



BHARAT HEAVY ELECTRICALS LIMITED

(A Government of India Undertaking)
HIGH PRESSURE BOILER PLANT
PURCHASE DEPARTMENT / VALVES
THIRUCHIRAPALLI - 620014
TAMILNADU (INDIA)

Page : 1
PHONE :91-431-2577305
GRAMS : BHARATELEC
FAX NO: 91-431-2520383
E-mail : valpur@bheltry.co.in
WEB : http://mm.bheltry.co.in

Vendor Code : 23505 Vendor Name : M/S Open Tender Dummy Code	Enquiry No EN-SOF1777	Enquiry Date 27.02.2016	Due Date for Quotation 26.03.2016
Please quote Enquiry No, Date and due date in all correspondences. This is only a request for quotation and not an order			

Item	Description	Unit	Delivery Quantity	Schedule Date
SUPPLY OF FOLLWOING ACTUATORS AS PER THE DETAILS				
10	974643270000 BONNET W / HYD. ACT. ASSY. 3, FF-4K44 SPC:-SPEC/OF/086/00	NO	2.00	30.06.16
20	974649780000 PIS. TYP. PNE. ACT. F/3- 1/16" 10M, 3, FF SPC:-SPEC/OF/093/00	NO	2.00	30.06.16
30	974649800000 PIS. TYP. PNE. ACT. F/4-1/16" 5M, 3, FF SPC:-SPEC/OF/094/00	NO	4.00	30.06.16
40	974649860000 PIS TYPE HYD. ACT. F/5-1/8"-5M, 3, FF-4L58 SPC:-SPEC/OF/096/00	NO	8.00	30.06.16
50	974649980000 PIS. TYP. PNE. ACT. F/5-1/8" 5M, 3, FF SPC:-SPEC/OF/098/01	NO	8.00	30.06.16
60	974694610000 PIS. TYP. HYD. ACT. F/2-1/16" 5M, 3, FF SPC:-SPEC/OF/103/00	NO	8.00	30.06.16

The offers should reach us before the time of opening the tenders. The offers will be opened at 14.30 hours on the due date in the presence of the tenderers who may like to be present . Late tenders are liable to be rejected .	<p style="text-align: right;">Yours faithfully, For BHARAT HEAVY ELECTRICALS LIMITED</p> <p style="text-align: center;">MANAGER / PURCHASE / VALVES</p>
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BHARAT HEAVY ELECTRICALS LIMITED

Page : 2



434-003

(A Government of India Undertaking)
HIGH PRESSURE BOILER PLANT
PURCHASE DEPARTMENT / VALVES
THIRUCHIRAPALLI - 620014
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PHONE :91-431-2577305
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EN-SOF1777 / 27.02.2016

23505

General Note:

1. Offers are invited in Two Part Bid
(Techno-Commercial Bid & Price Bid)
2. Purchase Specs and Terms & condition of enquiry enclosed.
3. Any deviation from purchase Specs should be clearly indicated in the offer, otherwise it will be construed that your offer is complying with BHEL requirement.
4. Delivery Period: 10 weeks from the date of Purchase order.
5. The terms and conditions shall be strictly as per our enquiry.

Special Notes :-

1. Valid API certificates should be submitted along with techno-commercial offer.
2. Quality plan to be submitted along with the offer for BHEL approval.
3. If any type of welding involved in actuator, Welding Procedure Specification (WPS) to be submitted for BHEL approval.

The bidder along with its associate/ collaborators/ sub-contractors/sub-vendors/ consultants/ service providers shall strictly adhere to BHEL fraud prevention policy displayed on BHEL website <http://www.bhel.com> and shall immediately bring to the notice of BHEL management about any fraud or suspected fraud as soon as it comes to their notice.

The offers should reach us before the time of opening the tenders.
The offers will be opened at 14.30 hours on the due date in the presence of the tenderers who may like to be present .
Late tenders are liable to be rejected .

Yours faithfully,
For BHARAT HEAVY ELECTRICALS LIMITED

MANAGER / PURCHASE / VALVES



BHARAT HEAVY ELECTRICALS LTD

Annexure-1

VALVES PURCHASE
Trichy - 620 014. India
TERMS AND CONDITIONS

Phone: 0431 2577802

Email: ramnath@bheltry.co.in

1. QUOTATIONS:

- a. **Submission of Tender:** Each offer should be sent in double cover separately and the same should be sealed and super scribed with correct Tender No., item of supply and due date of opening. Two or more quotations should not be sent in one cover. Price Bid should contain only Price in Rs per unit for each type. Tender should not be addressed to any individual's name but only by designation as below:
- The Tender Opening Cell / Valves
Room No. -26, Building -24
Bharat Heavy Electricals Limited
Tiruchirappalli - 620014, Tamilnadu, India
Or
Email ID: tender_cell@bheltry.co.in
- b. **Late tenders:** Late tenders shall not be considered under any circumstance.
- c. **Regulations:** Tender should be accompanied by detailed technical literature, Catalogue and detailed dimensional drawings in ENGLISH. 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. **Two Bid Systems:** If tender calls for two part bid system (Techno commercial & price Bid). First the Techno Commercial bid will be opened. Techno-commercially suitable vendors alone will be intimated for price bid opening or Reverse Auction.
- e. **PVC:** Price Variation clause not acceptable. Prices should be firm.
- f. **Catalogue:** Manufacturer's name, Trade Mark or Patent No. if any should be specified. Illustrative leaflets giving technical particulars are required along with quotation wherever necessary.
- g. **Acceptance:** The purchaser shall be under no obligation to accept the lowest or any other tender and shall be entitled to accept or reject any tender in part or full without assigning any reason whatsoever.
- h. **Samples:** Samples should be submitted separately if specially requested in tender before due date of the enquiry. They should be clearly marked with the enquiry No and date on the outside cover to facilitate identification.
- i. **Spares:** The tenderer should quote separately for spares that are required for two years trouble free operation. The spares offer should accompany the offer of main equipment; otherwise the quotation will be overlooked.

2. COMMERCIAL TERMS & CONDITIONS:

- a. **Terms of Payment:**
For Indigenous Suppliers: 100% after 45 days on satisfactory receipts and acceptance of material at BHEL stores/ Site acknowledgement. Offers with payment term as LC and advance payment will be rejected. Any deviation in the above payment term will attract loading as "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 Suppliers: 100% payment on CAD basis after 45 days from the date of receipt of documents, specified in PO, at BHEL bank. Respective bank charges to respective account. Any deviation in the above payment term will attract loading as "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.
- b. **Liquidated Damage** Liquidated damages shall be 0.5% of the total order value per week or part thereof subject to a maximum of 10% of the total order value.
For staggered delivery schedule, LD shall be 0.5% of the undelivered portion per week of the delay or part thereof subject to a maximum of 10% of the total order 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).
- c. **Delivery Terms:**
For Indigenous Suppliers: FOR BHEL Trichy/FOR site as mentioned in enquiry inclusive of freight and insurance.
For Import Suppliers: FOB nearest SEA Port/FCA nearest AIR port.
- d. **Validity of Offer:** Prices should be valid for 06 months from the date of opening of this tender.
- e. **Duties and Taxes:** If any Sales Tax is payable as extra to the quoted price, it 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. **Guarantee Clause:** The vendor shall give a guarantee for the performance of his supplies for a period of eighteen months from the date of dispatch or twelve months from the date of commissioning whichever is earlier.
- g. **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 at the rate mentioned in clause 2 b above.
- h. **Preferential Delivery:** If a contract is placed on a higher tender as a result of this invitation to tender in preference to the lowest acceptable offer in consideration of the earliest delivery, the seller will be liable to pay to the purchaser the difference between the contract rate and that of the lowest acceptable tender on the basis of final price FOR destination, including all elements of freight, sales tax, duties and other incidents, incidental in case of failure to complete supplies in terms of such contract within the date of delivery specified in the tender and incorporated in the contract.



BHARAT HEAVY ELECTRICALS LTD

Annexure-1

VALVES PURCHASE Trichy - 620 014. India TERMS AND CONDITIONS

Phone: 0431 2577802

Email: ramnath@bheltry.co.in

- i. **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 tender is availing MODVAT credit for his input materials, the effect of proforma invoice should be passed on to the purchaser.
- j. **Miscellaneous:** Any Other 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 in by Purchaser will not be applicable to the contract.
- k. **Delivery:** Delivery schedule shall be strictly as per BHEL tender requirement which are as indicated against each item in our tender. If supplier offers more than this delivery period BHEL will operate 0.5% loading factor for evaluation of their offer for every week delay.
- l. **Performance Bank Guarantee:** If tender Calls for Performance Bank Guarantee, Vendor should provide a performance bank guarantee (PBG) for 10% of the total Purchase order value valid for warranty/guarantee period with an additional claim period of 2 months.
- m. **Counter offer:** BHEL reserves the right to counter-offer with vendors other than L1, in order to have broader vendor base for ensuring delivery.
 - (i) If one vendor alone accepting the counter offer rates, loading shall be 60:40 on L1:L2.
 - (ii) If two vendors are accepting the counter offer rates, loading shall be 50:30:20 on L1:L2:L3.
 - (iii) If three vendors are accepting the counter offer rates, loading shall be 40:30:20:10 on L1:L2:L3 & L4.
 - (iv) If four vendors are accepting the counter offer rates, loading shall be 40:20:15:15:10 on L1:L2:L3 , L4 & L5.
 - (v) Highest rate bidder will not be considered for this tender, in case of more than two responses for each enquiry serial numbers.
- n. **Special Provisions for Micro and Small Enterprises (MSE):**
 - i. 20% of the tendered quantity is earmarked for MSE suppliers in this tender.
 - ii. Out of the 20% tendered quantity reserved for MSE suppliers, 4% shall be earmarked for procurement from MSE owned by SC/ST entrepreneurs.
 - iii. In case MSE vendor participating in the tender quotes within the price band of LI +15%, they will be allowed to supply the portion of the requirement subject to acceptance of LI price by MSE vendor. In case of more than one such MSE, the supply shall be shared proportionately.
 - iv. MSE suppliers can avail the intended benefits only if they submit along with offer, attested copies of either EM II certificate having deemed validity (Two years from the date of issue of acknowledgement in EM II) or valid NSIC certificate or EM II certificate along with CA certificate applicable for the year, certifying quantum of investment in plant and machinery within the permissible limit as per the act for relevant status (Micro or small) where the deemed validity of EM II is over. Date to be reckoned for determining the deemed validity will be the last date of technical bid submission. Non submission of such documents will lead to consideration of their bids at par with other bidders and MSE status of such suppliers shall be shifted to Non MSE supplier till the supplier submits these documents.
- o. **Reverse Auction:** BHEL reserves the right to go for a Reverse Auction (RA) instead of Opening the price bid, which will be decided after techno-commercial bid evaluation. Information and general terms and conditions governing RA are given below:-
GENERAL TERMS AND CONDITIONS OF RA

Against this enquiry for the subject item/system with detailed scope of supply as per enquiry specifications, BHEL may resort to "REVERSE AUCTION PROCEDURE" i.e., ON LINE BIDDING ON INTERNET.

 - i. For the proposed reverse auction, technically and commercially acceptable bidders only shall be eligible to participate.
 - ii. BHEL will engage the service provider who will provide all the necessary training and assistance before commencement of on line bidding on internet.
 - iii. BHEL will inform the vendor in writing in case of reverse auction, the details of Service Provider to enable them to contact & get trained.
 - iv. Business rules like event date, time, Start price, bid decrement value; extensions etc. also will be communicated through service provider for compliance.
 - v. Vendors have to mail/fax the Compliance form in the prescribed format (provided by the Service provider) before the start of the Reverse auction. Without this, the vendor will not be eligible to participate in the event.
 - vi. BHEL will provide the calculation sheet (e.g., EXCEL sheet) which will help to arrive at "Total Cost to BHEL" like Packing & forwarding charges, Taxes and Duties, Freight charges, Insurance, Service Tax for Services and loading factors (for non-compliance to BHEL standard Commercial terms & conditions) for each of the vendor to enable them to fill-in the price and keep it ready for keying in during the Auction.
 - vii. Reverse auction will be conducted on the scheduled date & time.
 - viii. At the end of Reverse Auction event, the lowest bidder value will be known on the network.
 - ix. The lowest bidder has to mail/fax the duly signed Filled-in prescribed format as provided on case-to-case basis to BHEL through Service provider within 24 hours of Auction without fail.
 - x. Any variation between the on-line bid value and the signed document will be considered as sabotaging the tender process and will invite disqualification of vendor to conduct business with BHEL as per prevailing procedure.

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. Purchase Order, PO Item SI No, Material code, Quantity should marked the Packing clearly.
- g. Confirmation for compliance is to be given in the offer for all the conditions specified above and to the respective Purchase Specification.
- h. Documents submitted with the offer shall be signed and stamped in each page by authorized representative of the bidder.



BHARAT HEAVY ELECTRICALS LTD

Annexure-1

VALVES PURCHASE
Trichy - 620 014. India
TERMS AND CONDITIONS

Phone: 0431 2577802

Email: ramnath@bheltry.co.in

4. DOCUMENTATION:

For Indigenous suppliers:-

- With Consignment:** Duplicate for transporter copy of Invoice, Packing List, Delivery Challan, O&M manual Material Test Certificate, Test Certificates, Calibration Report, Compliance Certificate & Guarantee/Warranty Certificate etc...
- To Finance:** Original and Duplicate Invoice for payment with GR reference, should be sent directly to

**Sr Manager/Finance/Valves-Bills section
HPBP BHEL Tiruchirappalli-620014, Tamilnadu.**

To Purchase:

- FOR BHEL TRICHY case-**Copy of Invoice, Packing list, LWB and Delivery challan for reference, original IBR documents/Inspection despatch clearance certificates.
- FOR Site case-** Original Excise Invoice, Original LWB, Original Packing List, Original IBR documents, Original despatch clearance Certificate, Original Inspection report, Test certificates as per PO, Original Site Acknowledgment etc...
- Identification:**, Purchase Order, PO item SI No, Material code, quantity, Unique SI No if any should be provided in all despatch documents, materials and packing clearly.

For Import suppliers:-

- With Consignment:** O&M manual and Packing List, Fumigation certificates (In case of SEA shipment).
- Through Bank:** All Original Documents in Triplicate Bill of lading in case of SEA/Airway Bill in case of AIR consignment, the invoice indicating the Unit price & total price, Packing List contains quantity, net & gross weight, Packing dimensions, Certificate of Origin, all Inspection test certificates, Guarantee/warranty certificates are to be sent through supplier's bankers to BHEL bankers
- To Purchase:** One copy of above non-negotiable documents are to be sent to purchase department after dispatch of the materials to follow up with freight forwarder.
- Identification:**, Purchase Order, PO item SI No, Material code, quantity, Unique SI No if any should be provided in all materials and packing clearly.

5. TENDER EVALUATION:

PART I (Techno-commercial Bid).

- All Vendors should submit supply record, end user certificate and PO reference, catalogue etc.
- Vendor who are not registered in BHEL Trichy, Product Material Directory (PMD) should register online in <https://www.bheltry.co.in/olsa/> and should submit copy of online registration form with part I bid.
- BHEL reserves right to visit vendor works before registration for verification of facilities.
- Vendor who doesn't have manufacturing capacity/capabilities/credentials will be rejected.
- 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.
- Item quote should be submitted in the BHEL format, annexure-3B
- Offers from supplier not having technical capability or not agreed for commercial terms, will be rejected

PART II (Price Bid).

- Bidders qualified for part I will be intimated for participating in priced bid opening/Reverse Auction.
- L1 bidder will be decided based on landed cost for the item to BHEL.
- Price Bid should be in BHEL format, Annexure 3C.
- For evaluation, the exchange rate shall be taken as TT selling rate of SBI on date of Part-1 bid opening.

6. FRAUD PREVENTION POLICY:-

The bidder along with its associate/collaborators/sub-contractors/sub-vendors/consultants/service providers shall strictly adhere to BHEL fraud prevention policy displayed on BHEL website <http://www.bhel.com> and shall immediately bring to the notice of the BHEL management about any fraud or suspected fraud as soon as it comes to their notice.

SCHEDULE OF DEVIATIONS

Enq Ref: EN-SOF1777

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



Bharat Heavy Electricals Ltd.

Annexure 3A-Indegeniouss

Valves Purchase
Trichy - 620 014. India

Phone : 0431-257 7802

E-mail: ramnath@bheltry.co.in

BHEL Enquiry No.EN-SOF1777

Sl No	<u>BHEL COMMERCIAL TERMS AND CONDITIONS for INDIGENOUS SUPPLIES</u>	Vendor's Confirmation
1	Vendor should give confirmation to BHEL's Technical Specification. Any deviations from the specification are to be furnished separately as "Schedule of Deviation". If there is no deviation vendor should indicate "No Deviation".	
2	Vendor to indicate Quoted/Not Quoted item wise as per the format (Annexure 3B) enclosed.	
3	Prices shall be quoted item wise only as per the format (Annexure 3C) enclosed.	
4	Prices shall be quoted on " FIRM PRICE " basis only. The prices should be only on FOR BHEL basis inclusive of Packing & Forwarding charges if any.	
5	Validity of offer shall be for a minimum period of 6 Months from the date of Tender opening	
6	Delivery period from the date of Purchase order shall be clearly mentioned in the offer.	
7	Liquidated damages @ ½% per week subject to a maximum of 10% of the total order value shall be applicable for delay in deliveries.	
8	Following Risk Purchase clause shall be applicable: The Purchaser at his option will be entitled to terminate the contract and to purchase elsewhere at the risk and cost of the seller either the whole of the goods or any part which the supplier has failed to deliver or dispatch within the time stipulated or if the same were not available, the best and the nearest available substitute therefore. The supplier shall be liable for any loss which the Purchaser may sustain by reason of such risk purchases.	
9	Payment terms for indigenous vendor: 100% after 45 days on acceptance of material at BHEL stores	
10	Excise duty, sales tax and other levies (if any) shall be indicated as extra in the offer.	
11	Any replacement/repair work during warranty period shall be done free of cost on FOR Site basis/destination specified by BHEL. (Offer without acceptance of same may be rejected)	
12	The equipment shall be guaranteed for a period of 12 months from the date of commissioning or 18 months from the supply, whichever is earlier.	
13	The vendor shall provide necessary drawings, Test Certificates and Operating Maintenance Manuals as called for in the Technical Specification, in the required number of copies at no extra cost.	

NOTE:-

- It is confirmed that all the terms and conditions stipulated in the Enquiry have been fully understood by us and all clarifications & details have been obtained.
- The prices are to be offered only on FOR BHEL Trichy basis, inclusive of Packing & Forwarding charges if any.

Signature & Office Seal of the vendor



Bharat Heavy Electricals Ltd.

Annexure 3A-Import

Valves Purchase
Trichy - 620 014. India

Phone : 0431-257 7802

Email: ramnath@bheltry.co.in

BHEL Enquiry No. EN-SOF1777

Sl No	BHEL COMMERCIAL TERMS AND CONDITIONS for FOREIGN SUPPLIES	Vendor's Confirmation
1	Vendor should give confirmation to BHEL's Technical Specification. Any deviations from the specification are to be furnished separately as "Schedule of Deviation". If there is no deviation vendor should indicate "No Deviation".	
2	Vendor to indicate Quoted/Not Quoted item wise as per the format (Annexure 3B) enclosed.	
3	Prices shall be quoted item wise only as per the format (Annexure 3C) enclosed.	
4	Prices shall be quoted on " FIRM PRICE " basis only. The prices should be only on FOB basis inclusive of Packing & Forwarding charges if any.	
5	Validity of offer shall be for a minimum period of 6 Months from the date of Tender opening	
6	Delivery period from the date of Purchase order shall be clearly mentioned in the offer.	
7	Liquidated damages @ ½% per week subject to a maximum of 10% of the total order value shall be applicable for delay in deliveries.	
8	Following Risk Purchase clause shall be applicable: The Purchaser at his option will be entitled to terminate the contract and to purchase elsewhere at the risk and cost of the seller either the whole of the goods or any part which the supplier has failed to deliver or dispatch within the time stipulated or if the same were not available, the best and the nearest available substitute therefore. The supplier shall be liable for any loss which the Purchaser may sustain by reason of such risk purchases.	
9	Payment terms for Foreign vendor (Principal): 100% payment on CAD basis after 45 days from the date of receipt of documents, at BHEL bank specified in PO. Respective bank charges to respective account.	
10	All bank charges outside India are to be in vendor's account only.	
11	In case of any short shipment in the main equipment / spares, where separate rates are not available in the contract, the customs duty levied on such supplies, shall be borne by the supplier.	
12	Any replacement/repair work during warranty period shall be done free of cost on FOR Site basis/destination specified by BHEL. (Offer without acceptance of same may be rejected)	
13	The equipment shall be guaranteed for a period of 12 months from the date of commissioning or 18 months from the supply, whichever is earlier.	
14	The vendor shall provide necessary drawings, Test Certificates and Operating Maintenance Manuals as called for in the Technical Specification, in the required number of copies at no extra cost.	

NOTE:-

- It is confirmed that all the terms and conditions stipulated in the Enquiry have been fully understood by us and all clarifications & details have been obtained.
- The prices are to be offered only on FOB basis, inclusive of Packing & Forwarding charges if any.

Signature & Office Seal of the vendor



Bharat Heavy Electricals Ltd.

Annexure 3A-Indegeniouss

Valves Purchase
Trichy - 620 014. India

Phone : 0431-257 7802

E-mail: ramnath@bheltry.co.in

BHEL Enquiry No.EN-SOF1777

Sl No	<u>BHEL COMMERCIAL TERMS AND CONDITIONS for INDIGENOUS SUPPLIES</u>	Vendor's Confirmation
1	Vendor should give confirmation to BHEL's Technical Specification. Any deviations from the specification are to be furnished separately as "Schedule of Deviation". If there is no deviation vendor should indicate "No Deviation".	
2	Vendor to indicate Quoted/Not Quoted item wise as per the format (Annexure 3B) enclosed.	
3	Prices shall be quoted item wise only as per the format (Annexure 3C) enclosed.	
4	Prices shall be quoted on " FIRM PRICE " basis only. The prices should be only on FOR BHEL basis inclusive of Packing & Forwarding charges if any.	
5	Validity of offer shall be for a minimum period of 6 Months from the date of Tender opening	
6	Delivery period from the date of Purchase order shall be clearly mentioned in the offer.	
7	Liquidated damages @ ½% per week subject to a maximum of 10% of the total order value shall be applicable for delay in deliveries.	
8	Following Risk Purchase clause shall be applicable: The Purchaser at his option will be entitled to terminate the contract and to purchase elsewhere at the risk and cost of the seller either the whole of the goods or any part which the supplier has failed to deliver or dispatch within the time stipulated or if the same were not available, the best and the nearest available substitute therefore. The supplier shall be liable for any loss which the Purchaser may sustain by reason of such risk purchases.	
9	Payment terms for indigenous vendor: 100% after 45 days on acceptance of material at BHEL stores	
10	Excise duty, sales tax and other levies (if any) shall be indicated as extra in the offer.	
11	Any replacement/repair work during warranty period shall be done free of cost on FOR Site basis/destination specified by BHEL. (Offer without acceptance of same may be rejected)	
12	The equipment shall be guaranteed for a period of 12 months from the date of commissioning or 18 months from the supply, whichever is earlier.	
13	The vendor shall provide necessary drawings, Test Certificates and Operating Maintenance Manuals as called for in the Technical Specification, in the required number of copies at no extra cost.	

NOTE:-

- It is confirmed that all the terms and conditions stipulated in the Enquiry have been fully understood by us and all clarifications & details have been obtained.
- The prices are to be offered only on FOR BHEL Trichy basis, inclusive of Packing & Forwarding charges if any.

Signature & Office Seal of the vendor

						Annexure-3B-Import
BHEL Enquiry No. & Date			Vendor's Offer Ref No. & Date			
MODEL UNPRICE BID FORMAT FOR IMPORT VENDORS						
Currency						
Enq Sl No.	Material Code	Matl Description	Unit	Qty	Unit Weight (In Kgs)	Unit Price in Currency
1	974643270000	BONNET W / HYD. ACT. ASSY.3,FF-4K44	Nos	2		Quoted/Not Quoted
2	974649780000	PIS.TYP.PNE.ACT.F/3-1/16"10M,3,FF	Nos	2		Quoted/Not Quoted
3	974649800000	PIS.TYP.PNE.ACT.F/4-1/16" 5M,3,FF	Nos	4		Quoted/Not Quoted
4	974649860000	PIS TYPE HYD.ACT.F/5-1/8"-5M,3,FF-4L58	Nos	8		Quoted/Not Quoted
5	974649980000	PIS.TYP.PNE.ACT.F/5-1/8" 5M,3,FF	Nos	8		Quoted/Not Quoted
6	974694610000	PIS.TYP.HYD.ACT.F/2-1/16" 5M,3,FF	Nos	8		Quoted/Not Quoted
FOB Charges, if extra						Quoted/Not Quoted
FOB Value in Currency						Quoted/Not Quoted
Delivery Period from the date of PO						
Validity of offer						
Consignment Package Details						
Approximate Net / Gross Weight in Kgs						
Dimension of Consignment						
Signature & Seal of Vendor						
NOTE:						
The Unpriced Bid should be submitted strictly in line with the above FORMAT						

						Annexure-3B - Indigenous supplier	
Format for Unpriced Bid--Indigenous suppliers							
BHEL Enquiry No. & Date			Vendor's Offer Ref No. & Date				
Enq SI No.	Material Code	Description	Unit	Qty	Unit Weight (In Kgs)	Unit Price in INR	Value in INR
1	974643270000	BONNET W / HYD. ACT. ASSY.3,FF-4K44	Nos	2		Quoted/Not Quoted	Quoted/Not Quoted
2	974649780000	PIS.TYP.PNE.ACT.F/3-1/16"10M,3,FF	Nos	2		Quoted/Not Quoted	Quoted/Not Quoted
3	974649800000	PIS.TYP.PNE.ACT.F/4-1/16" 5M,3,FF	Nos	4		Quoted/Not Quoted	Quoted/Not Quoted
4	974649860000	PIS TYPE HYD.ACT.F/5-1/8"-5M,3,FF-4L58	Nos	8		Quoted/Not Quoted	Quoted/Not Quoted
5	974649980000	PIS.TYP.PNE.ACT.F/5-1/8" 5M,3,FF	Nos	8		Quoted/Not Quoted	Quoted/Not Quoted
6	974694610000	PIS.TYP.HYD.ACT.F/2-1/16" 5M,3,FF	Nos	8		Quoted/Not Quoted	Quoted/Not Quoted
Total Value in Rs							
Packing & Forwarding Charges, if extra							
Excise Duty							
CST/VAT							
Freight Charges, if extra							
Transit Insurance Charges, if extra							
Delivery Period from the date of PO							
Validity of offer							
Consignment Package Details							
Approximate Net / Gross Weight in Kgs							
Dimension of Consignment							
NOTE:							
The Unprice Bid should be submitted strictly in line with the above FORMAT							
						Signature & Seal of Vendor	

						Annexure-3C-Import
BHEL Enquiry No. & Date			Vendor's Offer Ref No. & Date			
MODEL PRICE BID FORMAT FOR IMPORT VENDORS						
Currency						
Enq Sl No.	Material Code	Matl Description	Unit	Qty	Unit Weight (In Kgs)	Unit Price in Currency
1	974643270000	BONNET W / HYD. ACT. ASSY.3,FF-4K44	Nos	2		
2	974649780000	PIS.TYP.PNE.ACT.F/3-1/16"10M,3,FF	Nos	2		
3	974649800000	PIS.TYP.PNE.ACT.F/4-1/16" 5M,3,FF	Nos	4		
4	974649860000	PIS TYPE HYD.ACT.F/5-1/8"-5M,3,FF-4L58	Nos	8		
5	974649980000	PIS.TYP.PNE.ACT.F/5-1/8" 5M,3,FF	Nos	8		
6	974694610000	PIS.TYP.HYD.ACT.F/2-1/16" 5M,3,FF	Nos	8		
FOB Charges, if extra						
FOB Value in Currency						
Delivery Period from the date of PO						
Validity of offer						
Consignment Package Details						
Approximate Net / Gross Weight in Kgs						
Dimension of Consignment						
Signature & Seal of Vendor						
NOTE:						
The Price Bid should be submitted strictly in line with the above FORMAT						


							Annexure-3C - Indigenous supplier
Format for Price Bid--Indigenous suppliers							
BHEL Enquiry No. & Date				Vendor's Offer Ref No. & Date			
Enq SI No.	Material Code	Description	Unit	Qty	Unit Weight (In Kgs)	Unit Price in INR	Value in INR
1	974643270000	BONNET W / HYD. ACT. ASSY.3,FF-4K44	Nos	2			
2	974649780000	PIS.TYP.PNE.ACT.F/3-1/16"10M,3,FF	Nos	2			
3	974649800000	PIS.TYP.PNE.ACT.F/4-1/16" 5M,3,FF	Nos	4			
4	974649860000	PIS TYPE HYD.ACT.F/5-1/8"-5M,3,FF-4L58	Nos	8			
5	974649980000	PIS.TYP.PNE.ACT.F/5-1/8" 5M,3,FF	Nos	8			
6	974694610000	PIS.TYP.HYD.ACT.F/2-1/16" 5M,3,FF	Nos	8			
Total Value in Rs							
Packing & Forwarding Charges if extra							
Excise Duty							
CST/VAT							
Freight Charges if extra							
Transit Insurance Charges if extra							
Validity of offer							
Consignment Package Details							
Approximate Net / Gross Weight in Kgs							
Dimension of Consignment							
NOTE:							
The Price Bid should be submitted strictly in line with the above FORMAT							
							Signature & Seal of Vendor

SPEC. No.	REV.
SPEC:OF:086	00

PISTON TYPE ACTUATOR FOR API 6A SURFACE SAFETY VALVE (SSV)
MATERIAL CODE: 97 464 327

SL.No.	PARAMETER	DETAILS
01.	Type of Actuator	Hydraulic
02.	Feature	Fail safe closed suitable for reverse acting gate valve
03.	Operating Pressure	3000 PSI SUPPLIER TO PROVIDE CALCULATIONS TO ENSURE THAT OFFERED ACTUATOR MEETS REQUIREMENTS OF SPECIFIED PRESSURE & GATE DRAG / FRICTION VALUES.
05.	Bonnet Interface Details	As per attached drawing OFE: REC: 449
06.	Actuator Performance Requirement	As per section 10.16.2 of API 6A 17 th edition / the latest edition
07.	Specification for Bonnet Assembly	
a)	PRODUCT SPECIFICATION LEVEL (PSL)	3
b)	MATERIAL CLASS	FF
c)	TEMPERATURE RATING	U (0 – 250°F)
d)	PERFORMANCE REQUIREMENT LEVEL	PR – 2
e)	Service Condition	Offshore oil field (H ₂ S service)
08.	Actuator suitable for M/s Kvaerner National 3-1/16"-10000 PSI Full Bore through conduit Gate Valve	
09.	Material Requirements	
a)	Bonnet	Forged Stainless Steel. SS-410
b)	Stem	17-4 PH /SS-410 with molybdenum disulphide coating
10.	Painting	Suitable for offshore marine environment
11.	ACTUATOR DESIGN FEATURES: -	
a)	Metal to metal Stem Backseat Seal between Bonnet and Stem.	
b)	Actuator is to be provided with suitable MANUAL OVERRIDE SYSTEM	
c)	Supplier should provide suitable Stem Protector during despatch.	
12	TECHNICAL REQUIREMENTS: -	
a)	Design, materials, quality, manufacture, assembly, testing and equipment marking to be strictly as per the requirements of section 10.20 of API 6A 17 th edition and is to be monogrammed and API Q1 certified.	
b)	The manufacturer of offered item should have relevant API Q1, API 6A valid Certificates in his name. The copy of the certificates indicating the validity period should be submitted along with the bid. The certificates should remain valid till the completion of the delivery against the Purchase Order.	


REF.No: SPEC086

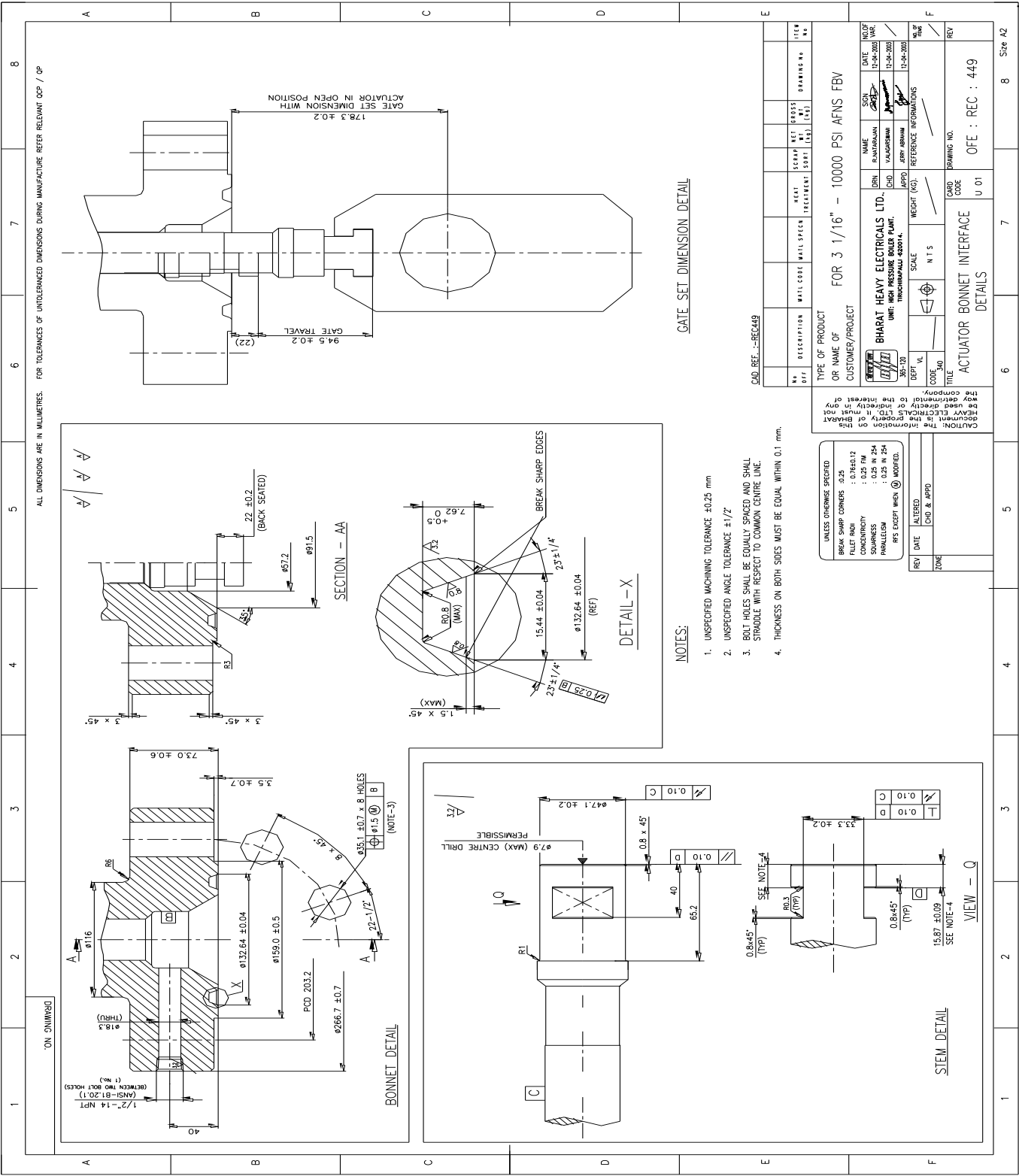
 <p>BHARAT HEAVY ELECTRICALS LTD. TIRUCHIRAPALLI 620014.</p>				PREPARED	T.RAJARAMAN	<i>T.Rajaraman</i>
				REVIEWED & APPROVED	R.ELAYARAJA	<i>R.Elaiyara</i>
				DATE	27.05.2000	

SPEC. No.	REV.
SPEC:OF:086	00

SL.No.	DESCRIPTION
13.	Following documents are to be provided while submitting offer:
a)	Operating and Maintenance Manuals as per Section 10.20.7.2 of API 6A, Catalogue and Technical Literature.
b)	Overall dimensions of the Actuator and Assembly weight.
c)	Blown up drawing of Actuator with bill of material and parts listing.
d)	Reference List of customers.
14.	Following documents are to be provided after order placement along with supply:
a)	Operating and Maintenance Manuals as per Section 10.20.7.2 of API 6A.
b)	SSV functional test data sheet as per Table 10.49 of API 6A
c)	Shipping Report as per Table 10.50 of API 6A.
d)	Caution : Supplier is requested to detail out deviations from this Specification while submitting the offer. If no deviation is indicated, it is presumed that supplier satisfies this Specification requirements in toto.
e)	<p>This SSV shall be used as secondary HIPPS valve, For SIL-3 calculation for the complete HIPPS system, the following reliability / failure data for the wing SSV shall be provided by the manufacturer/supplier:</p> <p>1- For each device or sub system:</p> <ul style="list-style-type: none"> a) Hardware fault tolerance-HFT-as per Table 2 &3 of 61508, part 2. a) Safe failure Fraction-SFF. b) Mean time to repair-MTTR- What value has been used in each of the calculations. c) Probability of failure on demand-PFD (or PFDavg). d) Probability of failure to danger per hour-PFH. e) Fail safe failure detected-λ_{sd}. f) Fail safe failure undetected --λ_{su}. g) Fail to Danger detected--λ_{dd} (action needs to be taken to go to fail safe state. h) Fail to danger undetected-λ_{du}. i) Test interval used for calculation. <p>2. Swept volume of the SSV (to act as Secondary HIPPS valve) Hydraulic actuator.</p> <p>3. Operating Hydraulic pressure shall be 3000 psi for the SSV.</p> <p>4. The closing time of the Hydraulic SSV.</p>

REF.No: SPEC086

 <p>BHARAT HEAVY ELECTRICALS LTD. TIRUCHIRAPALLI 620014.</p>				PREPARED	T.RAJARAMAN	<i>T.Rajaraman</i>
				REVIEWED & APPROVED	R.ELAYARAJA	<i>R.Elajaraja</i>
				DATE	11.03.2008	



GATE SET DIMENSION DETAIL

DETAIL - X

- NOTES:
- UNSPECIFIED MACHINING TOLERANCE ± 0.25 mm
 - UNSPECIFIED ANGLE TOLERANCE $\pm 1/2^\circ$
 - BOLT HOLES SHALL BE EQUALLY SPACED AND SHALL STRADDLE WITH RESPECT TO COMMON CENTRE LINE.
 - THICKNESS ON BOTH SIDES MUST BE EQUAL WITHIN 0.1 mm.

UNLESS OTHERWISE SPECIFIED:
 BREAK SHARP CORNERS : 0.25
 FILLER RADI : 0.75 & 1.2
 CONCENTRICITY : 0.25 IN 254
 SQUARENESS : 0.25 IN 254
 PARALLELISM : 0.25 IN 254
 FINISH : 320 EXCEPT MICH. @ MODIFIED.

NO.	REV.	DESCRIPTION	MATERIAL SPEC.	HEAT TREATMENT	REVISION	DATE

CAD. REF. :- REC449

TYPE OF PRODUCT OR NAME OF CUSTOMER/PROJECT: FOR 3 1/16" - 10000 PSI AFNS FBV

NAME	DATE	NO. OF
DRN. RAVINDRAN	12-04-2003	
CHKD. VALADHARAN	12-04-2003	
APPRD. JERRY ABHINAV	12-04-2003	

UNIT: HIGH PRESSURE BOILER PLANT, TIRUCHIRAPALLI 620014.

SCALE: N.T.S.

DEPT. NO. 305-120

CONC. 340

REV. DATE ALTERED: CHD & APPD.

ZONE

CARD CODE U 01

DRAWING NO. OFF : REC : 449

ACTUATOR BONNET INTERFACE DETAILS

CAUTION: The information on this drawing is the property of Bharat Heavy Electricals Ltd. It is to be used directly or indirectly in any form by any person in the interest of the company.

REF.No: SPEC086




BHARAT HEAVY ELECTRICALS LTD.
 TIRUCHIRAPALLI 620014.

PREPARED	T.RAJARAMAN	<i>T.Rajaraman</i>
REVIEWED & APPROVED	R.ELAYARAJA	<i>R.Elajaraja</i>
DATE	11.03.2008	

SPEC. No.	REV.
SPEC:OF:093	01

PISTON TYPE ACTUATOR FOR API 6A SURFACE SAFETY VALVE (SSV)
MATERIAL CODE: 97 464 978 0000

SL.No.	PARAMETER	DETAILS
01.	Type of Actuator	Pneumatic (Piston and Cylinder Type)
02.	Feature	Fail safe closed suitable for reverse acting gate valve
03.	Actuating medium	Pneumatic dry produced gas with 2% CO ₂
04.	Operating Pressure	90 TO 120 PSI 120 PSI Actuator control pressure should open the valve at 4000 PSI differential pressure. SUPPLIER TO PROVIDE CALCULATIONS TO ENSURE THAT OFFERED ACTUATOR MEETS REQUIREMENTS OF SPECIFIED PRESSURE & GATE DRAG / FRICTION VALUES.
05.	Bonnet Interface Details	As per attached drawing OFE: REC: 746
06.	Actuator Performance Requirement	As per section 10.16 of API 6A,latest edition
07.	Specification for Bonnet Assembly	
a)	PRODUCT SPECIFICATION LEVEL (PSL)	3
b)	MATERIAL CLASS	FF
c)	TEMPERATURE RATING	U (0 – 250°F)
d)	PERFORMANCE REQUIREMENT LEVEL	PR – 2
e)	Service Condition	Offshore oil field (H ₂ S service)
08.	Actuator suitable for M/s Kvaerner National 3-1/16"-10000 PSI Full Bore through conduit Gate Valve	
09.	Material Requirements	
a)	Bonnet	AISI 410 Forged Stainless steel
b)	Stem	17-4 PH /SS-410 with molybdenum disulphide coating
c)	All Resilient Seals	Aflas / Rytan / Kalrez / Teflon
d)	All studs and nut	To be Nickel plated by Electrolysis Nickel Plating (Niklad 1000 or equivalent) process
10.	Painting	Suitable for offshore marine environment
11.	ACTUATOR DESIGN FEATURES: -	
a)	Metal to metal Stem Backseat Seal between Bonnet and Stem.	
b)	Actuator is to be provided with suitable MANUAL OVERRIDE SYSTEM	
c)	Supplier should provide suitable Stem Protector during despatch.	
12	TECHNICAL REQUIREMENTS: -	
a)	Design, materials, quality, manufacture, assembly, testing and equipment marking to be strictly as per the requirements of API 6A and is to be monogrammed and API Q1 certified.	
b)	The manufacturer of offered item should have relevant API Q1, API 6A valid Certificates in his name. The copy of the certificates indicating the validity period should be submitted along with the bid. The certificates should remain valid till the completion of the delivery against the Purchase Order.	

	BHARAT HEAVY ELECTRICALS LTD. TIRUCHIRAPALLI 620014.	REV.	PRE	RN	DATE	PREPARED	T.RAJARAMAN	<i>Rajaraman</i>
		ZONE	APPD	RE	04.05.2011	REVIEWED & APPROVED	R.ELAYARAJA	<i>Elayaraja</i>
						DATE	21.08.2010	

SPEC. No.	REV.
SPEC:OF:093	01

SL.No.	DESCRIPTION
13.	Following documents are to be provided while submitting offer:
a)	Operating and Maintenance Manuals as per API 6A, Catalogue and Technical Literature.
b)	Overall dimensions of the Actuator and Assembly weight.
c)	Blown up drawing of Actuator with bill of material and parts listing.
d)	Reference List of customers.
14.	Following documents are to be provided after order placement along with supply:
a)	Operating and Maintenance Manuals as per API 6A.
b)	SSV functional test data sheet as per Table 83 of API 6A
c)	Shipping Report as per API 6A.

REDRESS KIT FOR ACTUATOR MATERIAL CODE: 97 464 979 0000

1.	Redress kit for actuator should consist of the following items: -
a)	All Resilient seals
b)	Piston rings with back up rings
c)	Stem
d)	Stem packing
e)	Any other item which the supplier consider as operational spares.
2.	Supplier to indicate the part number of the individual spare items while submitting the offer.
3.	Caution: Supplier is requested to detail out the deviations from this specification while submitting the offer. If no deviation is indicated, it is presumed that supplier satisfies this specification requirements in toto.



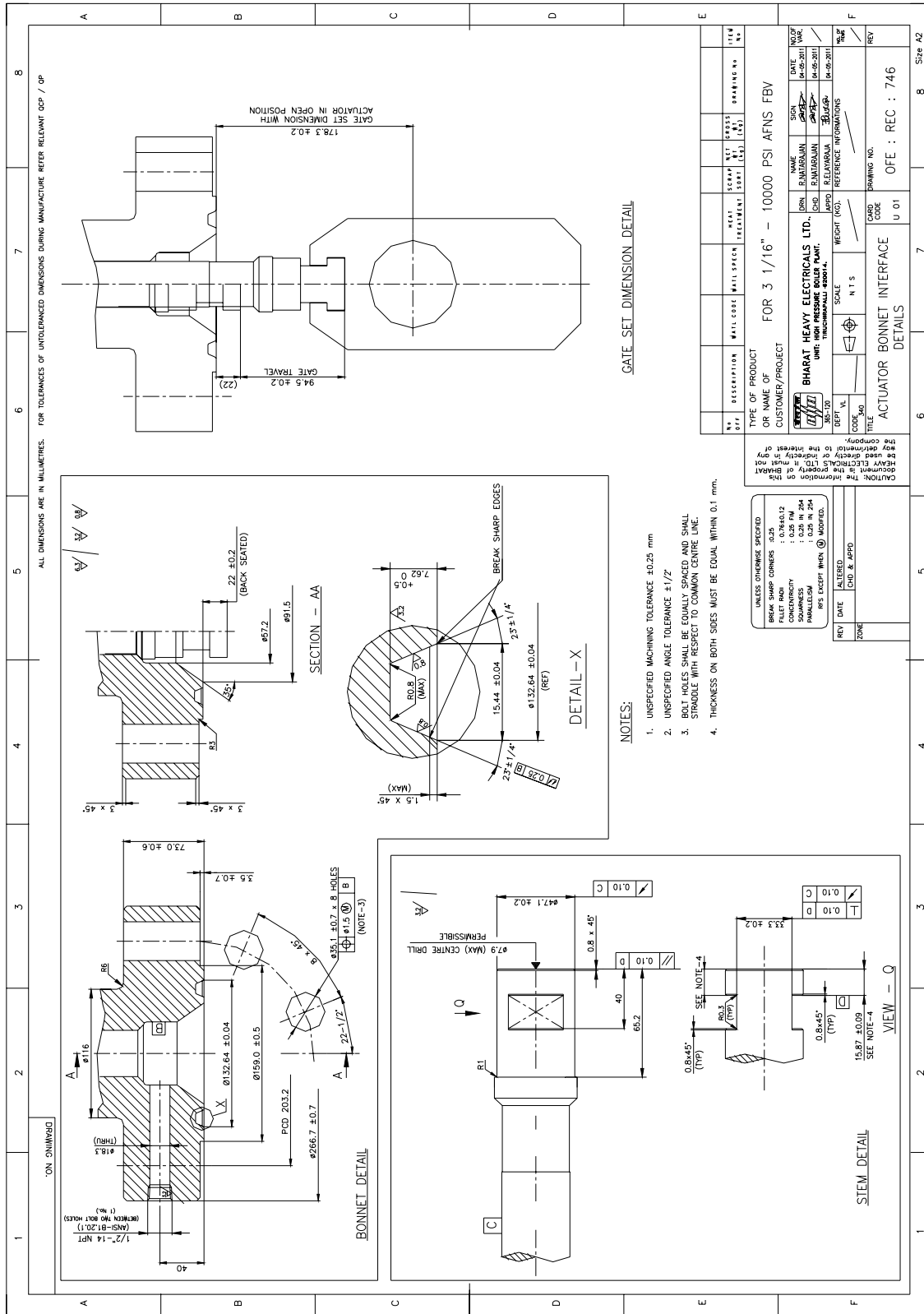
BHARAT HEAVY ELECTRICALS LTD.

TIRUCHIRAPALLI 620014.

REV.	PRE	RN	DATE	PREPARED	T.RAJARAMAN	<i>T.Rajaraman</i>
01	APPD	RE	04.05.2011			
ZONE				REVIEWED & APPROVED	R.ELAYARAJA	<i>R.Elaiyara</i>
				DATE	21.08.2010	

CAUTION: The information on this document is the property of BHARAT HEAVY ELECTRICALS LTD. It must not be used directly or indirectly in any way detrimental to the interest of the company.

SPEC. No.	REV.
SPEC:OF:093	01



GATE SET DIMENSION DETAIL

NOTES:

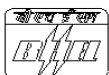
1. UNSPECIFIED MACHINING TOLERANCE ±0.25 mm
2. UNSPECIFIED ANGLE TOLERANCE ±1/2°
3. BOLT HOLES SHALL BE EQUALLY SPACED AND SHALL STRADDLE WITH RESPECT TO COMMON CENTRE LINE.
4. THICKNESS ON BOTH SIDES MUST BE EQUAL WITHIN 0.1 mm.

NO.	DESCRIPTION	DATE	BY	CHKD	APPD	SCALE	REV
1	FOR 3 1/16" - 10000 PSI AFMS FBV						

TYPE OF PRODUCT	OR NAME OF CUSTOMER/PROJECT	DATE	BY	CHKD	APPD	SCALE	REV
FOR 3 1/16" - 10000 PSI AFMS FBV	BHARAT HEAVY ELECTRICALS LTD. CHD. RAJARAMAN	04-05-2011	R. RAJARAMAN			N T S	

DEPT. NO.	SCALE	WEIGHT (KG)	REFERENCE INFORMATION
305-120	N T S		

REV	DATE	BY	CHKD	APPD



BHARAT HEAVY ELECTRICALS LTD.


TIRUCHIRAPALLI 620014.

REV.	PRE	RN	DATE	PREPARED	T. RAJARAMAN	<i>T. Rajaraman</i>
01	APPD	RE	04.05.2011	REVIEWED & APPROVED	R. ELAYARAJA	<i>R. Elayaraja</i>
ZONE				DATE	21.08.2010	

SPEC. No.	REV.
SPEC:OF:094	00

PISTON TYPE ACTUATOR FOR API 6A SURFACE SAFETY VALVE (SSV)
MATERIAL CODE: 97 464 980 0000

SL.No.	PARAMETER	DETAILS
01.	Type of Actuator	Pneumatic (Piston and Cylinder Type)
02.	Feature	Fail safe closed suitable for reverse acting gate valve
03.	Actuating medium	Pneumatic dry produced gas with 2% CO ₂
04.	Operating Pressure	90 TO 120 PSI 120 PSI Actuator control pressure should open the valve at 4000 PSI differential pressure. SUPPLIER TO PROVIDE CALCULATIONS TO ENSURE THAT OFFERED ACTUATOR MEETS REQUIREMENTS OF SPECIFIED PRESSURE & GATE DRAG / FRICTION VALUES.
05.	Bonnet Interface Details	As per Kvaerner (National) drawing H412055- AI Revision D
06.	Actuator Performance Requirement	As per section 10.16 of API 6A,latest edition
07.	Specification for Bonnet Assembly	
a)	PRODUCT SPECIFICATION LEVEL (PSL)	3
b)	MATERIAL CLASS	FF
c)	TEMPERATURE RATING	U (0 – 250°F)
d)	PERFORMANCE REQUIREMENT LEVEL	PR – 2
e)	Service Condition	Offshore oil field (H ₂ S service)
08.	Actuator suitable for M/s Kvaerner National 4-1/16"-5000 PSI Full Bore through conduit Gate Valve	
09.	Material Requirements	
a)	Bonnet	AISI 410 Forged Stainless steel
b)	Stem	17-4 PH /SS-410 with molybdenum disulphide coating
c)	All Resilient Seals	Aflas / Ryton / Kalrez / Teflon
d)	All studs and nut	To be Nickel plated by Electrolysis Nickel Plating (Niklad 1000 or equivalent) process
10.	Painting	Suitable for offshore marine environment
11.	ACTUATOR DESIGN FEATURES: -	
a)	Metal to metal Stem Backseat Seal between Bonnet and Stem.	
b)	Actuator is to be provided with suitable MANUAL OVERRIDE SYSTEM	
c)	Supplier should provide suitable Stem Protector during despatch.	
12	TECHNICAL REQUIREMENTS: -	
a)	Design, materials, quality, manufacture, assembly, testing and equipment marking to be strictly as per the requirements of API 6A and is to be monogrammed and API Q1 certified.	
b)	The manufacturer of offered item should have relevant API Q1, API 6A valid Certificates in his name. The copy of the certificates indicating the validity period should be submitted along with the bid. The certificates should remain valid till the completion of the delivery against the Purchase Order.	


	BHARAT HEAVY ELECTRICALS LTD. TIRUCHIRAPALLI 620014.	REV.	PRE	DATE	PREPARED	T.RAJARAMAN	<i>Rajaraman</i>
		ZONE	APPD		REVIEWED & APPROVED	R.ELAYARAJA	<i>Elayaraja</i>
					DATE	21.08.2010	

SPEC. No.	REV.
SPEC:OF:094	00

SL.No.	DESCRIPTION
13.	Following documents are to be provided while submitting offer:
a)	Operating and Maintenance Manuals as per API 6A, Catalogue and Technical Literature.
b)	Overall dimensions of the Actuator and Assembly weight.
c)	Blown up drawing of Actuator with bill of material and parts listing.
d)	Reference List of customers.
14.	Following documents are to be provided after order placement along with supply:
a)	Operating and Maintenance Manuals as per API 6A.
b)	SSV functional test data sheet as per Table 83 of API 6A
c)	Shipping Report as per API 6A.

REDRESS KIT FOR ACTUATOR MATERIAL CODE: 97 464 981 0000

1.	Redress kit for actuator should consist of the following items: -
a)	All Resilient seals
b)	Piston rings with back up rings
c)	Stem
d)	Stem packing
e)	Any other item which the supplier consider as operational spares.
2.	Supplier to indicate the part number of the individual spare items while submitting the offer.
3.	Caution: Supplier is requested to detail out the deviations from this specification while submitting the offer. If no deviation is indicated, it is presumed that supplier satisfies this specification requirements in toto.


 <p>BHARAT HEAVY ELECTRICALS LTD. TIRUCHIRAPALLI 620014.</p>	REV.	PRE	DATE	PREPARED	T.RAJARAMAN	<i>T.Rajaraman</i>
	ZONE	APPD			REVIEWED & APPROVED	R.ELAYARAJA
				DATE	21.08.2010	

SPEC. No.	REV.
SPEC:OF:096	00

PISTON TYPE ACTUATOR FOR API 6A SURFACE SAFETY VALVE (SSV)
MATERIAL CODE: 97 464 986

SL.No.	PARAMETER	DETAILS
01.	Type of Actuator	Hydraulic
02.	Feature	Fail safe closed suitable for reverse acting gate valve
03.	Operating Pressure	1500 PSI SUPPLIER TO PROVIDE CALCULATIONS TO ENSURE THAT OFFERED ACTUATOR MEETS REQUIREMENTS OF SPECIFIED PRESSURE & GATE DRAG / FRICTION VALUES.
05.	Bonnet Interface Details	As per Kvaerner (National) drawing H412205-A1 Revision C
06.	Actuator Performance Requirement	As per section 10.16.2 of API 6A ,the latest edition
07.	Specification for Bonnet Assembly	
a)	PRODUCT SPECIFICATION LEVEL (PSL)	3
b)	MATERIAL CLASS	FF
c)	TEMPERATURE RATING	U (0 – 250°F)
d)	PERFORMANCE REQUIREMENT LEVEL	PR – 2
e)	Service Condition	Offshore oil field (H ₂ S service)
08.	Actuator suitable for M/s Kvaerner National 5-1/8"-5000 PSI Full Bore through conduit Gate Valve	
09.	Material Requirements	
a)	Bonnet	Forged Stainless Steel. SS-410
b)	Stem	17-4 PH /SS-410 with molybdenum disulphide coating
10.	Painting	Suitable for offshore marine environment
11.	ACTUATOR DESIGN FEATURES: -	
a)	Metal to metal Stem Backseat Seal between Bonnet and Stem.	
b)	Actuator is to be provided with suitable MANUAL OVERRIDE SYSTEM	
c)	Supplier should provide suitable Stem Protector during despatch.	
12	TECHNICAL REQUIREMENTS: -	
a)	Design, materials, quality, manufacture, assembly, testing and equipment marking to be strictly as per the requirements of API 6A ,the latest edition and is to be monogrammed and API Q1 certified.	
b)	The manufacturer of offered item should have relevant API Q1, API 6A valid Certificates in his name. The copy of the certificates indicating the validity period should be submitted along with the bid. The certificates should remain valid till the completion of the delivery against the Purchase Order.	

REF.No: SPEC096

 <p>BHARAT HEAVY ELECTRICALS LTD. TIRUCHIRAPALLI 620014.</p>				PREPARED	T.RAJARAMAN	<i>T.Rajaraman</i>
				REVIEWED & APPROVED	R.ELAYARAJA	<i>R.Elaiyara</i>
				DATE	08-03-2011	

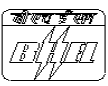
SPEC. No.	REV.
SPEC:OF:096	00

SL.No.	DESCRIPTION
13.	Following documents are to be provided while submitting offer:
a)	Operating and Maintenance Manuals as per Section 10.20.7.2 of API 6A, Catalogue and Technical Literature.
b)	Overall dimensions of the Actuator and Assembly weight.
c)	Blown up drawing of Actuator with bill of material and parts listing.
d)	Reference List of customers.
14.	Following documents are to be provided after order placement along with supply:
a)	Operating and Maintenance Manuals as per Section 10.20.7.2 of API 6A.
b)	SSV functional test data sheet as per Table 83 of API 6A
c)	Shipping Report as per API 6A.
d)	Caution : Supplier is requested to detail out deviations from this Specification while submitting the offer. If no deviation is indicated, it is presumed that supplier satisfies this Specification requirements in tutto.

REDRESS KIT FOR ACTUATOR MATERIAL CODE: 97 464 987

1.	Redress kit for actuator should consist of the following items: -
a)	All Resilient seals
b)	Piston rings with back up rings
c)	Stem
d)	Stem packing
e)	Any other item which the supplier consider as operational spares.
2.	Supplier to indicate the part number of the individual spare items while submitting the offer.
3.	Caution: Supplier is requested to detail out the deviations from this specification while submitting the offer. If no deviation is indicated, it is presumed that supplier satisfies this specification requirements in tutto.

REF.No: SPEC096

 <p>BHARAT HEAVY ELECTRICALS LTD. TIRUCHIRAPALLI 620014.</p>				PREPARED	T.RAJARAMAN	<i>T.Rajaraman</i>
				REVIEWED & APPROVED	R.ELAYARAJA	<i>R.Elajaraja</i>
				DATE	08-03-2011	



365-147

PE/ VALVES
BHEL/TRICHY-14

TECHNICAL SPECIFICATION
FOR
PISTON TYPE ACTUATOR F/ SSV

PISTON TYPE ACTUATOR FOR API 6A SURFACE SAFETY VALVE (SSV)

MATL. CODE: 97 464 998 0000

SL.No.	PARAMETER	DETAILS
01.	Type of Actuator	Pneumatic (Piston and Cylinder Type)
02.	Feature	Fail safe closed suitable for reverse acting gate valve
03.	Actuating medium	Pneumatic dry produced gas with 2% CO ₂
04.	Operating Pressure 120 PSI Actuator control pressure should open the valve at 4000 PSI differential pressure. SUPPLIER TO PROVIDE CALCULATIONS TO ENSURE THAT OFFERED ACTUATOR MEETS REQUIREMENTS OF SPECIFIED PRESSURE & GATE DRAG / FRICTION VALUES.	90 TO 120 PSI
05.	Bonnet Interface Details.	As per Kvaerner (National) drawing H412205-AI Revision C
06.	Actuator Performance Requirements	As per section 10.16 of API 6A, latest edition
07.	Specification for bonnet assembly	
a)	PRODUCT SPECIFICATION LEVEL (PSL)	3
b)	MATERIAL CLASS	FF
c)	TEMPERATURE RATING	U (0-250°F)
d)	PERFORMANCE REQUIREMENT LEVEL	PR-2
e)	Service condition	Offshore Oil filed (H ₂ S service)
08.	Actuator suitable for M/s Kvaerner National 5-1/8"-5000 PSI Full Bore through conduit Gate Valve	
09.	Material Requirements	
a)	Bonnet	AISI 4130 Forged Alloy steel
b)	Stem	17-4 PH/SS-410 with molybdenum disulphide coating
c)	All Resilient Seals	Aflas / Ryton / Kalrez / Teflon
d)	All studs and nut	To be Nickel plated by Electrolysis Nickel Plating (Niklad 1000 or equivalent) Process
10.	Painting	Suitable for offshore marine environment
11.	ACTUATOR DESIGN FEATURES :-	
a)	Metal to Metal Stem Backseat Seal between Bonnet and stem.	

Revision	Date	Altered	Chd & Appd	Revision	Date	Altered	Chd&Appd	Sheet 1 of 2
				01	10.11.2014	A.K.P.	R.E.R.	
Prepared	T.RAJARAMAN		Chd & Appd	R.ELAYARAJA				SPEC:OF:098
Date	08.08.2012		Date	08.08.2012				



365-147

PE/ VALVES
BHEL/TRICHY-14

TECHNICAL SPECIFICATION
FOR
PISTON TYPE ACTUATOR F/ SSV

b)	Actuator is to be provided with suitable MANUAL OVERRIDE SYSTEM
c)	Supplier should provide suitable Stem Protector during despatch.
12	TECHNICAL REQUIREMENTS
a)	Design, material, quality, manufacture, assembly, testing and equipment marking to be strictly as per the requirements of API 6A and is to be monogrammed and API Q1 certified.
b)	The manufacture of offered item should have relevant API Q1, API 6A valid certificates in his name. The copy of the certificates indicating the validity period should be submitted along with the bid. The certificates should remain valid till the completion of the delivery against the purchase order

SL.No.	DESCRIPTION
13.	Following documents are to be provided while submitting offer:
a)	Operating and Maintenance Manual as per API 6A, Catalogue and Technical Literature.
b)	Overall dimensions of the Actuator and Assembly weight.
c)	Blown up drawing of Actuator with bill of material and parts listing.
d)	Reference List of customers.
14.	Following documents are to be provided after order placements along with supply :
a)	Operating and Maintenance Manuals as per API 6A.
b)	SSV functional test data sheet as per Table 83 of API 6A
c)	Shipping Report as per API 6A.

REDRESS KIT FOR ACTUATOR MATERIAL CODE: 97 465 018 0000

1.	Redress kit for actuator should consist of the following items :-
a)	All Resilient seals
b)	Piston ring with back up rings
c)	Stem
d)	Stem packing
e)	Any other items which the supplier consider as operational spares.
2.	Supplier to indicate the part number of the individual spare items while submitting the offer.
3.	Caution: Supplier is requested to detail out the deviations from this specification while submitting the offer. If no deviation is indicated, it is presumed that supplier satisfies this specification requirements in toto.


Revision	Date	Altered	Chd & Appd	Revision	Date	Altered	Chd&Appd	Sheet 2 of 2
				01	10.11.2014	A.K.P.	R.E.R.	
Prepared	T.RAJARAMAN		Chd & Appd	R.ELAYARAJA				SPEC:OF:098
Date	08.08.2012		Date	08.08.2012				

SPEC. No.	REV.
SPEC:OF:103	00

PISTON TYPE ACTUATOR FOR API 6A SURFACE SAFETY VALVE (SSV)
MATERIAL CODE: 97 469 461 0000

SL.No.	PARAMETER	DETAILS
01.	Type of Actuator	Hydraulic
02.	Feature	Fail safe closed suitable for reverse acting gate valve
03.	Operating Pressure	3000 PSI SUPPLIER TO PROVIDE CALCULATIONS TO ENSURE THAT OFFERED ACTUATOR MEETS REQUIREMENTS OF SPECIFIED PRESSURE & GATE DRAG / FRICTION VALUES.
05.	Bonnet Interface Details	As per Kvaerner (National) drawing H412100-AI Revision D
06.	Actuator Performance Requirement	As per API 6A Latest Rev
07.	Specification for Bonnet Assembly	
a)	PRODUCT SPECIFICATION LEVEL (PSL)	3
b)	MATERIAL CLASS	FF
c)	TEMPERATURE RATING	U (0 – 250°F)
d)	PERFORMANCE REQUIREMENT LEVEL	PR – 2
e)	Service Condition	Offshore oil field (H ₂ S service)
08.	Actuator suitable for M/s Kvaerner National/BHEL 2-1/16"-5000 PSI Full Bore through conduit Gate Valve	
09.	Material Requirements	
a)	Bonnet	Forged Stainless Steel. SS-410
b)	Stem	17-4 PH /SS-410 with molybdenum disulphide coating
10.	Painting	Suitable for offshore marine environment
11.	ACTUATOR DESIGN FEATURES: -	
a)	Metal to metal Stem Backseat Seal between Bonnet and Stem.	
b)	Actuator is to be provided with suitable MANUAL OVERRIDE SYSTEM	
c)	Supplier should provide suitable Stem Protector during despatch.	
12	TECHNICAL REQUIREMENTS: -	
a)	Design, materials, quality, manufacture, assembly, testing and equipment marking to be strictly as per the requirements of API 6A Latest Edition and is to be monogrammed and API Q1 certified.	
b)	The manufacturer of offered item should have relevant API Q1, API 6A valid Certificates in his name. The copy of the certificates indicating the validity period should be submitted along with the bid. The certificates should remain valid till the completion of the delivery against the Purchase Order.	

REF.No: SPEC103


 <p>BHARAT HEAVY ELECTRICALS LTD. TIRUCHIRAPALLI 620014.</p>				PREPARED	R.NATARAJAN	<i>R. Natarajan</i>
				REVIEWED & APPROVED	R.ELAYARAJA	<i>R. Elayaraja</i>
				DATE	11/12/2015	

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SPEC. No.	REV.
SPEC:OF:086	00

SL.No.	DESCRIPTION
13.	Following documents are to be provided while submitting offer:
a)	Operating and Maintenance Manuals as per API 6A, Catalogue and Technical Literature.
b)	Overall dimensions of the Actuator and Assembly weight.
c)	Blown up drawing of Actuator with bill of material and parts listing.
d)	Reference List of customers.
14.	Following documents are to be provided after order placement along with supply:
a)	Operating and Maintenance Manuals as per API 6A.
b)	SSV functional test data sheet as per API 6A
c)	Shipping Report as per API 6A.
d)	Caution : Supplier is requested to detail out deviations from this Specification while submitting the offer. If no deviation is indicated, it is presumed that supplier satisfies this Specification requirements in toto.

REF.No: SPEC103

 <p>BHARAT HEAVY ELECTRICALS LTD. TIRUCHIRAPALLI 620014.</p>				PREPARED	R.NATARAJAN	<i>R.Natarajan</i>
				REVIEWED & APPROVED	R.ELAYARAJA	<i>R.Elajaraja</i>
				DATE	11/12/2015	