.5-C1500-GLV-BW-PNU-WCC	GLOBE REGULATING	PNEUMATIC	24	VALSPEC:IVP:GEN:001 REV.NO.04 & VAL/PNEUMATIC_ACTR_ASSLY/SPEC/028 Rev.:02	143	200	One set of Packings & gasket	OD73X7.01
4	964677100000	2.5-C2500SPL-GLV-BW-PNU-WCC	GLOBE REGULATING	PNEUMATIC	72	VALSPEC:IVP:GEN:001 REV.NO.04 & VAL/PNEUMATIC_ACTR_ASSLY/SPEC/028 Rev.:03	394	300	One set of Packings & gasket	ID50x12.15
5	964677110000	3-C2500SPL-GLV-BW-PNU-WCC	GLOBE REGULATING	PNEUMATIC	24	VALSPEC:IVP:GEN:001 REV.NO.04 & VAL/PNEUMATIC_ACTR_ASSLY/SPEC/028 Rev.:04	394	300	One set of Packings & gasket	ID65X15.12
6	964677120000	8-C1500-GV-BW-PNU-WCC	GATE	PNEUMATIC	3	VALSPEC:IVP:GEN:001 REV.NO.04 & VAL/PNEUMATIC_ACTR_ASSLY/SPEC/028 Rev.:05	143	200	One set of Packings & gasket	OD219.1X18.26
7	964677130000	10-C2500SPL-GV-BW-PNU-WCC	GATE	PNEUMATIC	12	VALSPEC:IVP:GEN:001 REV.NO.04 & VAL/PNEUMATIC_ACTR_ASSLY/SPEC/028 Rev.:06	394	300	One set of Packings & gasket	ID175X36.92



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1.0 GENERAL

This specification covers design, material, construction features, manufacture, inspection, testing, painting and packing requirements of Gate, Globe and Non Return Valves at vendor's or / and his sub vendor's works and delivery to project site.

The offer shall be submitted along with all the documents required in this specification. Offer with out all supporting documents requested in this specification will not be considered.

2.0 CODES AND STANDARDS

2.1 The design, material, construction, 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 governed by the following standards. However the valves conforming to other International Standards may be acceptable provided they are equivalent or superior to those listed below:

2.2.1	BS EN ISO 15761 Rev.4	For Forged Gate, Globe and Non-Return valves of sizes 50 mm and smaller.
2.2.2	API 600/ BS 1414 Rev.3	Gate valves of sizes 50 mm to 1050 mm. Rev.3
2.2.3	BS: 1873 Rev.3	Globe valves of sizes 50 mm to 400 mm. Rev.3
2.2.4	BS: 1868 Rev.3	Non-return valves of sizes 50 mm to 800 mm. Rev.3

2.3 In case of any discrepancy between the specification / data sheet and standards, the better one or most stringent is to be followed.

3.0 DESIGN REQUIREMENTS

3.1 These valves shall be used for services like steam, condensate water, feed water, D.M. Water, oil and gas unless otherwise specified in specific requirements.

3.2 The valves performing similar duties shall be interchangeable with one another unless otherwise approved.

3.3 Valves shall be designed according to guidelines mentioned in the applicable standards.

3.4 The valves coming under the purview of IBR shall satisfy all the requirements of IBR.

3.5 Materials

Material requirement is indicated in Valve Data Sheets enclosed with the enquiry. Commercial grade steels shall not be used. Materials shall be as per ASTM or IS or other National / International Standards. For materials other than ASTM, corresponding equivalent ASTM standard and nominal composition shall be indicated. Rev.3

3.6 Unless otherwise specified in specific requirements, all valves of sizes up to and including 50 mm Nb shall have a forged steel body & sizes 50 mm Nb & above shall have cast steel body.

4.0 CONSTRUCTION FEATURES

4.1 End Connections:

4.1.1 Socket details of valves with socket welding ends shall be as per ASME B16.11 and shall suit pipe size as indicated in specific requirements.

4.1.2 The edge profile for valves with butt welding ends shall be as per BHEL Plant Std. / ASME B16.25 Fig. 2a / 3a and shall suit the given matching pipe. Rev.4



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- 4.1.3 All valves with Flanged ends shall have raised face flanges and drilling details as per ASME B16.5. For rubber lined valves, face of flange shall be flat face. If specified, the flanged valves are to be supplied with matching slip on type flanges, bolts, nuts and spiral wound gaskets.
- 4.1.4 The over all length of valve shall be strictly as per ASME B 16.10 for flanged and butt welded valves. **Please note that for class 150 gate valves, the over all length is different for flanged end and butt welding end as per ASME B 16.10. (This implies flanged body casting cannot be used for butt weld end body casting). Rev.3**
- 4.2 Gate and Globe valves shall be of outside screw and yoke type with rising spindle and shall be capable of being closed against the rated pressure.
- 4.3 Gland & gland flange shall be in two pieces for uniform tightening of gland packing.
- 4.4 Gate valves shall be provided if necessary with bonnet pressure relieving pipe with check valve (to be connected to upstream / downstream) to avoid pressure built up when the valve is closed.
- 4.5 The yoke nut design for gate valves shall be provided with a ball bearing for 150 class valve for sizes 700mm & above, 300 class valves for sizes 600 mm & above & for 600 & above class valves for sizes 150mm & above (for globe valves also).
- 4.6 All Globe and check valves shall have an arrow indicating the direction of flow cast or embossed on the valve body. The direction of flow for globe valves shall be from under to over the disc.
- 4.7 Gate and globe valves shall have back seating arrangement for replacement of packing while working under full working pressure.
- 4.8 All globe valves shall have conical or spherical or flat seating.
- 4.9 For Globe valves, the disc shall be free to revolve on the spindle.
- 4.10 Globe valves for regulating duties shall be provided with profiled type disc / parabolic type disc and shall be capable of regulating the flow from zero flow to fully open. All regulating valves shall be designed to prevent erosion of the valve discs and seats when the valves are operated partially opened.
- 4.11 Differential hardness of 50 BHN shall be provided between seat and disc facings in case of 13% Cr. SS. Wherever specified, Stellite Gr. 6 facing shall be done (thickness shall be minimum 1.6 mm). Hardness of stellite surfaces shall be minimum 350 BHN. Differential hardness is not applicable for stellite seats. **Rev.4**
- 4.12 For severe service conditions, cushioned check valves are preferred to obviate valve clatter. In case of swing check valves, the body seat shall be inclined at such an angle from the vertical to facilitate closing and prevent valve clatter.
- 4.13 All the gate / globe valves intended for manual operation shall be equipped with gear box & thrust bearing, if considered necessary to enable easy operation i.e. the effort required to open / close the valve against the maximum differential pressure. However valves sizes 350 NB & above with Cl. 150, sizes 300 NB & above with Cl. 300, valve sizes 200 NB & above with Cl. 600 shall be provided with gear arrangement. The gearbox shall be totally enclosed, bevel gear type and capable of delivering required torque & thrust. All gear operated valves shall be necessarily provided with a position indicator to show the valve open / close position. **Rev.3**
- 4.14 All gate valves of 600 lbs and higher-pressure rating shall have flexible wedge.
- 4.15 All valves of pressure rating up to 600 lbs shall have bolted bonnet construction and 900 lbs and above shall have bonnet construction of pressure seal type. For pressure seal bonnet type valves, stainless steel inlay in the gasket area and silver-plated gaskets or other acceptable proven features shall be provided. **Rev.2**

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- 4.16 Eye bolts shall be provided to facilitate handling heavy valves or part of valves, where the weight is greater than 500 Kg.
- 4.17 All the gate and globe valves shall be required with integral bypass valve, if considered necessary, for ease of operation of main valves. The valves for which the integral bypass is envisaged, the size of the same shall conform to MSS-SP-45 as a minimum standard. Pipe of bypass shall be at least schedule 80, seamless and of a material of the same composition as that of the main valve.
- 4.18 All the gate and globe valves shall be closed by rotating the hand wheel in the clockwise direction when looking at the face of the hand wheel. Where valves are not of the rising pattern, the hand wheel shall also be rotated in clockwise direction to close the valve when viewed from the outer end of the spindle. In case where the hand wheel is not directly attached to the valve spindle, suitable gearing shall be introduced to reconcile the above condition. The face of each hand wheel shall be clearly marked "Open" and "Shut" with arrows indicating the direction of rotation to which they refer. Each valve shall be fitted with a tag plate of stainless steel indicating the valve Tag No., duty or service condition intended and the function of the valve. This is in addition to nameplates and labels being provided by the manufacturer as per MSS SP 25. **Rev.3**
- 4.19 Protective covers shall be provided for spindles of gate / globe valves exposed to weather.
- 4.20 All valves shall have full sized ports and shall be suitable for installation in horizontal as well as in vertical pipelines.
- 4.21 All Gate, globe and check valves shall be designed for reconditioning of seating surfaces and replacement of stem & disc without removing the valve body from pipeline.
- 4.22 Stop check valves shall have full floating and accurately guided discs.
- 4.23 The body seat for Swing check valves shall be inclined at such an angle to minimize chatter.
- 4.24 Check valves shall be provided with outside lever & counter weight as called in specific requirements for quick closing / balance the disc in case of low velocities so that with a minimum pressure, the disc to open & resistance to flow past the disc is minimized.
- 4.25 All valves shall be suitable for the service.i.e flow, temperature & pressure under which they are required to operate & those performing similar duties shall be interchangeable with one another unless otherwise approved.
- 5.0 SPECIAL FEATURES OF VALVES
- 5.1 Extension Spindle Arrangement:
- 5.1.1 Extension spindle / chain operation to the valves shall be provided where required as per specific requirement. The Universal joints shall be provided as being capable of accommodating valve movements, in all three directions due to thermal expansion.
- 5.1.2 Where required as per specific requirement, valve yoke / spindles shall be lengthened so that the hand wheel is at a height of approximately one meter above the level of the floor or platform from which the valve is to be operated and where necessary they shall be provided with head stocks and pedestals of rigid construction. All gears used for the valve extensions shall be of steel, machine cut and shall be of cast or forged.
- 5.1.3 Surface finish for spindle & hinge pin shall be 0.4 micron Ra or better. Gland packing for gate / globe valves shall be asbestos free middle rings and braided type end rings. **Rev.3**



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5.2 Locking arrangement

For valves that are to be kept locked in full “Open” and / or “Close” position, if called for, the locking arrangement shall be provided with a non-detachable locking arrangement. (Hook type) **Rev.3**

5.3 Valves for Vacuum Service:

5.3.1 Valves of size up to 40 NB and operating under vacuum shall be offered with suitable, proven gland packing material in order to avoid ingress of atmospheric air entry to the system through gland of the valves. **Rev.3**

5.3.2 All valves of size 50 NB and above and operating under vacuum conditions shall be provided with water sealed glands. Valves with sealed gland arrangement shall be required with 3/8” BSP (or as specified) connections duly plugged on both sides of the bonnet. Sealing water shall be supplied at 4 ata and 50°C, unless otherwise stated. **Rev.3**

5.4 Valve with Limit Switches:

Valves with limit switches, if called for, shall be required for indication or for interlocking with some other equipment. Valves for such provision shall be offered with required number of limit switches for open and / or close position of the valve. The limit switches for this application shall have one normally open and one normally closed contact. The limit switches shall be Cutler Hammer / Siemens / Honeywell make and limit switch housing shall be weather proof to IP 67. The limit switches shall also be wired to a terminal box.

LIMIT SWITCH FOR VALVES **Rev.4**

Name of the item: Limit switch with normal roller lever snap action type in oil tight die cast aluminum housing.

Type: Momentary contact type

Application: To indicate open or close position of a valve having a striker plate attached to the stem.

No. of NO/NC Contacts: 1 NO + 1 NC Contacts shall be provided.

Maximum frequency of operation: 60 Operations / hour.

Rating: Max. 240V AC 3 amps or 240V DC 0.1 amps

Ambient Temp.: 50 deg. C.

Actuation type: Normal Roller Snap action type.

Enclosure: IP 65 or better as per IS 2147 (latest)

Construction:

1. The construction shall be completely oil tight, watertight, dust proof and weather proof.
2. Contacts shall be silver-plated.
3. Position of the point of contacts of the limit switch to be maintained with an accuracy of 0.01 mm.
4. The NO / NC contacts of the limit switch shall provide quick make and quick break action and full contact pressure at all times.

Valve supplier shall submit along with the contract drawing, a copy of drawing / catalogue giving complete constructional and dimensional details of the limit switch offered.

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5.5 Motorized Valves

5.5.1 The Motorized valves shall be offered with the electric actuators of any of the following makes **unless otherwise specified elsewhere: Rev.2**

- i) Rotork, Chennai
- ii) Limitorque, Faridabad
- iii) Auma, Bangalore
- iv) Antrieb, Chennai

The actuator shall be designed for the **cold working pressure (room temperature working pressure as per ASME B 16.34) of the respective class rating**. The selected actuator's stall torque shall be minimum 1.3 times the rated torque. **Also it has to be established that the offered actuator will open / close within 60 seconds or as specified**. Sufficient length of stem protection tube is to be provided where the stem rises beyond the actuator top. **Rev.2**

5.5.2 Motor of actuators shall be provided with class "F" insulation for the temp rise limited to class "B" Insulation.

A particular make and type of actuator shall be selected based on the Technical specification ACTSPEC:IVP:001 of Valve Actuators. **Wiring Diagram shall be in line with any one of the following as specified elsewhere: Rev.2**

- Standard – With out Integral Starter (Wiring diagram 4-V-MISC-90271 R11),
- With Integral Starter (Wiring diagram 3-V-MISC-24227 R0 – Unified Terminal Plan).
- Actuator with Plug & Socket (Wiring diagram 3-V-MISC-24357 R0),
(or corresponding actuator vendor wiring diagrams enclosed)

Control connection types i.e., Standard (1 power cable gland & 3 control cable glands – cable glands shall be double compression, nickel plated brass) / 9 pin plug & socket (internally looped for limit & torque switches – 2 nos. per actuator) and type of actuator motor protection i.e., thermostat (with trip unit to be included for standard actuator for mounting in MCC & for integral starter type it will be a part of starter). **Rev.4**

For all motorized valves, valve-actuator data sheet is to be furnished strictly in the typical format enclosed after placement of order. **But the kilowatt rating of the actuator proposed by the valve supplier is to be furnished within a week after placement of LOI / PO. Rev.4**

5.5.4 **In case integral bypass is provided to the main valve which is motorized, the integral bypass valve shall also be motorized.**

5.5.5 The actuator shall be provided with hand wheel (gearing and disengaging) & the same shall be adequate to open and close the valve under full unbalanced design pressure and shall be completely assembled on the respective valve and shop tested before shipment. Connection between valve actuator shall be flanged. Welding is not acceptable.

5.5.6 All motor operated globe valve's actuator for regulating duties shall be suitable for inching operation - 150 starts per hour / S2-15 minutes.

5.5.7 If actuator and gearbox combination is used, the gearbox shall be totally enclosed, bevel gear type. The gearbox design / make shall be proven type. **Rev.2**

5.5.7 The final valve assembly with electric actuator or bevel gear box or combination of bevel gear box + electric actuator shall be self-locking. I.e. on removal of power in the middle of valve travel, the disc shall remain in its position. **Rev.4**

6.0 MANUFACTURE OF VALVES

6.1 Particular care shall be taken to ensure that all foundry sand and loose material is properly removed from castings by fettling before the valves manufacture is started.



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6.2 Valves shall be manufactured strictly in line with the purchase order specifications.

7.0 LUBRICATION:

7.1 Provision shall be made for suitable lubrication wherever necessary to ensure a smooth easy operation and freedom from undue wear.

7.2 Where oil filled gear boxes are used they shall be provided with filling and drain plugs, oil level gauges or dipsticks. Housing for ball and roller bearings shall be packed with grease at the time of assembly.

7.3 Choice of oil and grease for all motor drives shall be based on ambient temperature of 60°C.

7.4 Type of oil / grease to be used and its annual consumption (based on 100 operations per year) shall be indicated by the bidder.

8.0 SHOP INSPECTION AND TESTS

All quality and stage / final inspection requirement (minimum) shall be carried out as per the relevant BHEL approved Quality Plan. However if customer would like to associate for witnessing or verification, the same would be indicated in the QP before manufacturing of valves.

8.1 For body, bonnet and cover, the material test certificates (correlated to melt number) shall be furnished by the vendor for identification and correlation.

8.2 For components like spindle, body seat, disc / wedge seat stelling, back seat bushing, bonnet/ cover bolts and nuts etc. material test certificates (typical) shall be furnished for identification & correlation.

8.3 Minimum NDT requirements extent of check for Pressure retaining parts/components shall be as follows.

8.4.1 Steel Castings:

i) MPI on welds ends shall be carried out for rating up to 300 class (inclusive).

ii) RT on butt weld ends and MPI on change of section shall be carried out for rating of 600 and above.

8.4.2 Steel Forgings:

i) 100% MPI and 100% UT on all areas shall be carried out on all forgings for valves with rating 1500 and above. Also UT shall be carried where the thickness/ diameter is greater than 40mm.

8.5 Dye penetrate test as per ASTM E165 shall be performed on all machined surfaces of trims.

8.6 For butt-welding ends of all valves, dye-penetrant test as per ASTM E165 shall be carried out on 100% of the valves and the results shall show no defects.

8.7 Hardness testing shall be done on body seat, disc/wedge facing, spindle, backseat bushing, thrust plate etc. The Purchaser's representative shall also check hardness of random samples.

8.8 100% Blue matching of seats shall be carried out and records shall be maintained for verification by the purchaser.

8.9 Hydrostatic/Air Tests:

8.9.1 Manually operated valves: All valves shall be tested hydraulically for strength, tightness of seats and tightness, of back seating at the pressures as mentioned in IS 6157 / API 598.



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8.9.2 Motor operated Valves

- a) All the motor operated valves shall be tested hydraulically for seat / backseat with the motor actuator at rated power supply.
- b) Motorized valves shall also be tested hydraulically for body, seat and backseat at the pressures as mentioned in IS 6157 / API 598 with hand wheel on the actuator.

8.9.3 Gate and Globe valves seats shall also be tested on air at a pressure of 6 kg/cm².

8.9.4 Duration of Test:

The duration of test, leakage rate / acceptance criteria are as per relevant testing standard.

8.10 For motor operated valves, the type tests (including degree of protection) one for each type of actuator (type tested actuators shall not be supplied) and duplicate tests for job actuators as per the requirements of IS: 325 and technical specification shall be performed. Performance tests of the actuators such as operation of limit switches, smooth functioning, noise, vibration, opening and closing time, torque required, etc., shall also be done.

8.11 Dimensional and functional checks shall be carried out.

8.12 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 by IBR approved authority shall be submitted.

9.0 CLEANING & PAINTING

9.1 As per relevant Project CQP.

10.0 CLEANING AND PROTECTION FOR DESPATCH:

10.1 As per relevant Project CQP.

10.2 Machined surfaces shall be suitably protected.

10.3 Flanged Valves: To prevent damage to ends & to avoid foreign material entering the valve while shipment & 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.

10.4 Valves with Screwed, Socket Welding and Butt-welding ends

Valves shall be protected by means of polythene caps/rubber and protectors to prevent damage to ends & also to avoid foreign material entering the valve while shipment & storage.

10.5 All the valves shall be packed suitably in wooden cases in order to avoid damage during transit and also during storage at site.

10.6 Valve Tag nos. shall also be incorporated in all the dispatch documents.

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11.0 DATA / DOCUMENTS/DRGS TO BE FURNISHED AFTER THE AWARD OF CONTRACT:

11.1. Relevant drawings / leaflets for the offered 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 IS / ASTM / ASME Standards to which the materials conform.
- iv) Special features, if any, as called in the specific requirements.
- v) Cv calculations for Regulating Globe Valves
- vi) Cv test report i.e. lift versus flow for Regulating Globe Valves
- vii) Torque calculations for Motor Operated Valves actuator selection.

11.2 Relevant catalogue / leaflet of the actuators.

11.3 Storage, Operation and maintenance manual for valves and actuators (one copy of this shall be enclosed with the packing slip / wooden cases so that at receiving end care can be taken for proper storage & commissioning)

11.4 Quality Plan.

11.5 List of recommended spares for 3 years trouble free operation of valves (Stem, Wedge / Disc & Yoke bush / Drive bush) and actuators & gearboxes shall be quoted.

11.6 List of Commissioning spares (Stem packing & Gaskets) shall be quoted.

11.7 Drawings / documents submission schedule.

The mere approval of documents like drawings, data sheets, wiring diagrams, actuator sizing calculations, flow calculations, etc., will not however relieve the suppliers from meeting our specification requirements, relevant product and testing standard requirements and general accepted engineering principles. Ultimately the valves have to perform satisfactorily at the service conditions and at the end user place. **Rev.4**

11.8 DEVIATIONS

11.8.1 If the bid submitted has got any deviation from the technical stipulation in the tender document, the tenderer shall tabulate in the appropriate "schedule of deviation" furnishing full particular of such deviations. Deviations are to be furnished with specific mention to clause number. Only such deviations will be discussed and resolved. Reasons / explanation for such deviations shall be furnished. Any other notes / comments viz. "refer to forwarding letter" etc. is not acceptable.

Even if there is no deviation from the tender document, the tenderer shall submit the deviation form and indicate as "no deviations".

PREPARED: K.RAVI

APPROVED: K.ARUN

PRODUCT ENGINEERING / VALVES	VAL/PNEUMATIC_ACTR_ASSLY/SPEC/028 Rev.:00
BHEL/TIRUCHIRAPPALLI-14	DATE: 06-11-2015

Purchase Specification for Pneumatic actuator assembly for conventional valve

Scope

Design, manufacture, testing and supply of Piston type pneumatic actuator assembly for conventional valve application.

The pneumatic actuator assembly is for linear travel, ON/OFF application requiring high thrust.

Service condition of the valve is as below.

Location	: Tropical, Outdoor, dusty, salty, corrosive & highly polluted atmosphere
Ambient Temp	: up to +70 Deg C
Relative humidity	: 100%
Medium to be controlled	: Water / Steam

A typical pneumatic hook up diagram is attached with this specification. This diagram is indicative only. The supplier needs to design their own arrangement taking care of these specification requirements.

Detailed specification

1.0. PNEUMATIC ACTUATORS

1. The actuator shall be pneumatic double acting piston type or diaphragm.
2. The Bidder shall be responsible for proper selection and sizing of valve actuators in accordance with the valve thrust.
3. The actuators shall be designed to produce the required stem force with supply air pressure of minimum 3.5 to maximum 7 kg/sq.cm (g)..
4. Adequate allowance for stem force shall be provided in the selection of the actuator to ensure tight seating unless otherwise specified.
5. Actuator shall be supplied with nameplates, which indicate the piston air pressure at full open and full closed positions.

2.0. PNEUMATIC ACTUATORS ASSEMBLY

1. All accessory devices like air filter regulators, limit switch assemblies, junction boxes, pneumatic tubing etc. shall be provided as per the requirements and assembled integral to the pneumatic actuator assembly.
2. The limit switches shall be properly wired to the terminal box mounted on the system.
3. Contacts of limit switches shall be snap action type. Contact rating shall be minimum of 5A at 240V AC or 0.5A at 220V DC (Inductive load). The mechanical life of the switching element shall be 20 million operating cycles. The creep action type is not acceptable. Mercury contacts will not be accepted.
4. Only double throw contacts shall be used. These contacts shall be equipped with suitable resistors in order to provide connecting cable wire break / short circuit detection. The connecting cables shall

PRODUCT ENGINEERING / VALVES	VAL/PNEUMATIC_ACTR_ASSLY/SPEC/028 Rev.:00
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have sufficient no. of cores for this purpose. All external screws, bolts and nuts shall be of stainless steel.

5. The material of JB shall be GI of 2 mm thick or FRP material of 4 mm thick and protection class of IP-55 or better..
6. In the JB wiring diagram to be submitted by vendor, following shall be indicated.
 - i. Earthing
 - ii. Cable glands
 - iii. Minimum gap of 25 mm is to be left between the terminals of Electronic position transmitter and Solenoid valve.
7. Air supply regulator shall be of Diaphragm type, pressure rating up to 15 Kg / sq.cm(g) and filter quality to suit piston actuator requirement (Min 5 microns) with 2" Pressure gauge.

3.0. SPECIFICATION FOR MANUAL OVERRIDE:

All actuators shall be equipped with a manual override to allow operation of the closing element when control air is not available or when it is desired to by-pass the controller to manually operate the actuator. The manual override shall be mounted between the Actuator and the valve. The internal worm gear shall be mounted on ball bearings for long operating life.

It shall be possible to engage the manual override with actuator piston rod for manual operation and disengage for actuation by control signal

4.0. FUNCTIONAL TESTS:

The actuator assembly shall be tested at supplier's work for the functions that can be tested with valve.

At Vendor works the fully assembled or completed valves including the actuators control devices and accessories shall be functionally tested to demonstrate the operability and response time of the valve and the actuator. This may be done by cycling the valves 3 or 4 times from open to close position. These tests shall also include the verification of control valve operation features such as stay put operation, fail to open, fail to close on air failure, control signal failure etc. in line with the specification requirements.

5.0. Inspection & Testing : As per quality plan CI:QAC:STD:QP:42

6.0. Painting : Corrosion resistant, Epoxy based resin.

7.0. DOCUMENTS REQUIRED

1. **Along with offer:**
 - a. Any deviations to specific technical requirements listed are to be brought out point-wise with detailed explanation as to the cause of deviation .
 - b. Filled up data sheets.
 - c. GA drawing for system offered.
 - d. Catalogs of the Valve and accessories offered.
 - e. Commissioning spares required along with the price.
 - f. Pneumatic hookup diagram similar to the one enclosed.
 - g. Terminal Box wiring diagram.

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- h. Various characteristics like sensitivity, Repeatability, Accuracy & Dead band to be specified.
- i. Air consumption of pneumatic actuator in SCFM.
- j. Weight of Actuator in Kg. With all accessories mounted.
- k. Torque at various pressures.
- l. Material of construction of each part.

2. **On placement of order:**

- a. Two sets of O&M manual for all the instrument items.
- b. All relevant drawings & data sheets.

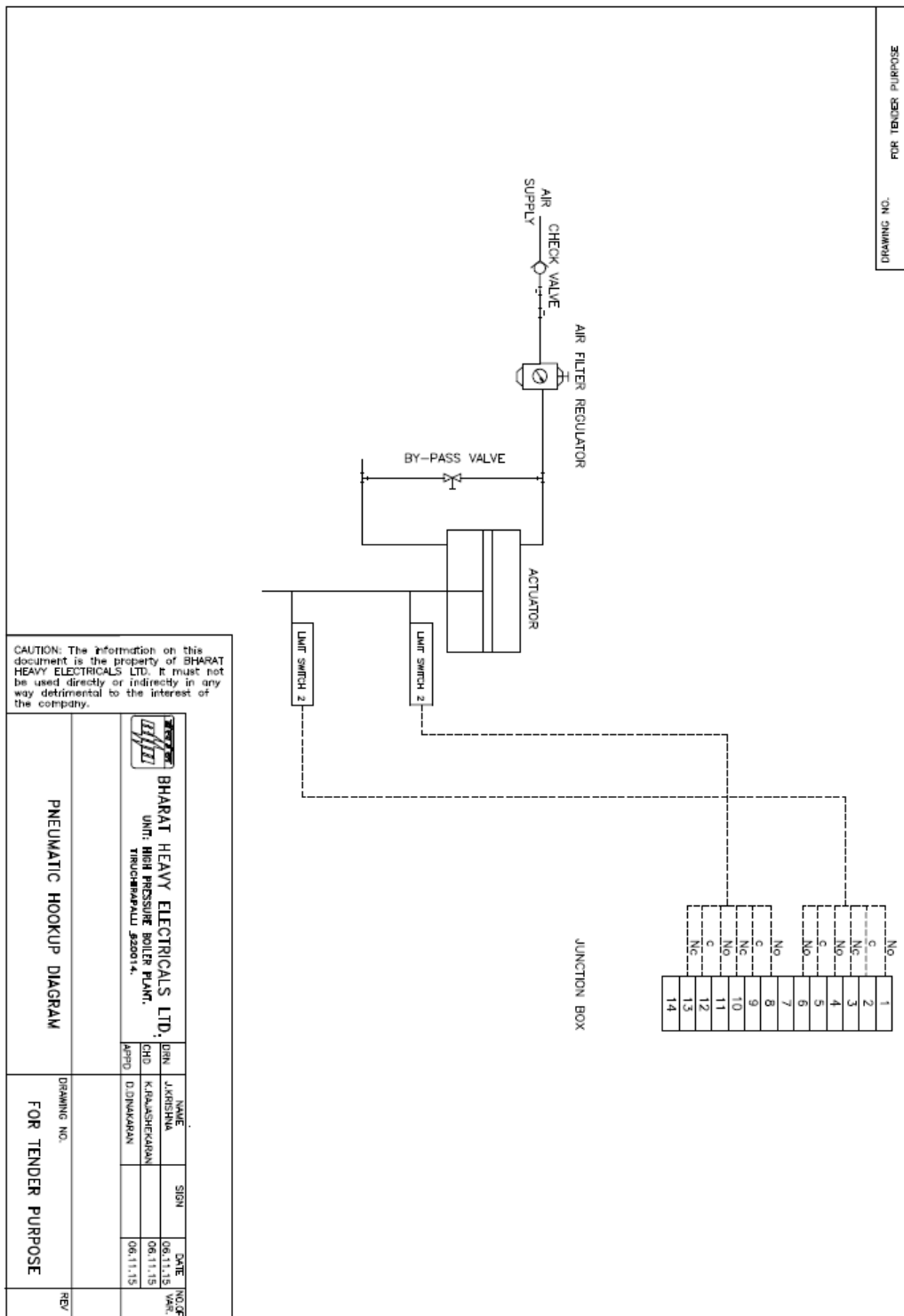
Data Sheet for Actuator assembly:

SL.NO	SPECIFICATION	BHEL REQ.	VENDOR DATA / CONFIRMATION
Actuator			
1.0	Type	Pneumatic Double Acting Piston/diaphragm, ON/OFF type, continuous duty	Make & Type No=
1.1	Size		Size=
1.2	Material of Piston rod	Hard chrome plated stainless steel	
1.3	Cylinder barrel	Hone and hard chrome plated	
1.4	Piston & cylinder seal	Viton	
1.5	Air Consumption		Min= Max=
1.6	Model		Model No=
1.8	Action of driving equipment on power air supply failure	Stay put.	
1.9	Type of stay put	Self reset type	
1.12	Supply Air pressure	Min. Required : 3.5 Kg/cm ² Available pressure: 3.5 to 7 Kg/cm ²	Min.Requirement =
1.13	Lubricator	Required / Not Required	Pl. Confirm
1.14	Air connection	¼" NPT or 3/8" NPT	
3.1	Input Voltage	24 V DC	Operating voltage range=
3.2	Output	4-20mA	
3.3	Linearity	+/- 1% of span or better	
3.4	Enclosure	IP65	
LIMIT SWITCH			
5.0	Type	Snap action - Heavy duty	Make & Type No=
5.1	No. of Contacts	Each limit switch shall have 2 NO + 2 NC potential free contacts.	
5.2	Contact Rating	Min. of 5A @ 240V AC or 0.5A @ 220V DC (Inductive load)	Contact Rating =
5.3	Enclosure	Weather proof to IP55	
5.4	Actuation point	Full open & full close	

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SL.NO	SPECIFICATION	BHEL REQ.T.	VENDOR DATA / CONFIRMATION
Air filter			
7.0	Type	Pressure Rating 15 Kg / sq.cm, supply air 7Kg/cm2	Make & Type No=
7.1	Filter Size		Size=
7.2	Pressure Gauges	At output	
7.3	Output pressure	0 - 7 Kg / sq.cm	
7.4	Filter quality	To suit piston actuator requirement. (Minimum 5 microns)	
JUNCTION BOX			
8.0	Construction	GI of 2 mm thick or FRP of min. 4 mm thick with NPT cable entry.	GI / FRP
8.1	Enclosure	Weather proof to IP55	
8.2	Cable glands	Double compression cable glands required for incoming / outgoing cables. Unused entries to be plugged using plugs.	No. of Glands= No. of plugs =
9.0	Check Valves	To be decided by vendor as required	Make & Type No=
10.0	3 Way Pneumatic Valves	To be decided by vendor as required	Make & Type No=
Interconnections			
11.1	Interconnection tubing. All the accessories shall be connected with tubes as per the pneumatic hookup diagram enclosed.	SS316 Material – 8mm for supply air & 6mm for signal air lines. No line shall be less than 6mm.	
11.2	Cabling conduits	Cabling shall be with Liquid Tight Conduits. Conduits shall be with braiding to protect the cable.	

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DATE	DESCRIPTION	PREPARED	REVIEWED	APPROVED
06/11/2015	INITIAL RELEASE	(J KRISHNA)	(K.RAJASHEKARAN)	(D.DINAKARAN)

SL. NO	COMPONENT & OPERATIONS	CHARACTERISTICS	CLASS	TYPE OF CHECK	QUANTUM OF CHECK		REFERENCE DOCUMENT	ACCEPTANCE NORMS	FORMAT OF RECORD		AGENCY			REMARKS
					M	C/N				D*	M	C	N	
1.	2.	3.	4.	5.	6.		7.	8.	9.	D*	**	10.		11.

		LEGEND: * RECORDS, IDENTIFIED WITH "TICK" (✓) SHALL BE ESSENTIALLY INCLUDED BY SUPPLIER IN QA DOCUMENTATION. ** M: MANUFACTURER/SUB-SUPPLIER C: MAIN SUPPLIER, N: NTPC P: PERFORM W: WITNESS AND V: VERIFICATION. AS APPROPRIATE, CHP: NTPC SHALL IDENTIFIED IN COLUM "N" AS 'W"	DOC. NO.:		REV..... CAT.....		
MANUFACTURER/ SUB-SUPPLIER	MAIN-SUPPLIER		 FOR NTPC USE				
SIGNATURE					REVIEWED BY	APPROVED BY	APPROVAL SEAL



BHARAT HEAVY ELECTRICALS LTD

VALVES PURCHASE

Trichy - 620 014. India

GENERAL TERMS AND CONDITIONS

1. QUOTATIONS:

- a. **BID system:** The offers are invited in Two part bid system (Part I will be Techno-commercial bid and part II will be Price Bid). Techno-commercially suitable vendors alone will be intimated for price bid opening.
- b. **Late tenders:** Tender received after 2.00 pm on due date will be considered as Late tender. Late tenders will not be considered under any circumstance.
- c. **Regulations:** Tenders should be free from CORRECTION AND ERASURES. Corrections if any must be attested. All amounts shall be indicated both in words as well as figures. Where there is difference between amount quoted in words and figures, amount quoted in words shall prevail.
- d. **PVC:** Price Variation clause not acceptable. Prices should be firm.
- e. **Catalogue:** Manufacturer's name, Trade Mark or Patent No. if any should be specified. Illustrative leaflets giving technical particulars are required along with quotation. Products with ISI certification will be preferred
- f. **Deviation.** Any deviations from the specification are to be furnished separately as "Schedule of Deviation". If there is no deviation vendor should indicate "No Deviation".
- g. **Confirmation:** Confirmation for compliance is to be given in the offer for all the techno commercial conditions specified in the specification.

2. COMMERCIAL TERMS & CONDITIONS:

- a. **Terms of Payment:**
Payment term is 100% payment on CAD basis after 45 days on acceptance of material.
- b. **Liquidated Damage:** Liquidated damages shall be 0.5% of the total order value or part thereof subject to a maximum of 10% of the total order value.
- c. **Delivery Terms:**
For import Supplies: CFR/CIF Chennai seaport as per incoterm 2010.
For Indigenous Supplies: FOR BHEL Trichy
- d. **Validity of Offer:** Prices should be valid for 120 days from the date of opening of this tender.
- e. **Taxes & Duties:** Excise duty, sales tax and other levies (if any) shall be indicated as extra in the offer. Sales Tax payable as extra should be specifically stated in quotation along with CST & T.N.G.S.T No. failing which the purchaser will not be liable for payment of Sales Tax. Our T.N.G.S.T No. 3550005 Dated 01-04-1995 C.S.T. No. 259383 Dt. 11.06.1991.
- f. **Risk Purchase:** Alternatively the purchaser at his option will be entitled to terminate the contract and to purchase elsewhere at the risk and cost of seller either the whole of goods or any part which the supplier has failed to deliver or dispatch within the time stipulated as aforesaid or if the same were not available, the best and the nearest available substitute therefore. Supplier shall be liable for any loss which the purchaser may sustain by reason for such risk purchases in addition to penalty.
- g. **Guarantee Clause:** The vendor shall give a guarantee for the performance of his supplies for a period of 24 months from the date of dispatch or 18 months from the date of commissioning whichever is earlier.
- h. **MODVAT/CREDIT:** If any Excise Duty is payable, the chapter head/sub-head reference and the rate of the duty should be quoted. If the offered material is availing MODVAT credit for his input materials, the effect of proforma invoice should be passed on to the purchaser. For imported components, Duty benefits should be passed to BHEL.
- i. **Miscellaneous:** Any conditions which might have been quoted by the seller and are in contravention to the terms prescribed in order and which have not been specifically accepted by Purchaser will not be applicable to the contract.
- j. **Delivery period:** 32 weeks from date of purchase order
- k. **Performance Bank Guarantee:** If tender Calls for Performance Bank Guarantee, Vendor should provide a performance bank guarantee (PBG) in BHEL format for 10% of the total Purchase order value valid for warranty/guarantee period with an additional claim period of 2 months. PBG should be issued from list of consortium banks.
- l. **Post Purchase order documents:** All documents should be submitted for BHEL/NTPC approval within 15 days from date of purchase order.



BHARAT HEAVY ELECTRICALS LTD

VALVES PURCHASE

Trichy - 620 014. India

GENERAL TERMS AND CONDITIONS

3. GENERAL CONDITIONS

- a. BHEL reserves the right to finalize the tender as per item sl no wise or as a total package or project wise. Separate orders will be released for each project and documents should be supplied for each order separately.
- b. BHEL reserves the right to increase or reduce or split the Tender Quantity and to NOT to order for some or all material based on the changes in project.
- c. BHEL shall have the right to visit vendor works during the execution of contract along with end customer for verifying status, inspection and testing of the material.
- d. BHEL reserves the right to negotiate or re-float the tender in case the quoted prices are not acceptable.
- e. Supplier shall arrange packing to avoid lose or damages during Road Transport, Site handling & Storage.
- f. BHEL reserves the right to finalize the tender either through price bid opening or through Reverse Auction route.
- g. BHEL reserves the right to reject the offer of a particular bidder due to unsatisfactory past performance in the execution of a contract at any of BHEL projects / units.
- h. The Drawings and Technical documents given in this enquiry are the sole property of BHEL. This should not be misused in any form.
- i. Certificate of country of Origin is mandatory for all import supplies.

4. DOCUMENTATION:

- a. **With Consignment:** Bill of Lading, Invoice, Packing List, Delivery Challan, O&M manual Material Test Certificate, Calibration Report, Compliance Certificate, Guarantee/Warranty Certificate, etc...
- b. **To Finance:** Original and Duplicate Invoice for payment should be sent directly to
Senior Manager, Finance/Valves-Bills section
BHEL TRICHY 620014
- c. **To Purchase:** Original Bill of Lading, Original Country of origin, Invoice, Packing List, Delivery Challan, O&M manual Material Test Certificate, Calibration Report, Compliance Certificate, Guarantee/Warranty Certificate, etc...
- d. **Identification:** Material code, Purchase Order, PO item Sl No, Unique Sl No if any should be provided in all despatch documents, materials and packing clearly.

5. TENDER EVALUATION:

PART I Techno-commercial Bid.

- All vendors should submit General arrangement drawing, datasheet and C&I diagrams of the offered product
- Point by point technical confirmation of all pages of our technical specifications and commercial conditions are required with your sign and seal along with techno commercial Offer.
- Offers from supplier not having technical capability or not agreed for commercial terms, will be rejected
- Suppliers who fails to get NTPC approval will be rejected.

PART II Price Bid.

- Bidders qualified for both part I will be intimated for participating in priced bid opening/Reverse Auction.
- L1 bidder will be decided based on landed cost for the equipment to BHEL.
- For evaluation, the exchange rate shall be taken as TT selling rate of SBI on date of Part-1 bid opening.

LOADING CRITERIA

- "Base rate of SBI (as applicable on the date of bid opening. Techno-commercial bid opening in case of two part bids) + 6% shall be considered for loading for the period of relaxation sought by bidders.
- For import vendors: Usance LCs the loading will be considered @ 1.5% on the offered Value. For unconfirmed LC at sight the loading will be considered @ 3.5% on the offered Value.
- Any deviation from the above LD clause, loading will be applied to the extent to which it is not agreed by the bidder (at offered value).
- If supplier offers more than the required delivery period BHEL will operate 0.5% of total order value loading factor for evaluation of their offer for every week delay.
- CAD at sight, Confirmed LCs and Advance payment are liable for rejection.



VALVES PURCHASE

Trichy - 620 014. India

SPECIAL TENDER TERMS AND CONDITIONS

Special Terms applicable for this tender

1. **Inspection:** All material should be inspected by IBR approved inspection agency, NTPC and BHEL.
2. **Performance Bank Guarantee** is Applicable: Vendor should provide a performance bank guarantee (PBG) for 10% of the total Purchase order value valid for a guarantee period with an additional claim period of 2 months. Bank guarantee should be as per BHEL format from list of consortium Banks (Annexure 3B).
3. **Evaluation** will be as total package with cost to BHEL which will include Commissioning spares.
4. **Delivery** should be 24 weeks from date of purchase order.
5. **Customs duty** is exempted for this project.
6. **Guarantee Period:** The complete system shall be guaranteed for 18 months of trouble free performance from the date of shipment or 12 months from commissioning date whichever is earlier. In case of any failure or trouble reported from site, the supplier shall depute their representative immediately to attend the problem and replace the defective components/parts, free of cost.
7. **Customer Approval:** This project needs customer approval, Vendor should provide supply record and end user performance certificate for same or higher rated valves for getting approval from customer. Suppliers who fails to get customer approval will be rejected.

Loading Criteria

- Any deviation in the payment term will attract loading as mentioned. "Base rate of SBI (as applicable on the date of bid opening. Techno-commercial bid opening in case of two part bids) + 6% shall be considered for loading for the period of relaxation sought by bidders.
- In the case of Usance LCs the loading will be considered @ 1.5% on the offered Value.
- For LC at sight the loading will be considered @ 3.5% on the offered Value.
- CAD at sight, Confirmed LCs and Advance payment are liable for rejection.
- Any deviation from the above LD clause, loading will be applied to the extent to which it is not agreed by the bidder (at offered value).
- If supplier offers more than 32 weeks, BHEL will operate 0.5% loading factor on order value for evaluation of their offer for every week delay. Quotations with Delivery period beyond 42 weeks will be rejected.

The above offer should reach the following office address on or before the due date by 14:00 hours (IST). Late offers will not be considered in any circumstances.

The Tender Opening Cell / Valves
Room No. -26, Building -24
Bharat Heavy Electricals Limited
Tiruchirappalli - 620014, Tamilnadu, India
tender_cell@bheltry.co.in

RFQ Owner Details

Name : Fayas Malik K
Designation : Engineer
Department : Purchase valves
Phone : +91 (0) 431 2577913
Mobile : +91 7598541541
Email : fayasmalik@bheltry.co.in

All communication should be addressed to the Secretary to the Government of India, Ministry of Industry, by title, NOT by name

Fax : 011-2306 2626

संख्या /No. 20/29/2009 -Boilers
भारत सरकार
वाणिज्य और उद्योग मंत्रालय
(औद्योगिक नीति एवं संवर्धन विभाग)
उद्योग भवन, नई दिल्ली - 110107
GOVERNMENT OF INDIA
MINISTRY OF COMMERCE AND INDUSTRY
(DEPTT. OF INDUSTRIAL POLICY & PROMOTION)
UDYOG BHAWAN, NEW DELHI-110107,
दिनांक/ Dated, the 2nd April, 2012

To

1. All the members of the Central Boilers Board
2. All the Inspecting Authorities

Subject: List of recognised Inspecting/Competent Authorities, Well Known Steel Makers, Foundries/Forgings units, Tube/Pipe Makers, Material Testing Laboratories and Remnant Life Assessment Organizations under Indian Boiler Regulations as on 31st March, 2012.

Sir,

I am to forward herewith a copy each of the list of recognised Inspecting/Competent Authorities, Well Known Steel Makers, Foundries/Forgings units, Tube/Pipe Makers, Material Testing Laboratories and Remnant Life Assessment Organizations under Indian Boiler Regulations, 1950, as on 31st March, 2012 for your reference and record.

Thanking you,

Yours faithfully,

(S. K. Jain)

Development Officer &
Assistant Secretary, Central Boilers Board
Tel.No.011-23063321/3318

Encl: "As above"

Mr. SRH
↓
Mr. V RK
↓
2
2/4/12

V. K. JAIN

(As on 31/03/2012)

INSPECTING AUTHORITIES

<u>NAME OF THE AUTHORITY</u>	<u>AREA OF OPERATION</u>
1. Director of Boilers, Andhra Pradesh	Andhra Pradesh
2. Chief Inspector of Boilers, Arunachal Pradesh	Arunachal Pradesh
3. Chief Inspector of Boilers Assam	Assam
4. Chief Inspector of Boilers Bihar	Bihar
5. Chief Inspector of Boilers Chhattisgarh	Chhattisgarh
6. Chief Inspector of Boilers, Delhi	N.C.T.D.
7. Chief Inspector of Boilers, Goa.	Goa
8. Director of Boilers, Gujarat.	Gujarat, Daman & Diu and Dadra & Nagar Haveli
9. Chief Inspector of Boilers, Haryana.	Haryana & Chandigarh
10. Chief Inspector of Boilers, Himachal Pradesh.	Himachal Pradesh
11. Chief Inspector of Boilers,, Jharkhand.	Jharkhand
12. Director of Boilers, Karnataka.	Karnataka
13. Director of Boilers, Kerala.	Kerala
14. Director of Boilers, Madhya Pradesh.	Madhya Pradesh
15. Director of Boilers, Maharashtra.	Maharashtra
16. Chief Inspector of Boilers, Meghalaya	Meghalaya
17. Chief Inspector of Boilers, Manipur	Manipur

- | | |
|---|---|
| 18. Chief Inspector of Boilers,
Mizoram | Mizoram |
| 19. Chief Inspector of Boilers,
Nagaland | Nagaland |
| 20. Director of Boilers,
Orissa | Orissa |
| 21. Director of Boilers,
Punjab | Punjab |
| 22. Chief Inspector of Boilers,
Labour Department,
Government of Puducherry,
Puducherry | Puducherry |
| 23. Chief Inspector of Boilers,
Rajasthan. | Rajasthan |
| 24. Director of Boilers
Tamil Nadu | Tamil Nadu |
| 25. Chief Inspector of Boilers,
Tripura | Tripura |
| 26. Director of Boilers,
Uttar Pradesh | Uttar Pradesh |
| 27. Deputy Director of Factories & Boilers
Uttarakhand | Uttarakhand |
| 28. Chief Inspector of Boilers,
West Bengal | West Bengal |
| 29. M/s. Lloyd's Register Asia
63-64, Kalpataru Square, 6 th Floor,
Kondivita Lane, Off. Andheri-Kurla Road,
Mumbai-400 059 | Tamilnadu, Maharashtra
Gujarat, Haryana & Punjab |
| 30. M/s. TUV Nord Systems GmbH Co.KG.
Langemarckstr 20
451141 Essen
GERMANY. | Europe, Brazil, China, Korea
and Thailand |
| 31. M/s RSA
(Formerly Royal & Sun Alliance plc)
17 York Street,
Manchester, M2 3RS,
United Kingdom | Europe |

- | | | |
|-----|--|--|
| 32. | M/s. Japan Inspection Company Limited,
No.10-7, 1-Chome, hatchobori, Chou-ku,
Tokyo, 104-0032, Japan | All countries except India |
| 33. | M/s. S.G.S. Korea Company Limited,
Industrial Division,
647-2, Sinpyeong-dong,
Saha-gu, Busan,
KOREA (604-030). | Korea & Japan |
| 34. | M/s Bureau Veritas,
67-71, Boulevard du Chateau,
92200 Neuilly-sur-Seine,
FRANCE | All countries except India. |
| 35. | M/s. Lloyds Register Verification Ltd.,
71, Fenchurch Street,
London EC 3M, U.K. | All countries except India. |
| 36. | M/s. Velosi Certification Bureau Ltd.,
Unit 1 Woodside Business Park,
Whitley Wood Lane,
Reading, Berkshire, RG2 8LW
United Kingdom | Europe, Middle East
Countries, China, Malaysia
Singapore & USA |
| 37. | M/s TUV Rheinland Brandenburg P falz e.V.,
Am Grauen stein, D-51105 Klon,
Germany | Europe , Japan, China &
Korea |
| 38. | Technischer Uberwachungs-Verein Saarland e.V.,
Am Tuev 1,
66280 Sulzbach,
Germany | Europe |
| 39. | M/s OOO "TekhnoLogicheskieEnergositime"
1. Kalinia St. Belgorod, 308001
Russia | Russia, China, Ukraine, USA
& Germany |
| 40. | M/s Engineering Bureau Franke
International,
55, Amurskaya St.,
Dnepropetrovsk
49108, Ukraine | Ukraine, Russia, Belarus, China ,
Uzbekistan, Poland, Belgium, Romania,
& Czech Republic |
| 41. | M/s. ARISE Boiler Inspection &
Insurance Company Risk Retention Group,
Grand Bay 1, 7000 South Edgerton Road,
Suite 100, Brecksville,
OH 44141 USA | USA & Canada |
| 42. | Tata Projects Limited,
"Mithona Towers-I", 1-7-80 to 87,
Opp. Wesley Co-Ed. Jr. College,
Prenderghast Road,
Secunderabad- 500 003, (India) | All countries except India |

- | | | |
|-----|--|----------------------------|
| 43. | M/s TUV SUD Industrie Service GmbH,
Wstendstr. 199,
80686 Munich,
Germany | All countries except India |
| 44. | M/s Germanischer Lloyd Industrial Services GmbH,
Steinhoeft 9,
20459 Hamburg,
Germany | All countries except India |
| 45. | M/s. TUV Thuringen e.V.,
Business Division Steam and Pressure Technology,
Melchendorfer Str. 64,
99096 Erfurt,
Germany | Europe |
| 46. | M/s. SGS-CSTC Standards Technical Services Co. Ltd.
9 th Building, No. 69,
KangQiao Industrial Park, Block 1159,
KangQiao East Road, Pudong District,
Shanghai-201 319
China | China |
| 47. | M/s Moody International Limited,
Hayworthe House, Market Place,
Haywards Heath, West Sussex,
United Kingdom | All countries except India |

COMPETENT AUTHORITIES

NAME OF THE AUTHORITY

1. Director of Boilers,
Andhra Pradesh
2. Chief Inspector of Boilers,
Arunachal Pradesh
3. Chief Inspector of Boilers
Assam
4. Chief Inspector of Boilers
Bihar.
5. Chief Inspector of Boilers
Chhattisgarh
6. Chief Inspector of Boilers,
Delhi.
7. Chief Inspector of Boilers,
Goa.
8. Director of Boilers,
Gujarat.
9. Chief Inspector of Boilers,
Haryana.
10. Chief Inspector of Boilers,
Himachal Pradesh.
11. Chief Inspector of Boilers,,
Jharkhand.
12. Director of Boilers,
Karnataka.
13. Director of Boilers,
Kerala.
14. Director of Boilers,
Madhya Pradesh.
15. Director of Boilers,
Maharashtra.
16. Chief Inspector of Boilers,
Meghalaya
17. Chief Inspector of Boilers,
Manipur

18. Chief Inspector of Boilers,
Mizoram
19. Chief Inspector of Boilers,
Nagaland
20. Director of Boilers,
Orissa
21. Director of Boilers,
Punjab
22. Chief Inspector of Boilers,
Labour Department,
Government of Puducherry,
Puducherry
23. Chief Inspector of Boilers,
Rajasthan.
24. Director of Boilers
Tamil Nadu
25. Chief Inspector of Boilers,
Tripura
26. Director of Boilers,
Uttar Pradesh
27. Deputy Director of Factories & Boilers
Uttarakhand
28. Chief Inspector of Boilers,
West Bengal
29. M/s. National Test House,
Plot No.F-10, M.I.D.C.,
Marol, Andheri (E),
MUMBAI - 400 093.
30. Welding Research Institute,
Bharat Heavy Electricals limited,
Tiruchirapalli – 620014.
31. M/s RSA
(Formerly Royal & Sun Alliance plc)
17 York Street,
Manchester, M2 3RS,
United Kingdom
Europe
32. M/s. TUV Nord Systems GmbH Co.KG.
Langemarckstr 20
451141 Essen
GERMANY.
Europe, Brazil, China, Korea
and Thailand

33. M/s. Hartford Steam Boiler Inspection and Insurance Company of Connecticut,
Code Services, One State Street,
P.P.Box 299, Hartford, CT 06141-0299
U.S.A.
34. M/s. Japan Inspection Company Limited,
No.10-7, 1-Chome, hatchobori, Chou-ku,
Tokyo, 104-0032, Japan
35. M/s. S.G.S. Korea Company Limited, Korea and Japan
Industrial Division,
647-2, Sinpyeong-dong,
Saha-gu, Busan,
KOREA (604-030).
36. M/s Bureau Veritas,
67-71, Boulevard du Chateau,
92200 Neuilly-sur-Seine,
FRANCE
37. M/s. Lloyds Register Verification Limited, All countries except India
71, Fenchurch Street,
London EC3M 4BS,
UNITED KINGDOM
38. M/s. Velosi Certification Bureau Ltd., Europe, Middle East
Countries, China, Malaysia
& USA
Unit 1 Woodside Business Park,
Whitley Wood Lane,
Reading, Berkshire, RG2 8LW
United Kingdom
39. Technischer Uberwachungs-Verein Saarland e.V., Europe
Am Tuev 1,
66280 Sulzbach,
Germany
40. M/s. OOO "TekhnoLogicheskieEnergosistime", Russia, China, Ukraine, USA
& Germany
1, Kalinia St. Belgorod, 308001,
Russia.
41. M/s. National Test House,
11/1, Judges Court Road
Alipore, Calcutta - 700027
42. M/s. ARISE Boiler Inspection & Insurance Company USA & Canada
Risk Retention Group,
Grand Bay 1, 7000 South Edgerton Road,
Suite 100, Breeksville,
OH 44141 USA
43. M/s TUV Rheinland Brandenburg Pfalz e.V.,
Am Grauen Stein, D-51105 Klön,
Germany

44. M/s National Test House,
Kamla Nehru Nagar,
Ghaziabad- 201 002
Uttar Pradesh
45. M/s TUV SUD Industrie Service GmbH, All countries except India
Wstendstr. 199,
80686 Munich,
Germany
46. M/s Germanischer Lloyd Industrial Services GmbH, All countries except India
Steinhoeft 9,
20459 Hamburg,
Germany
47. M/s. TUV Thuringen e.V., Europe
Business Division Steam and Pressure Technology,
Melchendorfer Str. 64,
99096 Erfurt,
Germany
48. M/s. SGS-CSTC Standards Technical Services Co. Ltd. China
9th Building, No. 69,
KangQiao Industrial Park, Block 1159,
KangQiao East Road, Pudong District,
Shanghai-201 319
China
49. M/s Moody International Limited, All countries except India
Hayworthe House, Market Place,
Haywards Heath, West Sussex,
United Kingdom



BHARAT HEAVY ELECTRICALS LTD

VALVES PURCHASE

Trichy - 620 014. India

GENERAL TERMS AND CONDITIONS

TERMS & CONDITION	VENDOR CONFIRMATION
a. Terms of Payment: 100% after 45 days on satisfactory receipts and acceptance of material at BHEL stores/ Site acknowledgement. Offers with payment term as Confirmed LC and advance payment will be rejected. (for other terms loading will be done as per terms and conditions)	
b. Liquidated Damage: Liquidated damages shall be 0.5% of the total order value or part thereof subject to a maximum of 10% of the total order value.	
c. Delivery Terms: <u>For import Supplies:</u> CFR/CIF Chennai seaport as per incoterm 2010 <u>For Indigenous Supplies:</u> FOR BHEL Trichy	
d. Validity of Offer: Prices should be valid for 120 days from the date of opening of this tender.	
e. Risk Purchase: Alternatively the purchaser at his option will be entitled to terminate the contract and to purchase elsewhere at the risk and cost of seller either the whole of goods or any part which the supplier has failed to deliver or dispatch within the time stipulated as aforesaid or if the same were not available, the best and the nearest available substitute therefore. Supplier shall be liable for any loss which the purchaser may sustain by reason for such risk purchases in addition to penalty.	
f. Guarantee Period: The complete system shall be guaranteed for 18 months of trouble free performance from the date of shipment or 12 months from commissioning date whichever is earlier. In case of any failure or trouble reported from site, the supplier shall depute their representative immediately to attend the problem and replace the defective components/parts, free of cost.	
g. Performance Bank Guarantee: Vendor should provide a performance bank guarantee (PBG) in BHEL format for 10% of the total Purchase order value valid for warranty/guarantee period with an additional claim period of 2 months. PBG should be issued from list of consortium banks.	
h. Delivery period: Delivery period should be within 24 weeks from date of PO	
i. Inspection: Material should be inspected by IBR approved inspection agency, NTPC and BHEL	
DOCUMENTATION: Following documents should be part of tender for evaluation, failure to submit this details for evaluation, you offer will be technically rejected	
1. IBR forms certificate confirmation	
2. GA drawing and datasheets for valves and HPU	
3. Bill of material for all items.	
4. End User Performance certificate and credentials.	
5. Annexure 4B- Schedule of deviation	

Signature and seal of vendor

SCHEDULE OF DEVIATIONS

Enq Ref:

Offer Ref:

Date:

Commercial Deviation:

Annexure / Clause No.	Description	Supplier Deviation

Technical Deviation:

Annexure / Clause No.	Description	Supplier Deviation

We confirm acceptance of all the Technical and Commercial requirements as per BHEL Tender, except the above deviations.

Signature with Seal

(TO BE STAMPED IN ACCORDANCE WITH STAMP ACT AND THE EXPIRY DATE OF BG MUST BE AFTER 60 DAYS FROM THE DATE OF COMPLETION OF WARRANTY PERIOD)

PERFORMANCE BANK GUARANTEE

In accordance of M/s. Bharat Heavy Electricals Limited (A Government of India undertaking, a company incorporated under the Companies Act 1956 having its Registered Office at "BHEL House", SIRI Fort, New Delhi 110 049) through its High Pressure Boiler Plant Division located at Tiruverumbur, Tiruchirapalli- 620 014 (hereinafter called 'the Company') having entered into a contract withhereinafter called ' the said contractor ' which term includes 'suppliers' for the purpose of this Bond and under the terms and conditions of the contract No..... Dt Between BHEL, Trichy and as per the contract, the contractor / supplier is to furnish a performance Bank guarantee for Rs. for the due performance of the equipment to be supplied under the above referred contract and for the fulfillment of all the terms and conditions of the contract, We(indicate the name of the bank) (herein after referred to as the bank) at the request of (Contractor(s)) do here by undertake to pay the company an amount not exceeding Rs.....against any loss or damage caused to or suffered or would be caused to or suffered by the company by reason of any breach by the said contractor (s) of any of the terms and conditions contained in the said agreement.

2. We(indicate the name of the bank with full address), do hereby undertake to pay the amounts due and payable under this guarantee without any demur, merely on a demand from the Company stating that the amount claimed is due by way of loss or damage caused to or would be caused to or suffered by the Company by reason of breach by the said Contractor(s) of any of the terms and conditions contained in the said Agreement or by the reason of the contractor(s) 'failure to perform' the said agreement. Any such demand made on the Bank shall be conclusive as regards the amount due and payable by the Bank under this guarantee. However, our liability under this guarantee shall be restricted to an amount not exceeding Rs._____.

3. We undertake to pay unconditionally to the Company any money so demanded notwithstanding any dispute(s) raised by the Contractor in any suit, or proceedings pending before any Court or Tribunal or Arbitration or before any other authority relating thereto our liability under this present being absolute and unequivocal. The payment under this guarantee would not wait till the disputes have been decided by any Court or Tribunal or in the arbitration proceedings or by any other authority. The payment so made by us under this Bond shall be a valid discharge of liability for payment thereunder and the Contractor(s) shall have no claim against us for making such payment.

4. We.....(indicate the name of Bank), further agree that the guarantee herein contained shall remain in full force and effect during the period that would be taken for the performance of the said Agreement and that it shall continue to be enforceable till all the dues of the Company under or by virtue of the said Agreement have been fully paid and its claims satisfied or discharged or till _____ Office / Department/ Division of the Company certifies that the terms and conditions of the said Agreement have been fully and properly carried out by the said Contractor(s) and accordingly discharges this guarantee.

5. (I) Unless a demand or claim under this guarantee is made on us in writing on or before the _____ we shall be discharged from all the liability under this guarantee thereafter. But where such claim or demand has been preferred by the Company with the Bank before the expiry of the said date, the claim shall be enforceable notwithstanding the fact that the said enforcement is effected after the said date.

(ii) For the purpose of this clause, any letter making demand on the Bank by M/s. BHEL dispatched by Registered Post with Ack.Due or by Telegram or by any Electronic media addressed to the above mentioned address of the Bank shall be deemed to be the claim / demand in writing referred to above irrespective of the fact as to whether and when the said letter reaches the Bank, as also any letter containing the said demand or claim is lodged with the bank personally.

6. We(indicate the name of Bank), further agree with the company that the Company shall have the fullest liberty without our consent and without affecting in any manner our obligations hereunder to vary any of the terms and conditions of the said agreement or to extend time of performance by the said Contractor (s) from time to time or to postpone for any time or from time to time any of the powers exercisable by the Company against the said Contractor(s) and to forbear or enforce any of the terms and conditions relating to the said Agreement and we shall not be relieved from our liability by any reason of any such variation or extension being granted to the said Contractor(s) or for any forbearance, act or omission on the part of the company or any indulgence by the company to the said Contractor(s) or by any such matter or thing whatsoever which under the law relating would, but for this provision, have effect of not so relieving us.

7. This guarantee will not be discharged due to the change in the constitution of the Bank or the Contractor(s).

8. It shall not be necessary for the company to proceed against the contractor before proceeding against the guarantor-bank and the guarantee herein contained shall be enforceable against them notwithstanding any security, which the company may have obtained or obtain from the Contractor shall, at the time when proceedings are taken against the guarantor hereunder be outstanding or unrealised.

9. Any claim or dispute arising under the terms of this document shall only be enforced or settled in the Courts at Tiruchirapalli.

10. The guarantor hereby declare that it has power to execute this guarantee and the executant has full powers to do so on its behalf under the proper authorities granted to him/them by the guarantor.

11. We(indicate the name of Bank) lastly undertake not to revoke this guarantee during its currency except with the previous consent of the company in writing.

In witness whereof we....., (indicate the name of Bank) have hereunto setout Bank Seal the _____ day _____ month 200

BANK E-MAIL ID:
BANK PHONE NO.
BANK FAX NO:

