

Domain :	bhel.abcprocure.com		
Parent department:	BHEL		
Unit name	:	BHEL Trichy	
Purchase group	:	FB Sub-Dely(Mech).	RFQ/NIT/Enquiry Officer : JIBY M J
Event ID	:	46276	RFQ/NIT/Enquiry no. : 1802000473
Enquiry Date	:	03/08/2020 05:30:00	
Tender Description	:	SOOT BLOWER PRESSURE REDUCING VALVE WITH ACCESSORIES FOR BHUSAWAL PROJECT	
Terms & Conditions	:	01) The Tender will be operated on TWO PART BID basis and you are requested to submit Techno-commercial bid and Price bids in E-procurement site. (Vendors who are not having DSC, shall obtain the same & quote accordingly). For details related to bidding through e-procurement website, please visit URL - https://bhel.abcprocure.com. Refer the following documents in the site - minimum system requirement & Bidder manual. Only bids submitted in our E-procurement website will be considered for evaluation, any other form of offer submission will not be entertained. 02) The materials are required for Bhusawal 1x660MW Project 03) Point wise confirmation to all our technical specifications & filled in datasheet and checklist shall be furnished along with the offer. Also, pls. furnish the weight & dimensional drawing along with the offer. A. Datasheet for SBPRV B. Technical Specification BM/CV SPEC: 001 Rev: 04 C. TDC: TCI: 317 / REV 06 D. CI:BHUSAWAL: ECI: CV Rev 01 F. Drg. 3-97-599-24099/02 G. Pneumatic hook up diagram 04) All filled up data sheets, drawings, calculations for Cv, Noise, Valve outlet velocity, Actuator sizing, Actuator wiring, vendor data sheets for Cv electrical actuator, Lift vs Cv %, hook up & JB diagram and catalogues are to be submitted along with the offer. Incomplete offer may lead to rejection of offer. 05) Please confirm the PQR (Annexure-B) along with the required documents and submit the filled in Annexure-A (applicable commercial terms and conditions) along with the techno- commercial bid for evaluation. 06) OFFERS NOT MEETING THE PQR WILL NOT BE CONSIDERED FOR FURTHER EVALUATION 07) The tender will be considered on total quantity/package basis for evaluation and ordering. 08) Delivery term: A. The quote shall be on FOR destination basis as mentioned in Annexure-A. Packing & forwarding, Freight to your account. Transit Insurance is in BHEL scope B. Ex-Works Contracts will not be entertained. 09) Vendor shall follow applicable painting schedule for this project. 10) While calculating the Quantity of Items for Commissioning spares, vendor shall round the number to the nearest higher whole number.	

- 11) Vendor to submit clear technical offer indicating the scope of supply for each items with BHEL material code and set details indicating applicable items with applicable description, Specification and quantity and also should clearly indicate not applicable items.
- 12) Offer will be evaluated on total cost to BHEL after all loadings as applicable.
- 13) Vendor offers will be considered for price bid opening subject to fulfilment of techno commercial suitability and vendor approval by BHEL and end customer
- 14) The offers of the bidders who are under suspension and also the offers of the bidders, who engage the services of the banned firms, shall be rejected. The list of banned firms is available on BHEL website www.bhel.com.
- 15) 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.
- 16) Bid should be free from correction, overwriting, using corrective fluid. etc. Any interlineation, cutting, erasure or overwriting shall be valid only if they are attested under full signature (s) of person(s) signing the bid.
- 17) The bidder has to keep track of any changes by viewing the addendum / Corrigendum's issued by the Purchaser on time-to- time basis in the E-Procurement platform. The Company calling for tenders shall not be responsible for any claims/problems arising out of this.
- 18) Before uploading scanned documents, the bidders shall sign on all the statements, documents, certificates uploaded by him, owning responsibility for their correctness / authenticity.
- 19) Disclaimer Clause: The Organization (Bharat Heavy Electricals Ltd.) nor the service provider (ABC procure.) is responsible for any failure of submission of bids due to failure of internet or other connectivity problems or reasons thereof.

For any queries regarding tender you may contact

1) Mr. Rajesh Kummar S B

SR. Engineer /MM/BOI

BHEL Trichy

0431-2574166

sbrajesh@bhel.in

2) Mr. Jiby M J

AE/MM/BOI

BHEL Trichy

0431-2574363

mjjiby@bhel.in

Product / service / work keywords	:	Control Valve,Valve,		
No. of Bid Parts	:	Multiple	Envelope	: Techno-commercial bid , Price bid
Type of contract	:	Goods	Project duration / delivery or completion period	: 24 weeks
Download document	:	Before login		

Delivery/Location At	:	Delivery Date	:	23/01/2021 05:30:00
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Bid submission configuration

Base currency	:	INR
Bidding type	:	NCB/Indigenous

Key configuration

Pre-bid meeting	:	Don't allow
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Dates configuration

Document downloading start date	:	05/08/2020 14:10:00	Document downloading end date	:	18/08/2020 14:00:00
Bid submission start date	:	05/08/2020 14:10:00	Bid submission end date	:	18/08/2020 14:00:00
Bid opening date	:	18/08/2020 14:10:00			

Document / EMD / Security fee detail

Document fees	:	Not required	EMD	:	Not required
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Bidding forms

Price Bid
Price Bid

Bid evaluation is on package basis. Offer shall be considered only if bidder quotes for all items except for mandatory spares items which may not be applicable for bidder design. For not applicable items bidder to clearly mention the reason in remarks column against each item. For mandatory spares, Bidder to indicate set details in remarks column.

ITEM CODE	Item Description	Qty	UOM
L172712182501001	SOOT BLOWER PR.REDUCING VALVE	1.00	NO
L172782198801001	GLAND PACKING FOR SBPRV	1.00	SET
L172782198801002	GASKET FOR SBPRV	1.00	SET
L1727S2182501001	STEM AND DISC ASSEMBLY	1.00	SET
L1727S2182501002	GASKETS	3.00	SET
L1727S2182501003	GLAND PACKINGS	2.00	SET
L1727S2182501004	SEAT RINGS	2.00	SET
L1727S2182501005	SBPRV	1.00	NO

Vendor shall fill the Not Applicable Fields as "0"

ADDITIONAL DETAILS

Item Name	Quantity
dummy	0

Vendor shall fill the Not Applicable Fields as "0"

Information for Online Participation

Bidder who wish to participate in this tender needs to procure Digital Certificate as per Information Technology Act-2000 using that they can digitally sign their electronic bids. Bidders can procure the same from any or the CCA approved certifying agencies, or they may contact e-Procurement Technologies Ltd. at below mentioned address and they will assist them in procuring the same. Bidders who already have a valid digital Certificate need not to procure the same. In case bidders need any clarification regarding online participation, they can contact,

e-Procurement Technologies Ltd.

Corporate Office:

Address : A-201/208, Wall Street - 2, Opp. Orient Club,
Nr. Gujarat College, Ellis Bridge,
Ahmedabad - 380006, Gujarat(INDIA)

Digital Certificate Contacts

Contact Person : Mr. Himalay Vaishnav

Cell : +91-9099090830

Phone Nos. : +91-9099090830

Fax No :

e-Mail : info@abcProcure.com

Support Team Contacts

Contact Person : BHEL Support Team Ahmedabad

Cell : +91-9265562819

Phone Nos. : +91-79-68136849/72/50/09/48

Fax No :

e-Mail : Bhel.Support@abcProcure.com

Bidder who wish to participate in e-Tender need to fill data in predefined forms of Price bid available in respective tender only. After filling data in predefined forms bidders need to click on final submission link to submit their encrypted bid. Bidder need to submit Document Fees, EMD & Reference Documents in hard copy if such instruction are given by tendering authority. As Per the new Inter-operability guidelines released by Controller of Certifying Authorities(CCA), the Secured Socket Layer(SSL) certificate for a e-procurement application is generated on a new algorithm, SHA2.

Also, the Digital Certificates that will be applicable for these platforms have to be SHA2 algorithm complaint. For the same, the users have to ensure that they have Windows XP(SP3)/Windows Vista/Windows7 installed in their respective PC/Laptop. In case of Windows XP Service pack - 3, if you get any issue you can install the SSL patch, which is available at our download section of our e-Tender/e-Auction Portal and also at our corporate website www.abcprocure.com just below the label of "Knowledge section".

Fraud Prevention

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.

Preference to Make in India

For this procurement, Public Procurement (Preference to Make in India), order 2017 dated 15.06.2017 & 28.05.2018 and subsequent orders issued by the respective Nodal ministry shall be applicable even if issued after issue of this NIT but before finalization of contract/PO/WO against this NIT. In the event of any Nodal Ministry prescribing higher or lower percentage of purchase preference and/ or local content in respect of this procurement, same shall be applicable. Default margin of purchase preference shall be 20% to local suppliers with default minimum local content of 50%.



An ISO 9001
Company

Bharat Heavy Electricals Limited
(High Pressure Boiler Plant)
Tiruchirappalli-620 014, Tamil Nadu, India
Dept: MATERIALS MANAGEMENT/BOI

Annexure – A- Terms and Conditions

ACCEPTANCE OF TECHNO - COMMERCIAL TERMS AND CONDITIONS BY THE BIDDERS

Description of the Equipment:	Soot Blower Pressure Reducing Valves along with Commissioning and	
Projects	Bhushawal 6 1x660MW Project	
BHEL Tender No. & Date	1802000473 dated 03.08.2020	
Name of the firm (Bidder)	:	
Address	:	
Contact details	<u>Contact person 1</u> Name: Designation: Office Phone: Mobile: e-mail: <u>Contact person 2</u> Name: Designation: Office Phone: Mobile: e-mail:	
<i>To be filled by bidder</i>		
Sl. No.	Terms and conditions	Vendor's confirmation
1 (a)	Technical: Supply of Soot Blower Pressure Reducing Valves for boiler application shall be as per the Specification attached with the enquiry. 1. Data sheets for SBPRV 2. Specification for SBPRV (BM/CV_SPEC: 001 3. Specification for SMART positioner 4. TB diagram (3-97-599-24099) for ref only 4. Pneumatic Hook up diagram	
1 (b)	Pre-qualification requirement: Offer shall be considered only if bidder is meeting Tender Prequalification requirement (Annexure-B). Vendor to comply with Pre-Qualification requirement of the tender and submit along with their technical bid - the credentials and other documents as indicated in the PQR in the format prescribed. Otherwise their offer may get rejected.	
1 (c)	Evaluation method Total requirement will be considered as a package for evaluation and ordering. Evaluation shall be on total cost to BHEL basis .	

1 (d)	Vendor shall quote as per attached price and Unpriced Schedule format only.	
1 (e)	Vendor offers will considered for price bid opening subject to fulfilment of techno commercial suitability and vendor approval by BHEL and end customer.	
1 (f)	Inspection by BHEL/ BHEL approved TPIA/Customer	
2 (a)	Firm Price: The quoted / finalised rates shall be Firm till execution of the supplies. Offer with PVC clause will not be considered.	
2 (b)	The Tender will be operated in two part bid system. One-part consisting of Technical bid with Commercial terms & conditions and other part is Price Bid. Based on the above and other conditions, as well as technical capability, vendors will be short-listed. The Techno-commercial bid will be opened on the due date and based on the suitability of techno-commercial bid, the price Bid of the techno-commercial suitable qualified vendors will be considered and opened on a suitable date with due intimation to vendors.	
3 (a)	Delivery term: The quote shall be on FOR destination basis as indicated below inclusive of Packing, forwarding, Freight also to yours account. - For Main supply and commissioning spares (RFQ Sl. No. 10 to 30):- FOR Bhushawal Project site. - For Mandatory spares (RFQ Sl. no. (40 to 800 :- FOR BHEL Trichy stores. - Transit Insurance is under BHEL scope @0.12%.	
4 (a)	Payment terms: For Main supply and commissioning spares: Payment term is 100% direct payment after 60 days from the date of dispatch against site acknowledgement and against 10% PBG valid for the warranty period. For Mandatory spares: Payment term is 100% direct EFT payment after 60 days from the date of receipt and acceptance of materials and against 10% PBG valid for the warranty period, wherever necessary.	
4 (c)	Payment Terms (New Suppliers) For new suppliers not registered with BHEL, Trichy for the product, Payment shall be made 60 days after receipt and acceptance of materials.	
4 (d)	Loading Criteria No deviation is permitted in payment term.	
4 (e)	Performance Bank Guarantee: BHEL require a performance Bank Guarantee to a value of 10% of supply valve covering the guarantee period. The PBG shall be in BHEL format (Format attached) which is to be opened in any one of the banks mentioned under List of Consortium Banks attachment. All banks charges shall be to vendor account only. Any deviation on PBG leads to rejection of offer.	

5 (a)	Liquidated damages: Delivery of the goods specified in the purchase order should be made within the time prescribed. Failure to dispatch the materials in the time as per the delivery quoted in our Purchase Order would make the supplier liable to an un-conditional LD at the rate of 0.5% of the total order value per week of the delay or part thereof subject to a maximum of 10% of the total order value. In case of PO placements, required documents have to be submitted for approval within 15 days from the date of PO & reply for any further clarification has to be within 7 days. Any delay beyond the above specified period will be considered during LD calculation.	
5 (b)	Loading Criteria: LD / Penalty: Any deviation on BHEL LD / Penalty clause, loading (Basic material Value) will be applied to the extent to which it is not agreed by the bidder.	
6 (a)	Guarantee / Warranty Period: Guarantee clause 24 months from the date of supply or 18 months from the date of actual put in use, whichever is earlier.	
6 (b)	Repair & replacements: Within the guarantee period vendor has to replace / rectify the defective/ damaged items on free of cost within a reasonable time of reporting from our end.	
6 (c)	Loading Criteria: Guarantee / Warranty Period: No Deviation is permitted. If still vendor offered any deviation on the Guarantee / warranty period, it may lead to rejection of offer.	
7 (a)	Taxes & Duties: All Taxes, Duties, Service Taxes etc. payable as extra to the quoted price should be specifically stated in offers along with CST & TIN No / Tariff No. etc., failing which the purchaser will not be liable for payment of such Taxes and Duties. Our TIN No. 33243560005, TNGST No. 3560005, CST. No. 239383 Dt. 11-06-1991 & BHEL ECC No. AAACB4146PXM012, Assessment circle Tiruverumbur. BHEL TRICHY Unit GST NO : 33AAACB4146P2ZL.	
7 (b)	Kindly indicate the GST No of your Firm	
7 (c)	Kindly Indicate the HSN Code for all items	
7 (d)	Please indicate the applicable GST % (IGST)	
8	Risk purchase: If the supplier fails to deliver the goods within the delivery specified in the Purchase Order, BHEL 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 despatch within the delivery period mentioned in the Purchase Order.	
9	Delivery Period: 24 weeks from the Documents approval by Customer /BHEL. CV	

	test report to be submitted for BHEL review and approval before final inspection.	
10	LR date will be considered for LD calculation.	
11	Documents are to be submitted along with technical bid (Part-1) 01. Covering letter 02. Unpriced offer. 03. Filled technical specification 04. Filled BHEL Terms and condition sheet (Annexure-A) 05. Filled Annexure-B PQR along with supporting documents. 06. Catalogue's 07. Detailed BOQ of the package. 08. Third party non-disclosure agreement 09. Self-Certification as per Make In India clause 10. MSE Certificates (if applicable) Documents are to be submitted along with Price bid (Part-2) 01. Priced offer Note: All the pages of documents are to be signed and stamped by authorized signatory of the company. Any query during enquiry stage shall be replied within three days failing which offer may be rejected as non-responsive.	
12	Offer Validity: 120 days minimum from techno commercial bid opening (Part-1)	
13	Inspection and testing requirements: Inspection and testing requirements are to be carried out as per the specification and BHEL/Customer approved Drawing (All documents shall be submitted within 15 days from the date of PO for our approval), Technical spec &QP and all test certificates are to be submitted in complete set. Inspection notice period: For TPI inspector visit to vendor works, a minimum of 3 working days' notice period.	
14	O & M manuals: BHEL require 1 sets of printed O & M manuals with 3 soft copies in CD-ROM at no cost to be sent to BHEL/ Trichy.	
15	Response to Tenders for Indigenous supplier will be entertained only if the vendor has a valid GST registration number which should clearly have mentioned in the offer. If any specific exemption is available, a declaration with due supporting documents need to be furnished for considering the offer.	
16	Supplier shall mention their GSTN registration number in all their invoices and invoices shall be in the format as specified/prescribed under GST laws. Invoices shall necessarily contain Invoice number (in case of multiple numbering system is being followed for billing like SAP invoice no, commercial invoice no etc., then the Invoice No which is linked/uploaded in GSTN network shall be clearly indicated), item description as per PO, Quantity, Rate, Value, applicable taxes with nomenclature (like IGST, SGST, CGST & UTGST) separately, HSN/ SAC Code, etc.	

17	All invoices shall bear the HSN Code for each item separately (Harmonized System of Nomenclature)/ SAC code (Services Accounting Code).	
18	Invoices will be processed only upon completion of statutory requirement and further subject to following: Vendor declaring such invoice in Form GST ANX-1 Receipt of Goods or Services and Tax invoice by BHEL	
19	As the continuous uploading of tax invoices in GSTN portal (in GST ANX-1) is available for all (i.e. both Small & Large) tax payers under proposed new GST Return System, all invoices raised on BHEL may be uploaded immediately in GST portal on despatch of material /rendering of services. The supplier shall ensure availability of Invoice in GST portal before submission of invoice to BHEL. Invoices will be admitted by BHEL only if the invoices are available in GSTN portal (in BHEL's GST ANX-2).	
20	In case of discrepancy in the data uploaded by the supplier in the GSTN portal or in case of any shortages or rejection in the supply, then BHEL will not be able to avail the tax credit and will notify the supplier of the same. Supplier has to rectify the data discrepancy in the GSTN portal or issue credit note or debit note (details also to be uploaded in GSTN portal) for the shortages or rejections in the supplies or additional claims, within the calendar month informed by BHEL.	
21	In cases where invoice details have been uploaded by the vendor but failed to remit the GST amount to GST Department (Form PMT-08 or Form GST RET-01 to be submitted) within stipulated time, then GST paid on the invoices pertaining to the month for which GST return not filed by the vendor will be recovered from the vendor along with the applicable interest (currently 24% p.a) and all subsequent bills of the vendor will not be processed till filing of the GST return by the vendor	
22	In case GST credit is denied to BHEL due to non-receipt or delayed receipt of goods and/ or tax invoice or expiry of timeline prescribed in GST law for availing such ITC, or any other reasons not attributable to BHEL, GST amount claimed in the invoice shall be disallowed to the vendor.	
23	Where any GST liability arising on BHEL under Reverse Charge (RCM), the vendor has to submit the invoices to BHEL well within the timeline prescribed in GST Law, to enable BHEL to discharge the GST liability. If there is a delay in submission of invoice by the vendor resulting in delayed payment of GST by BHEL along with Interest, then such Interest payable or paid shall be recovered from the vendor.	
24	Under GST regime, BHEL has to discharge GST liability on LD recovered from suppliers/contracts. Hence applicable GST shall also be recoverable from suppliers/contractors on LD amount. For this Tax Invoice will be issued by BHEL indicating the respective supply invoice number.	
25	GST TDS will be deducted as per Section 51 of CGST Act 2017 and in	

	line with Notification 50/2018 – Central Tax dated 13.09.2018. GST TDS certificate which will be generated in GST portal subsequent to vendor accepting the TDS deduction in the GST portal, will be issued to the vendor.	
26	A declaration to the effect that all invoice particulars are/were uploaded in the GSTN network/ portal & all tax liability as per GST rules and regulations have been and will be discharged, shall be mentioned in the invoice. If not mentioned in the invoice, a separate declaration shall be submitted as per the requirement of BHEL	
27	MSE VENDOR: <i>i. If L1 vendor is an MSE vendor entire project package will be ordered on L1 vendor.</i> <i>ii. If a Non MSE vendor is coming as L1, then L1 prices will be counteroffered on MSE vendor who is quoting price within the price band L1+15% and if they are agreeing, purchase order will be awarded for full/complete supply of total tendered value to MSE.</i> <i>iii. If more than one MSE vendors are available in the L1+15% price band then lowest of the MSE vendor will be selected for counteroffering. If lowest MSE vendor is not accepting it will be counteroffered to the next MSE vendor in the price band and so on.</i> <i>iv. Finally if none of the MSE vendor in the price band is not accepting it will be ordered on L1 non MSE vendor.</i> Payment for MSE Indigenous vendors will be as per MSMED Act, 2006 Declaration of UAM number by MSE bidders is mandatory. Failing which, such bidders will not be able to enjoy the benefits as per Public Procurement Policy for MSEs Order, 2012. MSE suppliers can avail the intended benefits only if they submit along with the offer, attested/notarized copies of either 1. EM II certificate having deemed validity (five years from the date of issue of acknowledgement in EM II) or 2. Valid NSIC certificate or EM II certificate along with CA certificate (Format enclosed) applicable for the year, certifying quantum of investment in plant and machinery within the permissible limits as per the act for relevant status (MICRO or SMALL) where the deemed validity of EM II is over. <i>Date to be reckoned for determining the deemed validity will be the last date of technical bid submission (Part 1 in case of two part bid).</i> Non submission of such documents will lead to consideration of their bid at par with other bidders. No benefit shall be applicable for	

	this enquiry, in case of any deficiency in the above required documents or in case the documents are not submitted before price bid opening. If the tender is to be submitted through e-procurement portal, then the above required documents are to be uploaded on the portal even if submitted earlier. Documents should be notarized or attested by a Gazetted officer. Definitions of MSEs owned by SC/ST is under: • <i>In case of proprietorship firm, proprietor must be SC/ST.</i> • <i>In case of partnership firm, the SC/ST partners must be holding at least 51% shares in the unit.</i> • <i>In case of private limited companies, at least 51% share must be held by SC/ST promoters.</i> Authorised Offices to Issue SC/ST certificate. The caste/Tribe/Community certificate issued by the following authorities in the prescribed form for SCs/STs can be considered. • District Magistrate / Additional District Magistrate / Collector / Deputy Commissioner / Additional Deputy Commissioner / Deputy Collector / 1st class stipendiary magistrate / Sub divisional Magistrate / Taulka Magistrate / Executive magistrate / Extra Assistant commissioner. • Chief Presidency magistrate / Additional chief presidency magistrate/Presidency magistrate. • Revenue Officer not below the rank of thasildar. • Sub-Divisional officer of the area where the individual and / or his family normally resides. <i>To avail the benefits of MSE under SC/ST category, the related documents as stated above should be submitted along with tender documents.</i> <i>In addition Udyam Registration certificate shall be submitted by MSE vendors.</i>	
28	<u>Make in India:</u> For this procurement, the local content to categorize a supplier as a Class I local supplier/ Class II local Supplier/ Non- Local supplier and purchase preference to Class I local supplier, is as defined in Public Procurement (Preference to Make in India), Order 2017 dated 04.06.2020 issued by DPIIT. In case of subsequent orders issued by the nodal ministry, changing the definition of local content for the items of the NIT, the same shall be applicable even if issued after issue of this NIT, but before opening of Part-II bids against this NIT. The local supplier at the time of tender, bidding or solicitation shall be required to provide self-certification that the item offered meets	

	the minimum local content and shall give details of the location(s) at which the local value addition is made.	
29	<u>Fraud Prevention Policy</u> 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.	
30	<u>Cartel Formation</u> All the firms should desist from forming cartel as the practice is prohibited under Section 3(3) (a) & (d) of the competition Act 2002. If any such instance is observed during this tender will attract disciplinary action as per BHEL policies.	
31	<u>Resolution of Disputes</u> a. If dispute or difference of any kind shall arise between the Purchaser/Consignee and the supplier in connection with or relating to the contract, the parties shall make every effort to resolve the same amicably by mutual consultations. b. Venue of Arbitration: The venue of arbitration shall be the place from where the contract has been issued, i.e., BHEL Trichy. c. Jurisdiction of the court will be from the place where the tender enquiry document has been issued, i.e., Trichy, India	
32	<u>Force Majeure clause</u> a. Notwithstanding the provisions contained in other clauses, the supplier shall not be liable for imposition of any such sanction so long the delay and/or failure of the supplier in fulfilling its obligations under the contract is the result of an event of Force Majeure. For purposes of this clause, Force Majeure means an event beyond the control of the supplier and not involving the supplier's fault or negligence and which is not foreseeable and not brought about at the instance of the party claiming to be affected by such event and which has caused the non – performance or delay in performance. Such events may include, but are not restricted to, wars or revolutions, hostility, acts of public enemy, civil commotion, sabotage, fires, floods, explosions, epidemics, quarantine restrictions, strikes excluding by its employees, lockouts excluding by its management, freight embargoes and Acts of GOD. b. If a Force Majeure situation arises, the supplier shall promptly notify the Purchaser/Consignee in writing of such conditions and the cause thereof within twenty-one days of occurrence of such event. Unless otherwise directed by the Purchaser/Consignee in writing, the supplier shall continue to perform its obligations under the contract as far as reasonably practical, and shall seek all reasonable alternative means for performance not prevented by the Force Majeure event. c. If the performance in whole or in part or any obligation under this contract is prevented or delayed by any reason of Force Majeure	

	for a period exceeding sixty days, either party may at its option terminate the contract without any financial repercussion on either side. d. In case due to a Force Majeure event the Purchaser/Consignee is unable to fulfil its contractual commitment and responsibility, the Purchaser/Consignee will notify the supplier accordingly and subsequent actions taken on similar lines described in above sub-paragraphs.	
Note	1. In the event of our customer order covering this tender being cancelled /placed on hold / otherwise modified, BHEL would be constrained to accordingly cancel / hold / modify the tender at any stage of execution. 2. BHEL may negotiate the L1 rate, if not meeting our budget / estimated cost. BHEL may re-float the tender opened, if L1 price is not acceptable to BHEL. Any deviation in specified commercial terms- Annexure-A, will lead to rejection of offer. 3. Any other Techno –Commercial Terms indicated by the vendor in their offer elsewhere will be ignored. BHEL will proceed with tender evaluation as per Annexure A only.	

BHEL TRICHY
MM/BOI
ANNEXURE – B
Pre-Qualification requirements (PQR)

Sl.NO	Description	Vendor Confirmation
1	The bidder should have supplied globe type control valves 4 inch valve size or higher with the required valve material (C12A or superior material) and rating as per this specification requirement (ANSI 3500STD) and the same valves should have been commissioned in at least one plant of super critical steam generating units with an operating pressure more than 255 kg/cm ² (Pressure at Super Heater outlet) in similar applications mentioned in our specification and are in successful operation for a period of not less than 1 year as on the date of techno-commercial bid opening.	
2	The bidder can offer and supply such equipment for this project with collaboration or valid licensing agreement for design, engineering, manufacture, supply of such equipment in India provided the collaborator meets the above proven ness criteria.	
3	The supplier has to submit either of following supporting documents meeting above mentioned pre-qualifying requirement Copy of minimum one(1) performance certificate in English from end user along with copy of related purchase order(PO) or letter of intent(LOI) or letter of award(LOA) or work order(WO) specifying that the product / equipment is running successfully for one(1) year from date of commissioning meeting pre-qualifying requirement. OR Minimum two PO/LOI/LOA/WO placed with a minimum gap of one (1) year from same purchaser meeting the minimum pre-qualifying requirement. OR Minimum three customer's/ third party's inspection reports/ test certificates/ commissioning certificates meeting the minimum pre-qualifying requirement.	

Offers are liable for rejection, if not satisfying above pre-qualifying criteria.

 भारतीय रेल BHEL	DATA SHEET FOR CONTROL VALVES (WITH PNEUMATIC ACTUATOR)					SPECIFICATION NO.: BM/CV_SPEC : 001					
						SECTION : Boiler Mountings/PE(FB)					
						REV. NO. 00	DATE : 27.04.2019				
Cust No:1727		Tag No.: HCB01AA101					SHEET : 1 OF 2				
100% CAPACITY PNEUMATIC ACTUATOR SBPRV DATA SHEET – A&B											
DATA SHEET – A FOR CONTROL VALVE WITH PNEUMATIC ACTUATOR (TO BE FILLED UP BY PURCHASER)						DATA SHEET – B (TO BE FILLED UP BY BIDDER)					
GENERAL	PROJECT		BHUSAWAL TPS, 1 X 660 MW								
	SERVICE		SBPRV								
	LOCATION		OUTDOOR								
	DUTY		MODULATING								
	PIPE SIZE (inlet / outlet)		D127 X 20 / D127 X 20								
	PIPE MATERIAL (inlet / outlet)		SA335 P91 / SA335 P91								
	MEDIUM		SUPERHEATED STEAM								
BODY	MODEL No.		GLOBE / MULTI STAGE								
	TYPE OF BODY: TRIM DESIGN		BUTT WELD; INLET : Style - P; d1 = 92 mm								
	BODY SIZE : PORT SIZE : DESIGN CV		OUTLET : Style - P; d1 = 92 mm								
	END CONNECTION & RATING (ANSI)		A217 C12A								
	BODY MATERIAL		Grafoil								
	PACKING MATERIAL		EXTENDED / FINNED								
	BONNET TYPE		LINEAR / MODIFIED PARABOLIC /								
	TRIM FORM		EQUAL PERCENTAGE								
	TRIM MATERIAL: SEAT / PLUG / CAGE / STEM		F91 + STELLITED NO.06 + ION NITRIDED / INC 718								
			/ INC 718 / INC 718								
PNEUMATIC ACTUATOR	MODEL No. & SIZE		SPRING ACTION CLOSES THE VALVE								
	CLOSE AT : OPEN AT (Kg/cm ² (g))		<10 Secs / <10 Secs								
	TRAVEL TIME FOR		STAY PUT								
	OPEN TO CLOSE, CLOSE TO OPEN		STAY PUT								
	VALVE POSN. ON SIGNAL AIR FAILURE										
	VALVE POSN. ON SUPPLY AIR FAILURE										
PERFORMANCE OF VALVE	LINEARITY		± 2%								
	HYSTERESIS		± 1%								
	SENSITIVITY		± 0.5%								
	ACCURACY (OVERALL)		± 2%								
SERVICE CONDITIONS											
Sl. No.	LOAD	FLOW t/h	INLET PR. kg/cm ² (g)	OUTLET PR. kg/cm ² (g)	PR. DROP kg/cm ² (g)	INLET TEMP (°C)	Sp. Gravity	Calc. Cv	Valve Lift %	Valve outlet velocity	Noise Level dBA
01	BMCR	22	264.0	40	224.0	499.7					
02	TMCR	22	260.5	40	220.5	500.7					
03	80% TMCR	22	227.9	40	187.9	500.0					
04	60% BMCR	22	198.1	40	158.1	500.4					
05	60% TMCR	22	174.9	40	134.9	503.0					
06	50% TMCR	22	143.8	40	103.8	511.0					
07	40% TMCR	22	122.7	40	82.7	466.4					
08	HPHO	22	257.1	40	217.1	486.9					
09	BMCR	8	264.0	40	224.0	499.7					
10	TMCR	8	260.5	40	220.5	500.7					
11	80% TMCR	8	227.9	40	187.9	500.0					
12	60% BMCR	8	198.1	40	158.1	500.4					
13	60% TMCR	8	174.9	40	134.9	503.0					
14	50% TMCR	8	143.8	40	103.8	511.0					
15	40% TMCR	8	122.7	40	82.7	466.4					
16	HPHO	8	257.1	40	217.1	486.9					

ACTUATOR SIZING PRESSURE : 278.8 kg/cm² (g)
 BODY DESIGN: PRESSURE / TEMPERATURE : 278.8 kg/cm² (g) / 506 °C
 IBR FORM – III C : REQUIRED
 TOTAL WEIGHT (VALVE+ACTUATOR+ACCESSORIES) : kg

Valves should be directly weldable to connecting pipe without the use of Reducers. Only Globe / Inline Valves acceptable. Angle Valves not acceptable.

	DATA SHEET FOR CONTROL VALVES (WITH PNEUMATIC ACTUATOR)		SPECIFICATION NO.: BM/CV_SPEC : 001	
			SECTION : Boiler Mountings/PE(FB)	
			REV. NO. : 00	DATE : 27.04.2019
			SHEET 2 OF 2	
Cust No: 1727		Tag No.: HCB01AA101		Qty.: 1 No. / BOILER
100% CAPACITY PNEUMATIC ACTUATOR SBPRV DATA SHEET – A&B				
DATA SHEET – A FOR CONTROL VALVE WITH PNEUMATIC ACTUATOR (TO BE FILLED UP BY PURCHASER)			DATA SHEET – B (TO BE FILLED UP BY BIDDER)	
ACCESSORIES	SMART POSITIONER AIR FILTER REGULATOR AIR LOCK RELAY POSITION LIMIT SWITCH POSITION TRANSMITTER SOLENOID VALVE I/P CONVERTER JUNCTION BOX HAND WHEEL (SIDE MOUNTED) LOCAL POSITION INDICATOR VOLUME BOOSTER & DUMP VALVE	REQUIRED REQUIRED REQUIRED REQUIRED INBUILT IN SMART POSITIONER NOT REQUIRED INBUILT IN SMART POSITIONER REQUIRED REQUIRED REQUIRED REQUIRED / NOT REQUIRED		
SMART POSITIONER.	MANUFACTURER & MODEL No. BYPASS : GAUGES : ENCLOSURE CLASS INPUT SIGNAL OUTPUT SIGNAL	YES / NO / TWO : IP-65 4 to 20mA TO SUIT ACTUATOR	REFER C&I SPEC TCI:317(Rev.05)	
AIR FILTER REGULATOR	MANUFACTURER & MODEL No. AIR SUPPLY PRESSURE in kg/cm ² (g) OUTPUT PRESSURE in kg/cm ² (g) OUTPUT GAUGE	3.0 to 5.0 TO SUIT ACTUATOR REQUIRED		
AIR LOCK	MANUFACTURER & MODEL No. SET PRESSURE in kg/cm ² (g) SUPPLY PRESSURE in kg/cm ² (g) RESET TYPE VENT PLUG	3.0 to 5.0 AUTO		
LIMIT SWITCH	MANUFACTURER & MODEL No. OPEN : & : CLOSE CONTACT TYPE RATING (AC/DC) ENCLOSURE CLASS	1 No. FOR OPEN & 1 NO.FOR CLOSE 1 No. DPDT(2NO+2 NC contacts) 5A at 240V AC and 0.2A at 220V DC IP65		
POSITION TRANSMITTER	MANUFACTURER & MODEL No. TYPE SUPPLY OUTPUT RATING ACCURACY ENCLOSURE CLASS		INBUILT IN SMART POSITIONER	
SOLENOID VALVE	MANUFACTURER & MODEL No. RATING OPERATION / 4 WAY, DUAL COIL COIL INSULATION CLASS ENCLOSURE CLASS	24V, DC STAYPUT / CLASS-H IP65 / NEMA4	NOT APPLICABLE	
HANDWHEEL	ORIENTATION	SIDE MOUNTED		
JUNCTION BOX	TYPE/No. IF WAYS/SIZE CABLE GLANDS:(SIZE / QNTY / MATERIAL) ENCLOSURE CLASS	CAGE CLAMP/ THIRTY SIX / 2.5 SQ. MM REQUIRED: 16 MM/ 3 No./ BRASS WITH NICKEL PLATED /BOTTOM IP55	REFER C&I SPEC	
I/P CONVERTER	INPUT SIGNAL : POWER SUPPLY SPLIT RANGE ENCLOSURE CLASS		INBUILT IN SMART POSITIONER	
AIR CONNECTION SIZE SHOULD BE 1/2" NPT (F)				
SIGN. : NAME : DATE :	PREPARED BY  P. ARUNKUMAR P. ARUNKUMAR Sr. Product Engineer	CHECKED BY  A. JAI GANESH	APPROVED BY  V. GUNASEKARAN V. GUNASEKARAN Senior Manager	VENDOR SEAL SIGN.: NAME: DATE:
	Boiler Mountings / PE (FB) BHEL, TRICHY - 620 014.			

	SPECIFICATION FOR SH/RH SPRAY CONTROL VALVES/ SBPRV	SPECIFICATION NO.: BM/CV_SPEC: 001	
		SECTION: Boiler Mountings/PE (FB)	
		REV. NO.: 04	DATE: 28.03.18
		PAGE NO : 1 OF 8	

ENGINEERING SPECIFICATION

FOR

SBPRV & SH/RH SPRAY CONTROL VALVES

SPECIFICATION NO: BM/CV_SPEC: 001

Prepared by: A.Jai Ganesh Dy. Manager PE / FB (BM)	Reviewed by: V.Gunasekaran Senior Manager PE / FB (BM)	Approved by: K.Sridharan DGM PE / FB (BM)
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Revision Log					Template Form Revision No.: 00			
Revision No.	Date	Reason	Prepared		Reviewed		Approved	
			Name	Sign.	Name	Sign.	Name	Sign.
01	12.03.16	Revisit	AJG		VGS		KS	
02	10.03.17	Updated	PJS		AJG		KS	
03	24.05.17	Moisture Sep. added	PJS		AJG		KS	
04	28.09.17	SBPRV trim materials revised in Sl.no:18	PAK		AJG		KS	

	SPECIFICATION FOR SH/RH SPRAY CONTROL VALVES/ SBPRV		SPECIFICATION NO.: BM/CV_SPEC: 001
			SECTION: Boiler Mountings/PE (FB)
	REV. NO.: 04		DATE: 28.03.18
	PAGE NO : 2 OF 8		

1. The control valves and accessory equipment offered under this specification shall be designed, constructed and tested in accordance with the latest applicable standards and codes.
2. All the Control Valves and accessories offered by the Bidder, shall be of proven make, whose guaranteed and trouble free performance has been proven at least for two years in not less than three coal fired utility stations of reheat type.
3. The design of all valve bodies shall conform to the requirements of ANSI B-16.34 and other applicable standards for dimensions, material thickness and material specification for their respective pressure classes.
4. **The valve sizing for SH/ RH spray control valves shall be suitable for obtaining maximum flow conditions with valve opening at approximately 80% of total valve stem travel and minimum flow conditions with valve stem travel not less than 10% of total valve stem travel.**
5. **The valve sizing for SBPRV (Soot Blower Pressure Reducing Valve) valves shall be suitable for obtaining maximum flow conditions with valve opening at approximately 80% of total valve stem travel and minimum flow conditions with valve stem travel not less than 30% of total valve stem travel.**
6. All the Control Valves shall be capable of handling at least 120% of the required maximum flow. Further the valve stem travel range from minimum flow condition to maximum flow condition shall not be less than 50% of the total valve stem travel.
7. Valve sizing shall be in accordance with the latest edition of ISA Handbook on Control Valves with due consideration for the measures to avoid choked flow. Bidder shall ensure that valve outlet velocity does not exceed 8 m / sec. for liquid services, 150 m / sec. for steam services and 50% of sonic velocity for flashing services.
8. The turndown of the valve offered should not be less than 30:1 for SH / RH Spray Control Valve applications and SBPRV.
9. The control valve size should not be smaller than connecting line size by more than 1 step.
10. **The trims of all regulating control valves should be cage guided type. Top guided design is not acceptable.**
11. Bidder shall provide valves designed to prevent cavitation, wire drawing, flashing on down stream side of valve and in down stream piping when operating through full range under the specified conditions. In cavitation services, the valves shall be provided with anti-cavitation trims specially designed to prevent the occurrence of cavitation by dropping the pressure in stages.

	SPECIFICATION FOR SH/RH SPRAY CONTROL VALVES/ SBPRV	SPECIFICATION NO.: BM/CV_SPEC: 001	
		SECTION: Boiler Mountings/PE (FB)	
		REV. NO.: 04	DATE: 28.03.18
		PAGE NO : 3 OF 8	

12. Bidder shall furnish in his proposal detailed calculations to establish whether cavitation will occur or not under any operating condition for a particular application. These calculations shall be subject to Owner's review and approval and in case it is established at any stage of the contract that cavitation will occur, the Bidder shall provide anti-cavitation trim for the same at no extra price. Further the Bidder shall furnish in his proposal the detailed write up, technical literature, etc. clearly indicating as to how the occurrence of cavitation shall be prevented by the design of his offered anti-cavitation trim.
13. Bidder to furnish calculation to check whether flashing or cavitation will occur for services like SH/RH Spray Control Valves.
14. Super Heater spray control Valves should be cage guided valve with low noise anti cavitation trim which are suitable for withstanding high pressure drops and which minimize the adverse effects of cavitation/ flashing on Control Valve parts.
15. Re Heater spray control Valves should have specially designed (such as cage guiding valves with two or more concentric cages with holes in the cage to control the location of the Vena Contract or multi stage multi path discrete pressure reduction trims etc) multi stage trim which are suitable for withstanding high pressure drops and which minimize the adverse effects of cavitation/ flashing on Control Valve parts. All pressure reduction shall be achieved only in valve trim parts. Pressure reduction orifices in the valve outlet line is not acceptable.
16. SBPRV control valve should have specially designed (such as cage guiding valves with two or more concentric cages with holes in the cage to control the location of the Vena Contract or multi stage multi path discrete pressure reduction trims etc.) multi stage trim which are suitable for withstanding high pressure drops and which minimize the adverse effects of cavitation/ flashing on Control Valve parts. All pressure reduction shall be achieved only in valve trim parts. Pressure reduction orifices in the valve outlet line is not acceptable.
17. All control valves shall have stems, guide bushings, plugs, seat rings, stem lock pins, stuffing box parts and other trim parts made of stainless steel alloys and suitably hardened. Valve guide posts and bushings shall be stellite faced. Stellite faced guide posts and bushings shall be differential hardened for applications involving high pressure drop as well as for flashing and cavitation applications.
18. Vendor to consider SBPRV operating conditions as severe service conditions because of high pressure drop across the valve trim. All the trim parts shall be of materials as listed in the Table:1. No deviations will be accepted pertaining to trim materials.

	SPECIFICATION FOR SH/RH SPRAY CONTROL VALVES/ SBPRV		SPECIFICATION NO.: BM/CV_SPEC: 001
			SECTION: Boiler Mountings/PE (FB)
	REV. NO.: 04		DATE: 28.03.18
	PAGE NO : 4 OF 8		

Table:1

TRIM	TRIM MATERIAL
Seat material	F91 + Stellite No.06 + Ion Nitrided
Plug material	Inconel 718
Cage material	Inconel 718
Stem material	Inconel 718

19. For SH/ RH spray control valves the trim materials shall be as follows
- Cage :- CA6NM + Chrome Plated / 17-4 PH *
 - Plug :- CA6NM + Chrome Plated /17-4 PH *
 - Stem :- CA6NM + Chrome Plated / 17-4 PH *
 - Seat :- SS 316 Stellite / SS410

*17-4PH is to be used where design temperature <343 deg C

20. SH /RH Block and Control valves and SBPRV shall have minimum permissible leakage class V as per FCI 70.2.
21. The valve design shall take into account noise abatement considerations. The design objective will be to limit the generation of valve induced noise to 85 dBA at 1 metre from the valve surface under actual operating conditions. The noise abatement shall be obtained by valve body and Low Noise trim design and not by the use of silencers. Bidder shall furnish noise calculation details for each control valve and establish that sound level is less than 85 dB without using any external device or insulation.
22. The Bidder shall be responsible for proper sizing of the valves and selection of appropriate models for meeting the operating requirements.
23. Bidder shall furnish filled in BHEL's data sheets, sizing calculations including the inlet / outlet velocity calculations for each of the valves with the proposal which will be subjected to Owner's approval during detailed engineering stage.
24. All valves shall be linear/modified parabolic / equal percentage / quick opening as specified in data sheets.
25. All valves shall be only of globe body design & straightaway pattern. Angle type valve is not acceptable for any service.



SPECIFICATION FOR SH/RH SPRAY CONTROL VALVES/ SBPRV

SPECIFICATION NO.: BM/CV_SPEC: 001

SECTION: Boiler Mountings/PE (FB)

REV. NO.: 04

DATE: 28.03.18

PAGE NO : 5 OF 8

26. Bidder shall supply quick-change type of trim for all control valves. The trim shall be removable through the top after bonnet removal without any cutting or welding of the valve. Where applicable, plugs shall be designed to include pressure balancing for cage-guided valves. Welded / armored seats are not acceptable.
27. Bonnet joints for all Control Valves shall be of the flanged and bolted type. Bonnet joints shall be designed for easy disassembly and for assurance of correct valve stem alignment. Bonnet joints of the internal threaded or union type will not be acceptable.
28. Plug shall be one-piece construction either cast, forged, or machined from solid bar stock. Plugs shall be screwed and pinned to valve stems or shall be integral with the valve stems.
29. Valve's gland packing material shall be grafoil for all the valves.
30. The boiler water will be acid cleaned on site using 1 to 1.5% (by weight) inhibited hydro fluoric acid. The valve manufacturer will have to take into account above-mentioned requirement during design of these valves. The body material shall be selected by Bidder to be compatible with the nature of the fluid, service conditions and piping material to which it is welded and shall be subject to Owner's approval during detailed engineering stage.
31. Valve body ends shall be butt welded or socket- welded type as indicated in datasheets.
32. Welded end for Control Valves shall be butt welded as per ANSI B16.25 for Control Valves of size 65mm (2-1/2") and above. For valves sizes 50mm (2") and below welded end shall be socket welded as per ANSI B16.11.
33. The end for all the Control Valves shall be matched to the corresponding details for the piping on which the valve is installed. **All necessary expanders/reducers are to be supplied by the vendor to match the pipe sizes.**
34. **Extended / Finned bonnets shall be used on all valves when the design temperature of the valve is greater than 280 deg.C.**
35. Stem travel indicators shall be provided on all valves.
36. Flow directions, Valve tag number shall be marked/embossed in valve body for checking during erection.

LIST OF APPROVED VENDORS FOR SOLENOID VALVE (If applicable):

- 1) Asco
- 2) Rotex.

	SPECIFICATION FOR SH/RH SPRAY CONTROL VALVES/ SBPRV		SPECIFICATION NO.: BM/CV_SPEC: 001
			SECTION: Boiler Mountings/PE (FB)
	REV. NO.: 04		DATE: 28.03.18
	PAGE NO : 6 OF 8		

PNEUMATIC VALVE ACTUATORS

- 1) All Control Valves shall be furnished with pneumatic spring opposed diaphragm/piston type actuators depending upon the process requirements.
- 2) The Bidder shall be responsible for proper selection and sizing of valve actuators in accordance with the pressure drop and maximum shut-off pressures. The Bidder shall ensure while sizing the actuators that proper and adequate size is selected which do not restrict or endanger the plant operation and ensure the required leakage class. The actuator size of the valve actuator shall be subject to owner's approval during detailed engg. stage.
- 3) The actuators shall be designed to produce the required stem force with supply air pressure of 3 to 5 kg/sq.cm. unless otherwise specified.
- 4) Valve actuators shall be capable of operating at an ambient temperature of 60°C continuously.
- 5) All actuators shall also have provisions for manual operation during emergency / maintenance along with graduated local position indicator.
- 6) Valve actuators and stems shall be adequate to handle the unbalanced forces occurring under the specified flow conditions or the maximum differential pressure specified. An adequate allowance for stem force, at least 0.15 Kg/sq.cm. per linear millimeter of seating surface, shall be provided in the selection of the actuator to ensure light seating unless otherwise specified.

VALVE ACCESSORIES FOR PNEUMATIC ACTUATORS

- 1) All accessory devices like SMART positioners, solenoid valves (If applicable), air locks, air filter regulators, limit switch assemblies, junction boxes, hand jack / hand wheels, pneumatic tubing, etc. shall be provided as per the requirements. **Moisture separator** is to be provided to separate moisture if any in the air line.

TESTS AND EXAMINATIONS

All valves shall be tested in accordance with the quality assurance program agreed between the Owner and the Contractor, which shall meet the requirements of IBR and other applicable codes. The customer approved Quality Plan is to be followed. The tests shall include but not limited to the following.

- 1) Non-destructive examination shall be performed as per ANSI-B-16.34 (Steel Valves).
- 2) 100% radio graphic test on body of all valves having rating of 900 lbs or above; magnetic particles / dye penetrant examination on all internal and external machined surfaces and 100% ultra sonic testing of forgings and bars (of size 50 mm and above) of all valves with rating of 900 lbs or above shall be performed as per ANSI B16.34.

	SPECIFICATION FOR SH/RH SPRAY CONTROL VALVES/ SBPRV		SPECIFICATION NO.: BM/CV_SPEC: 001
			SECTION: Boiler Mountings/PE (FB)
	REV. NO.: 04		DATE: 28.03.18
	PAGE NO : 7 OF 8		

3) **Hydrostatic Test**

Valves shall be subjected to hydrostatic shell test in accordance with ANSI-B16.34 prior to seat leakage test. If the valves are reworked on the pressure parts for any reason after hydrostatic test, they must be retested. Valves shall be hydrostatically tested in Manufacturer's Works in accordance with code requirements. All hydrostatic testing and inspection shall be completed before any paint is applied to valve body. Certificates of inspection shall be executed in accordance with the latest codes and required codes shall be forwarded to the Engineer. All gaskets used for test shall be of the same material and design as specified for the finished product. Where mechanical gasket joints are broken following tests, new gaskets shall be furnished with the equipment, and the joints shall be retested.

4) **Leakage Test**

Valve closure test and seat leakage tests shall be performed in accordance with ANSI - B16.34 and as per applicable Leakage Class. The leakage from packing shall be zero or bubble tight.

5) **Functional Tests**

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. The same controller can be used to test each valve. 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. Performance tests such as Linearity, Hysteresis, Sensitivity & Accuracy are to be checked as per specification

6) **Cv Test**

Cv test shall be carried out as type test on each size type and design of the valves as per ISA-75.02 standard and the test reports, shall be furnished for Owner's approval. This is to be performed specifically for this project even though Cv test reports of earlier projects are available.

DOCUMENTS REQUIRED

1. **Along with offer**

- a) POINTWISE REPLY SHALL BE SENT FOR ALL THE ABOVE SPECIFICATIONS ALONG WITH A LIST OF TECHNICAL DEVIATIONS, IF ANY.
- b) Cross sectional drawing of the valve (Trim) showing materials of various parts.
- c) Lift vs Cv curves.
- d) Filled up data sheets.
- e) Calculations to demonstrate the suitability of the selected valve to combat.



SPECIFICATION FOR SH/RH SPRAY CONTROL VALVES/ SBPRV

SPECIFICATION NO.: BM/CV_SPEC: 001

SECTION: Boiler Mountings/PE (FB)

REV. NO.: 04

DATE: 28.03.18

PAGE NO : 8 OF 8

- Cavitation in case the valve is for liquid application.
 - Vibration.
 - Noise.
 - Flashing in case the valve is for saturated liquid application.
 - Valve sizing calculations.(Cv , valve outlet velocity)
 - Catalogs of the Valve and Accessories offered.
- f) Commissioning spares required along with the price for the same.
- g) Actuator sizing calculations.
- h) Pneumatic hook up diagram similar to the one enclosed.
- i) Terminal box wiring diagram.

WITHOUT THE ABOVE DETAILS, THE OFFERS WILL BE TREATED AS INCOMPLETE AND LIABLE FOR REJECTION

2. After placement of order.

- a) Dimensional drawing for approval.
- b) O&M manuals – 1 set of Hard copy to be sent to site along with equipment.
- c) Data sheets & drawings for approval.
- d) Test Certificates.
- e) O&M manual in soft copy – One copy of O&M manuals in soft copy is to be submitted in CD-ROM (Compact disc). The O&M manuals should be furnished within three months from the date of placement of order.

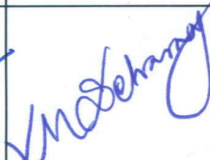
3. Details to be indicated on the Name Plate

- a) Tag No. & Valve serial No.
- b) Body material, size and pressure rating.
- c) Trim material, size and characteristic body material, size and pressure rating.
- d) Action on air failure.
- e) Spring range.
- f) Stem travel in mm.
- g) Valve action.

TECHNICAL DELIVERY CONDITIONS FOR SUB - DELIVERY COMPONENTS OF CONTROLS AND INSTRUMENTATION

Page 01 of 04

SMART POSITIONER

Rev. No.	Date	Description	Prepared	Reviewed	Approved
00 - 05	19-09-18	Initial Release	-sd-	-sd-	-sd-
06	17-10-19	Revised after revisit			

Sl. No	Technical Description/Requirement	
1	SITE CONDITIONS:- Altitude above Sea Level Atmosphere Relative humidity Operating temperature	500 Meters Tropical, Dusty, Windy & Heavily polluted atmosphere 100 % -30 to 80 degree Celsius
2	Input demand signal	4-20 mA demand signal from DCS.
3	Power Supply	2 wire system, Loop powered from output card of DCS.
4	Operational signal range	4-20 mA. Split range operation shall also be possible if required as per the application.
5	Air Supply	Shall be suitable for 3 – 7 kg/cm ² Shall be suitable to work with instrument air of quality - Class 2 or Class 3 meeting the requirements of the standard ISO 8573.1
6	Type of Action (Direct/Reverse)	Shall match with the requirement of the Control Valve/damper application.
7	Flow Characterization	Shall match with valve characteristics, Linear/Equal percentage etc.
8	Stroke time	Shall match with the requirement of the Control Valve/damper application.
9	Single/Double Acting	Shall match with the requirement of the Control Valve/damper application.
10	Pneumatic Process Connection	Shall match with the requirement of the Control Valve/damper application.
11	Communication by Hart Protocol	SMART positioner shall be compatible for Remote calibration & Diagnostics using HART protocol.

Sl. No	Technical Description/Requirement	
12	Calibration	SMART positioner shall be compatible for Auto Start with self-calibration, Remote calibration using Hart protocol & local/manual calibration using push buttons available on the positioner.
13	Position feedback Sensing & Transmitter	Position Sensing shall be integral to the SMART positioner. 4-20 mA hardwired current signal for Position feedback shall be provided from the positioner.
14	Electrical Cable entry	Side or bottom entry to avoid water ingress.
15	Protection Class	IP 65
16	Action required during failure of 4 to 20 mA control signal.	Shall be configured for the fail safe position as per the requirement of Control Valve/damper application.
17	Characteristic Deviation	$\leq 0.5\%$ of span or better.
18	Influence of temperature rise on positioner	$\leq 0.01\%$ per degree Celsius.
19	Accessories	Pressure Gauge Block:- For Supply & output pressure, pressure gauges shall be provided on the positioner. Operator panel:- The positioner shall have a display with push buttons for configuration and for read out. Valve Mounting accessories:- Required mounting accessories & fasteners for mounting the positioner on valve actuators shall be taken care of by the valve vendor.
20	Electro Magnetic Compatibility	SMART positioner shall conform to EMC requirements as per the relevant international standards IEC/EN.

Sl. No	Technical Description/Requirement	
21	Hardwired Digital Output Signals from the positioner.	Fault signal output.
22	Diagnostic Features	Positioner shall be provided with diagnostic features for monitoring.
23	Test reports & Catalogues	1. Test Certificates as per Manufacturer's Standard. 2. SMART positioner catalogues & O&M manuals.
24	General Note	The SMART positioner with its accessories/electronic cards shall be sourced completely from the OEM.

Controls & Instrumentation/Fossil Boilers
E, C&I input for Control Valve accessories

CI: BHUSHAWAL: ECI:CV, Rev. 01

Project : BHUSHAWAL (1 x 660 MW)

Cust. Nos. : 1727

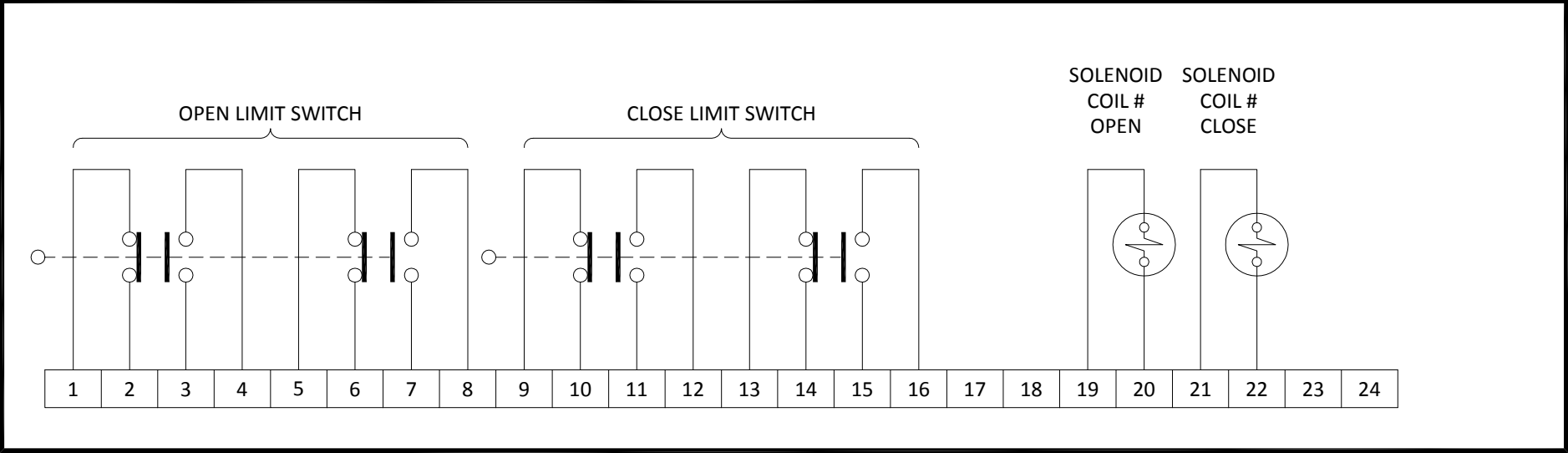
Sl. No	Description	Vendor's Compliance
1.	SMART positioner :- Vendor to supply SMART positioner as per the requirements indicated in the Technical specification TCI:317/Rev. 06 Positioner cover :- Dust tight, corrosion resistant & weather proof IP 65 metal casing. (Die Cast Aluminium/SS316)	
2.	Integral Junction Box :- An integral junction box made of metal meeting protection class requirements of IP 55 shall be provided and all the valve accessories shall be wired suitably up to the terminal blocks present inside the box. The terminal blocks shall be of cage clamp type suitable for 2.5 sq.mm. cable. The signals shall be terminated as per the TB nos. mentioned in the BHEL wiring drawing.	
3.	Method of Termination of external cables to the integral junction box (i.e. Command & Feedback signals from external control system) :- 3 Nos. of Double compression type, Brass with Nickel plated, weather proof cable glands shall be provided suitable for the termination of cable of OD 16 mm.	
4.	Limit Switch Type & Rating :- Type of Limit Switch :- 1 No. DPDT (2 NO + 2 NC contacts) or 2 Nos. of SPDT (2 NO + 2 NC contacts). Contact Rating: 5 A at 240 V AC and 0.2 A at 220 V DC. Applicability and quantity of the limit switch shall be as per the application requirement, as indicated in the valve/actuator datasheet.	

Note to Vendor :

Vendor to indicate "Confirmed" meeting the requirements as spelt above in the vendor's compliance column.

Name of the vendor with Signature & seal :
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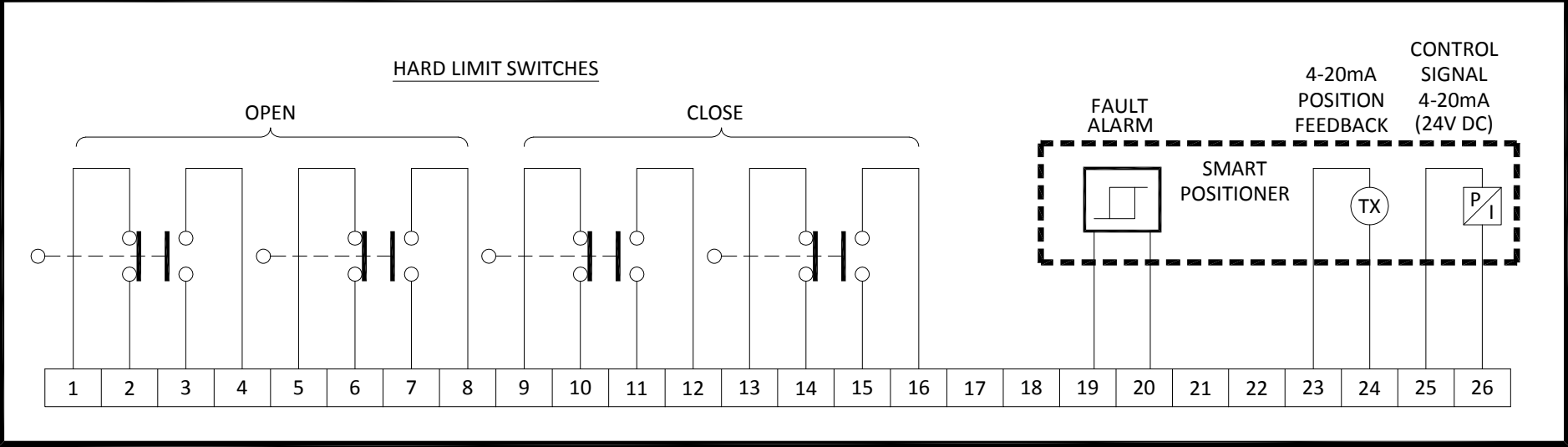
TB DIAGRAM OF OPEN/CLOSE DUTY PNEUMATIC ACTUATOR



NOTE

APPLICABILITY & QUANTITY OF LIMIT SWITCHES SHALL BE AS PER VALVE DATA SHEETS / SPECIFICATION.
- SINGLE OR DUAL SOLENOID FOR THE RESPECTIVE APPLICATION SHALL BE AS PER VALVE SPECIFICATION / DATA SHEET.

TB DIAGRAM OF REGULATING DUTY PNEUMATIC ACTUATOR

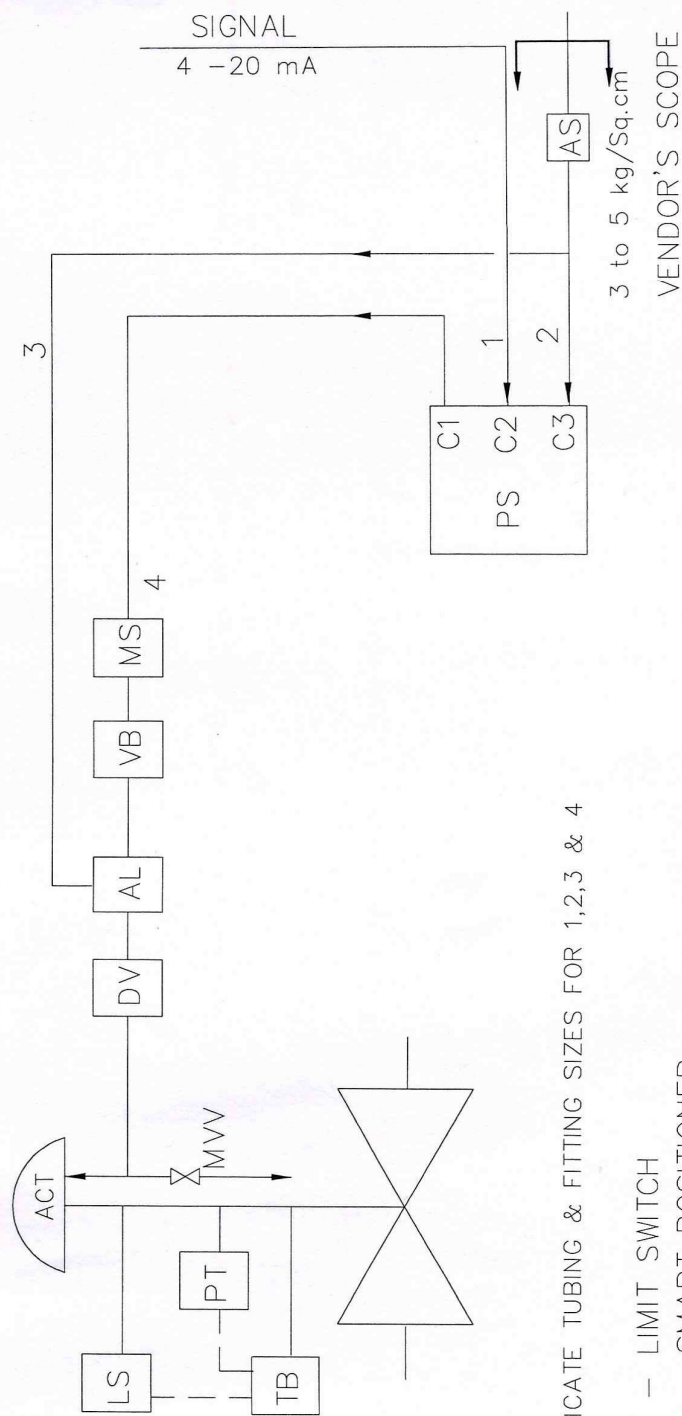


REV	DATE	ALTERED : CHD. / APPD. :	REV	DATE	ALTERED : CHD. / APPD. :
02	211119	211119	01	231019	Sd.\MM/VMS
ZONE	REVISED AFTER REVISIT.		ZONE	REVISED AFTER REVISIT.	

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.

OWNER :		MAHARASHTRA STATE POWER GENERATION COMPANY LIMITED			
PROJECT :		BHUSHAWAL TPS EXPANSION PROJECT			
		1 X 660 MW, STAGE-IV, UNIT-6, Cust. No. 1727			
CONSULTANT :		DEVELOPMENT CONSULTANTS PRIVATE LIMITED, MUMBAI			
	Bharat Heavy Electricals Ltd UNIT: HIGH PRESSURE BOILER PLANT TIRUCHIRAPALLI - 620014	DRN	NAME A. Thamburaj	SIGNATURE 280319	DATE 28-03-19
		CHD	M.Muruga Prabu	Sd. / MM	28-03-19
		APPD	V.M.Selvaraaj	Sd. / VMS	28-03-19
DEPT. - C&I		SCALE NTS	WEIGHT (Kg)	REF TO ASSY / OLD DWG	ITEM NO
CODE - 392					
TITLE TERMINAL BLOCK DIAGRAM FOR PNEUMATIC ACTUATOR (DRAWN FOR INTERMEDIATE POSITION OF ACTUATOR) Sheet 01 of 01			CARD CODE U 01	DRAWING NO : 3-97-599-24099	REV 02

PROJECT: BHUSAWAL TPS, 1 x 660 MW



VENDOR TO INDICATE TUBING & FITTING SIZES FOR 1,2,3 & 4

VENDOR'S SCOPE

PREPARED: P.ARUNKUMAR
CHECKED: A.JAI GANESH
APPROVED: V.GUNASEKARAN

	CHECK LIST FOR SH/RH BLOCK/CONTROL VALVES AND SBPRV	SPEC. NO. BM/CV_SPEC:001	
		SECTION: Boiler Mountings/PE (FB)	
		REV NO.: 00	Date: 27.04.2019
		SHEET : 1 OF 1	
CUSTOMER NAME : BHUSAWAL TPS, 1 x 660 MW		CUST. No.:1727	
Vendor should submit this Filled up Check list along with Technical and Unpriced Offer during Initial Offer submission and with each Revised Submission . Put tick mark "√" in appropriate boxes relevant to the submission. Indicate Revision Number in case of revised submission. Offer will not be evaluated without receipt of filled up Check list signed and company seal affixed .			
SL NO	ENCLOSURES / DETAILS FURNISHED	FIRST SUBMISSION REV 00	REVISED SUBMISSION REV ____
01	Completely Filled up BHEL Datasheets for all services clearly indicating Vendor name, models, size, Rating, Materials, Cv, Lift%, Valve weight etc with vendor signature and Company seal.	YES ☐ NO ☐	YES ☐ NO ☐
02	Valve & Accessory models like Actuator, Positioner, Air lock, Limit switch, Position Transmitter, Solenoid valve, I/P Converter, Terminal Box etc. offered meets all the Specification indicated in BHEL datasheets and accepting IBR Form-IIIC submission.	YES ☐ NO ☐	YES ☐ NO ☐
03	Valves can be directly welded to connecting line sizes indicated in BHEL Datasheets without reducers	YES ☐ NO ☐	YES ☐ NO ☐
04	Lift % vs. Cv% curve for each and every valve model offered (Excluding Block Valve).	YES ☐ NO ☐	YES ☐ NO ☐
05	Terminal Box wiring diagram (For Pneumatic Actuators)	YES ☐ NO ☐	YES ☐ NO ☐
06	Vendor's Pneumatic Hookup diagram as applicable for each service considering whether actuator is Single Acting or Double Acting	YES ☐ NO ☐	YES ☐ NO ☐
07	Sizing Calculations showing Formula used with variables and constants for each of the following: i) Cv sizing for all services ii) Actuator sizing for all services iii) Noise calculation for control valves iv) Cavitation check calculation for SH/RH Spray control valves v) Valve outlet velocity calculation	YES ☐ NO ☐ YES ☐ NO ☐ YES ☐ NO ☐ YES ☐ NO ☐ YES ☐ NO ☐	YES ☐ NO ☐ YES ☐ NO ☐ YES ☐ NO ☐ YES ☐ NO ☐ YES ☐ NO ☐
08	Valve and All Accessory catalogs if models are revised or these are offered for the first time.	YES ☐ NO ☐	YES ☐ NO ☐
09	The Quantities, Models and other vendor indicated details in Quotation (Unpriced Bid) are matching with BHEL Enquiry Sl.Nos. Quantities and those filled in BHEL Datasheets	YES ☐ NO ☐	YES ☐ NO ☐
10	Duly filled up "BHEL Special Contract Requirements" with Vendor Seal and Signature (If applicable and sent by BHEL)	YES ☐ NO ☐	YES ☐ NO ☐
11	<u>ELECTRICAL ACTUATOR DETAILS</u> (If applicable for this project) 1) Electrical Actuator –vendor wiring diagram 2) Actuator vendor's datasheets 3) BHEL datasheets for actuator	YES ☐ NO ☐	YES ☐ NO ☐
VALVE VENDOR NAME :			
SIGNATURE OF COMPANY REPRESENTATIVE WITH DATE :			
SEAL OF COMPANY REPRESENTATIVE :			

NB: STRIKEOUT WHICHEVER IS NOT APPLICABLE



BHARAT HEAVY ELECTRICALS LIMITED
TIRUCHIRAPPALLI - 620 014, INDIA.
QUALITY ASSURANCE DEPARTMENT

STANDARD QUALITY PLAN FOR CONTROL VALVES (STEAM & WATER APPLICATIONS)

SQP:SD:06 Rev 00

Page: 1 of 5

Prepared By
Quality Assurance

VENKANNA RUPANI

R Venkanna
14/09/2015

Reviewed by	Signature
Quality Assurance S. PANNSEER SELVAM	 14/09/15
Engineering K. SRIDHARAN	 16/09/15
Materials Management/BOI K. UDAYA KUMAR	 16/09/15
Quality Control R. DHARMAR	 15/09/15

Rev No	Date	Approved by	Signature
00	14/09/2015	AGM / QA & BE	

Record of Revisions

Rev No	Details of Revision	Remarks
00	Fresh Issue	

बी एच ई एल BHEL		MANUFACTURER'S NAME & ADDRESS: BHEL TIRUCHIRAPPALLI APPROVED SUPPLIERS		STANDARD QUALITY PLAN							QWI NO:SQP:SD:06 REV.NO.00 DATE: 14/09/2015 PAGE: 2 OF 5			
				PRODUCT: CONTROL VALVES – STEAM & WATER APPLICATIONS (SH, RH SPRAY BLOCK; SB PRESSURE REDUCING; WARM KEEPING LEVEL; START-UP SYSTEM:SEPARATOR LEVEL & MINIMUM ECONOMIZER FLOW)										
				SUB-SYSTEM :Steam Generator Package										
SL NO	COMPONENT & OPERATIONS	CHARACTERISTICS	CLASS	TYPE OF CHECK	QUANTUM OF CHECK		REFERENCE DOCUMENT	ACCEPTANCE NORMS	FORMAT OF RECORD	AGENCY			REMARKS	
										M	C	N		
1	2	3	4	5	M	C/N	7	8	9	D*	**	10	11	

1.0	RAW MATERIALS & BOUGHT OUT ITEMS													
1.1	Body, Bonnet, inlet & outlet nozzles (if applicable)	Chemical & Mech Properties, Heat treatment, Hardness@	B	TC Verification	1/Heat	1/Heat	BHEL approved datasheet/ ASTM Std	BHEL approved datasheet / ASTM Std	MTC	√	P	V	V	@on Gr 91 materials only.
		Surface quality*	B	Visual Examination	100%	100%	MSS SP 55	MSS SP 55	MTC	√	P	V	V	*on castings.
		Internal Soundness for class rating ≥ 900 (RT/UT#)	B	TC Verification	100%	100%	ASME Sec V	RT: ASME B16.34 Appendix I/ UT: ASME B16.34 Appendix IV	MTC	√	P	V	V	#RT as per ASME B16.34; UT for forgings of dia/thick ≥50mm.
		#Sub-Surface Soundness(MPI)	B	TC Verification	100%	100%	ASME Sec V/ ASTM E709	ASME B 16.34 Appendix II	MTC	√	P	V	V	#On accessible areas.
1.2	Trim(Plug, Seat ring & Stem)	Chemical & Mechanical Properties, Hardness@	B	TC Verification	1/Heat	1/Heat	BHEL approved datasheet / ASTM Std	BHEL approved datasheet / ASTM Std	MTC	√	P	V	V	@on Gr 91 materials only.
		Stem Internal Soundness(UT#)	B	TC Verification	100%	100%	ASME Sec V/ ASTM A 388	ASME B 16.34 Appendix IV	MTC	√	P	V	V	#UT for dia/ thick ≥50mm
1.3	Pressure retaining fasteners	Chemical, Mechanical Prop & Dimensions	B	TC Verification	1/Heat	1/Heat	BHEL approved datasheet /ASTM Std	BHEL approved datasheet /ASTM Std	MTC/ COC	√	P	V	V	
1.4	Diaphragm/ Piston Cylinder, if applicable	Surface Quality, Strength & %Elg, Hardness, *, Endurance Life, Dimensions	B	Visual & Measurement	1/ Lot 100%	1/ Lot 100%	Manufacturer's Specification 10,000 Cycles	Manufacturer's Specification No damage	COC	√	P	V	V	*property change after heat aging.
1.5	Springs, if applicable	Chemistry, Strength, Hardness, Endurance*, Scragging, Linearity & Dimensions	B	Chemical Analysis, Compression & Load test, Measurement, Cyclic Test, Measurement	1/ Lot	1/ Lot	Manufacturer's Specification 10,000 Cycles	Manufacturer's Specification No damage	COC	√	P	V	V	*including stiffness ratio.

LEGEND: *RECORDS IDENTIFIED WITH "TICK" (√) SHALL BE ESSENTIALLY INCLUDED BY THE SUPPLIER IN QA DOCUMENTATION;
**** M:** MANUFACTURER, **C:** BHEL QC/BHEL AIA, **N:** CUSTOMER; **P:** PERFORM. **W:** WITNESS, **V:** VERIFICATION; **CLASS :** A - CRITICAL ; B - MAJOR ; C – MINOR;
MTC- Mill /Manufacturer's Test Certificate; IR- Inspection/Test Report; (R): Routine test; (I)/(Ts): Type test, COC: Certificate of compliance



**MANUFACTURER'S
NAME & ADDRESS:
BHEL TIRUCHIRAPPALLI
APPROVED SUPPLIERS**

STANDARD QUALITY PLAN

**PRODUCT: CONTROL VALVES – STEAM & WATER APPLICATIONS (SH, RH SPRAY
BLOCK; SB PRESSURE REDUCING; WARM KEEPING LEVEL;
START-UP SYSTEM:SEPARATOR LEVEL & MINIMUM ECONOMIZER FLOW)**

**QWI NO:SQP:SD:06
REV.NO.00 DATE: 14/09/2015
PAGE: 3 OF 5**

SUB-SYSTEM :Steam Generator Package

SCD SYSTEM Steam Generator Package															
SL. NO	COMPONENT & OPERATIONS	CHARACTERISTICS	CLASS	TYPE OF CHECK	QUANTUM OF CHECK		REFERENCE DOCUMENT	ACCEPTANCE NORMS	FORMAT OF RECORD	D*	AGENCY			REMARKS	
					M	C/N					M	C	N		
1	2	3	4	5	M	C/N	7	8	9	D*	**	10	11		
1.6	Pressure Gauges, if applicable	Rating/Range, Performance	B	Visual, Calibration	100%	100%	Manufacturer's Specification	Manufacturer's Specification	IR/COC	√	P	V	V		
1.7	Accessories: Solenoid valve, limit switch, ALR, junction box, positioner & transmitters, etc.#	Make/rating/type; Degree of protection(as applicable)*	B	Verification	100%	100%	BHEL approved datasheet	BHEL approved datasheet	COC & Certificates *	√	P	V	V	#BHEL approved makes. *For electrical items, certificates by statutory bodies shall be furnished.	
2.0	INPROCESS INSPECTION														
2.1	Welding Qualifications, if welding is involved	Procedure	B	Document Review	100%	100%	ASME Sec IX	ASME Sec IX	PQR & WPS	√	P	V	V	# ASME Sec IX for BHEL export boilers only	
		Personnel #	B	Document Review	100%	100%	IBR/ ASME Sec IX#	IBR/ ASME Sec IX #	WPQ	√	P	V	V		
2.2	PWHT, if applicable	Time & Temp control	B	Review of HT Chart	100%	100%	WPS & IBR	WPS & IBR	HT Chart	√	P	V	V		
2.3	Hard faced Trims	Hardness	B	Measurement	On test samples only		BHEL approved datasheet / Mfg Std	BHEL approved datasheet / Mfg Std	Test Report	√	P	V	V		
2.4	Body, Bonnet, Plug, Seat Rings & Stems after machining	Surface quality, Dimensions including profile check	B	Visual & Measurement	100%	--	Manufacturer's Drawing	Manufacturer's Drawing	--	-	P	--	-		
2.5	Lapping*	M/c surface contact	B	Visual	1/Heat		---	Proper Physical contact	Test Report	-	P	-	-	*for rotating stem valves.	
2.6	NDE on hard faced trims	Weld Soundness	B	LPI	100%	100%	ASME E165	ASME Sec VIII Div 1 Appd 8.4	Test Report	√	P	V	V		
2.7	NDE on butt weld joints	Weld Soundness	B	RT/UT	100%	100%	ASME Sec V	ASME Sec I	Test Report	√	P	V *	V	*Film Review	
2.8	NDE on butt weld ends	Soundness of edges after m/c	B	LPI	100%	100%	ASME Sec V	ASME Sec VIII Div 1 Appd 8.4	Test Report	√	P	V	V		
2.9	Body & Bonnet	Leak tightness & pressure resistance	A	Hydro Test	100%	-	ASME 16.34/ ISA 75.19	No Leak	Register/ Log	--	P	-	-		
2.10	Hardness on Gr 91 welds	Hardness	B	Measurement	100%	10%	Manufacturer's standard	186-300 BHN	Test Report	√	P	W	V		

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बी एच ई एल BHEL		MANUFACTURER'S NAME & ADDRESS: BHEL TIRUCHIRAPPALLI APPROVED SUPPLIERS		STANDARD QUALITY PLAN							QWI NO:SQP:SD:06 REV.NO.00 DATE: 14/09/2015 PAGE: 4 OF 5			
				PRODUCT: CONTROL VALVES – STEAM & WATER APPLICATIONS (SH, RH SPRAY BLOCK; SB PRESSURE REDUCING; WARM KEEPING LEVEL; START-UP SYSTEM:SEPARATOR LEVEL & MINIMUM ECONOMIZER FLOW)										
				SUB-SYSTEM :Steam Generator Package										
SL NO	COMPONENT & OPERATIONS	CHARACTERISTICS	CLASS	TYPE OF CHECK	QUANTUM OF CHECK		REFERENCE DOCUMENT	ACCEPTANCE NORMS	FORMAT OF RECORD	AGENCY			REMARKS	
					M	C/N				M	C	N		
1	2	3	4	5	M	C/N	7	8	9	D*	**	10	11	

3.0	FINAL INSPECTION & TESTING													
3.1	Performance Test on assembled valves fitted with all accessories	Leak tightness & pressure resistance of Body & Bonnet joint	A	Hydro Test	100%	10%	ASME 16.34/ ISA 75.19	No Leak	Test Report	√	P	W	V	IBR Form III C shall be submitted
3.2		Leak through seat	A	Seat Leak Test (Air/Hydro test)	100%	10%	FCI 70.2 /BHEL approved datasheet	FCI 70.2 /BHEL approved datasheet	Test Report	√	P	W	V	
3.3		Travel, linearity, hysteresis, valve opening & closing time, fail safe feature, functioning of all accessories.	A	Performance/ Calibration Test	100%	10%	IEC 60534-4/ BHEL approved datasheet	BHEL approved datasheet	Test Report	√	P	W	V	
3.4		Packing Tightness*	A	Packing Leak Test	100%	10%	ASME B16.34/ BHEL approved datasheet	ASME B16.34/ BHEL approved datasheet	Test Report	√	P	W	V	*can be done during hydro test (CI 3.1)
3.5		Control valve flow Capacity# (Discharge Vs Opening)	A	Capacity Test (Cv test)	1/Type	1/Type	BHEL approved datasheet /ISA 75.02	ISA 75.11	Test Report#	√	P	V #	V	#Type test witnessed by BHEL or done at FCRI shall be submitted for review & clearance by BHEL Engg (certificate valid for 5 years).
3.6		Actuator chamber-Strength & leakage	B	Air Leak Test	100%	10%	Manufacturer's std	No leak when tested @ 1.5 times supply press or 60 psi max.	Test Report	√	P	W	V	
3.7	Actuator & Positioner	Model, SI No, Qty, Rating	B	Visual & Document Review	100%	10%	BHEL approved datasheet	BHEL approved datasheet	Test Report/ COC	√	P	W	V	
3.8	Final Inspection	Overall Dimensions*	B	Measurement	100%	10%	BHEL approved GA Drawing	BHEL approved GA Drawing	Test Report	√	P	W	V	*including OD, d1, thickness, etc.

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बी एच ई एल BHEL		MANUFACTURER'S NAME & ADDRESS: BHEL TIRUCHIRAPPALLI APPROVED SUPPLIERS		STANDARD QUALITY PLAN							QWI NO:SQP:SD:06 REV.NO.00 DATE: 14/09/2015 PAGE: 5 OF 5			
				PRODUCT: CONTROL VALVES – STEAM & WATER APPLICATIONS (SH, RH SPRAY BLOCK; SB PRESSURE REDUCING; WARM KEEPING LEVEL; START-UP SYSTEM:SEPARATOR LEVEL & MINIMUM ECONOMIZER FLOW)										
				SUB-SYSTEM :Steam Generator Package										
SL NO	COMPONENT & OPERATIONS	CHARACTERISTICS	CLASS	TYPE OF CHECK	QUANTUM OF CHECK		REFERENCE DOCUMENT	ACCEPTANCE NORMS	FORMAT OF RECORD	AGENCY			REMARKS	
										M	C	N		
1	2	3	4	5	M	C/N	7	8	9	D*	**	10	11	

4.0 PAINTING, PRESERVATION & PACKING														
4.1	Painting	Surface Prep, Primer & finish coats & Shade, DFT	B	Visual & Measurement	100%	100%	BHEL approved painting Scheme	BHEL approved painting Scheme	Test Report	√	P	V	V	
4.2	Identification #	Marking /Name Plate & Tagging	B	Visual	100%	100%	BHEL Spec & PO	BHEL Spec & PO	Test Report	--	P	V	V	#with IBR stamp
4.3	Packing*	Cleanliness, Water-proof packing & Stability	B	Verification	100%	100%	Manufacturer's practice	Manufacturer's practice	Packing List	√	P	V	V	*with site storage & handling instructions.
4.4	Spare Parts	Parts, Type, Qty, Dimensions, etc.	B	Visual & Measurement	100%	100%	BHEL approved datasheet & PO	BHEL approved datasheet & PO	IR/COC	√	P	V	V	

Note: 1. Customer verification stages specified above shall be followed. Any witness stages shall be as specified/indicated in BHEL PO.

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	PURCHASE / MM / BOI SUB DELIVERY – ENQUIRY - DEVIATION		
ENQUIRY	1802000473/14 dated 03.08.2020		
DESCRIPTION	Soot Blower Pressure Reducing Valves		
SPECIFICATION	a) BM/CV SPEC: 001 Rev: 04 b) TDC: TCI: 317 / REV 06 c) CI:BHUSAWAL:ECI:CV	DRG. No.	a) Drg. 3-97-599-24099/02 b) Pneumatic hook up diagram
DOC. REFERENCE	BHEL ENQ. CALLED FOR	FIRM'S ALTERNATE OFFER	

CERTIFIED THAT OTHER THAN THE ABOVE DEVIATIONS, WE ARE ACCEPTING ALL THE OTHER SPECIFICATIONS AND REQUIREMENTS IN FULL TO YOUR ENQUIRY

STATION:

DATE:

SIGNATURE OF FIRM'S REPRESENTATIVE

FIRM SEAL

NOTE: 1. Deviations should be taken only in the extreme case.

2. If necessary, use additional sheets with page control number.

BANK GUARANTEE FOR PERFORMANCE SECURITY

(Non-Judicial Stamp paper/e-stamp paper of appropriate value as per Stamp Act prevailing in the State(s))

Bank Guarantee No:

Date:

To

NAME

& ADDRESSES OF THE BENEFICIARY

IFSC AND MICR CODE

Dear Sirs,

1. In consideration of Bharat Heavy Electricals Limited (hereinafter referred to as the 'Employer' which expression shall unless repugnant to the context or meaning thereof, include its successors and permitted assigns) incorporated under the Companies Act, 1956 and having its registered office at _____¹ through its Unit at.....(name of the Unit) having awarded to (Name of the Vendor / Contractor / Supplier) (VENDOR CODE) with its registered office at _____² hereinafter referred to as the ' Vendor / Contractor / Supplier ', which expression shall unless repugnant to the context or meaning thereof, include its successors and permitted assigns), a contract Ref No.....dated³ valued at Rs.....⁴ (Rupees -----)/FC.....(in words.....) for⁵ (hereinafter called the 'Contract') and the Vendor / Contractor / Supplier having agreed to provide a Contract Performance Bank Guarantee, equivalent to% (... Percent) of the said value of the Contract to the Employer for the faithful performance of the Contract,

2. we,, (hereinafter referred to as the Bank), having registered/Head office at and inter alia a branch at being the Guarantor under this Guarantee, hereby, irrevocably and unconditionally undertake to forthwith and immediately pay to the Employer any sum or sums upto a maximum amount of Rs -----⁶ (Rupees -----) without any demur, immediately on first demand from the Employer and without any reservation, protest, and recourse and without the Employer needing to prove or demonstrate reasons for its such demand.

3. 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. _____.

4. We undertake to pay to the Employer any money so demanded notwithstanding any dispute or disputes raised by the Vendor / Contractor / Supplier in any suit or proceeding pending before any Court or Tribunal, Arbitrator or any other authority, our liability under this present being absolute and unequivocal.

5. The payment so made by us under this Guarantee shall be a valid discharge of our liability for payment thereunder and the Vendor / Contractor / Supplier shall have no claim against us for making such payment.

6. We thebank 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 Contract/satisfactory completion of the performance guarantee period as per the terms of the Contract and that it shall continue to be enforceable till all the dues of the Employer under or by virtue of the said Contract have been fully paid and its claims satisfied or discharged.

7. We.....BANK further agree with the Employer that the Employer 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 Contract or to extend time of performance by the said Vendor / Contractor / Supplier from time to time or to postpone for any time or from time to time any of the powers exercisable by the Employer against the said Vendor / Contractor / Supplier and to forbear or enforce any of the terms and conditions relating to the said Contract and we shall not be relieved from our liability by reason of any such variation, or extension being granted to the said Vendor / Contractor / Supplier or for any forbearance, act or omission on the part of the Employer or any indulgence by the Employer to the said Vendor / Contractor / Supplier or by any such matter or thing whatsoever which under the law relating to sureties would but for this provision have effect of so relieving us.

8. The Bank also agrees that the Employer at its option shall be entitled to enforce this Guarantee against the Bank as a principal debtor, in the first instance without proceeding against the Vendor / Contractor / Supplier and notwithstanding any security or other guarantee that the Employer may have in relation to the Vendor / Contractor / Supplier's liabilities.

9. This Guarantee shall remain in force upto and including.....⁷ and shall be extended from time to time for such period as may be desired by Employer.

10. This Guarantee shall not be determined or affected by liquidation or winding up, dissolution or change of constitution or insolvency of the Vendor / Contractor / Supplier but shall in all respects and for all purposes be binding and operative until payment of all money payable to the Employer in terms thereof.

11. Unless a demand or claim under this guarantee is made on us in writing on or before the⁸we shall be discharged from all liabilities under this guarantee thereafter.

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

13. We..... BANK lastly undertake not to revoke this guarantee during its currency except with the previous consent of the Employer in writing.

Notwithstanding anything to the contrary contained hereinabove:

a) The liability of the Bank under this Guarantee shall not exceed.....⁶

- b) This Guarantee shall be valid up to⁷
- c) Unless the Bank is served a written claim or demand on or before (minimum 3 to 6 months from the expiry date)⁸ all rights under this guarantee shall be forfeited and the Bank shall be relieved and discharged from all liabilities under this guarantee irrespective of whether or not the original bank guarantee is returned to the Bank.

14. We, _____ Bank, have power to issue this Guarantee under law and the undersigned as a duly authorized person has full powers to sign this Guarantee on behalf of the Bank.

For and on behalf of
(Name of the Bank)

Dated.....

Place of Issue.....

BANK EMAIL ID:

BANK PHONE NO:

AUTHORISED SIGNATORIES CELL PHONE NO:

BANK FAX NO:

¹ NAME AND ADDRESS OF EMPLOYER I.e Bharat Heavy Electricals Limited

² NAME AND ADDRESS OF THE VENDOR /CONTRACTOR / SUPPLIER.

³ DETAILS ABOUT THE NOTICE OF AWARD/CONTRACT REFERENCE

⁴ CONTRACT VALUE

⁵ PROJECT/SUPPLY DETAILS

⁶ BG AMOUNT IN FIGURES AND WORDS

⁷ VALIDITY DATE

⁸ DATE OF EXPIRY OF CLAIM PERIOD

List of Consortium Banks

Sl. No	Nationalised Banks	Sl. No	Public Sector Banks
1	State Bank of India	18	IDBI
2	Allahabad bank		
3	Andhra bank	Sl. No	Private banks
4	Bank of Baroda	19	Axis Bank
5	Canara Bank	20	HDFC
6	Corporation bank	21	ICICI
7	Central bank	22	The Federal Bank Limited
8	Indian Bank	23	Kotak Mahindra Bank
9	Indian Oversea Bank	24	Indusind Bank
10	Oriental bank of Commerce	25	Yes Bank
11	Punjab National Bank		
12	Punjab & Sindh Bank	Sl. No	Foreign banks
13	Syndicate Bank	26	CITI Bank N.A
14	UCO Bank	27	Deutsche Bank AG
15	Union Bank of India	28	HSBC
16	United Bank of India	29	Standard Chartered Bank
17	Vijaya Bank	30	J P Morgan

/ On Bidder's office letter pad /

Self-Declaration

Enquiry No.	<u>1802000473</u>
Enquiry Date	<u>03.08.2020</u>

In line with Government public procurement order Number P-45021/2/2017-B.E-II dated 15.06.2017, and further modified order dt. 28.05.2018, 29.05.2019 & 04.06.2020

I / We hereby declare that I / We are a “Local Supplier” meeting the requirement of minimum local content (.....%) defined in the above government notification for the goods against above mentioned enquiry Number.

Details of location at which local value addition will be made is as follows:

Door No.	
Street / Address 1	
Street / Address 2	
District	
State	
Country	
PIN Code	

We also understand that the false declarations will be considered as breach of Integrity and liable for action.

For Company Name:

Seal:

Signature:

Date:

Place:

(Please fill all the yellow color field)

Certificate by Chartered Accountant on letter head

This is to Certify that M/S
(hereinafter referred to as 'company') having its registered office at
is registered under MSMED Act 2006, (Entrepreneur
Memorandum No (Part-II) dtd:.....,
Category: (Micro/Small)). (Copy enclosed).

Further verified from the Books of Accounts that the investment of the company as per the
latest audited financial year as per MSMED Act 2006 is as follows:

1. **For Manufacturing Enterprises:** Investment in plant and machinery (i.e. original cost
excluding land and building and the items specified by the Ministry of Small Scale Industries vide its
notification No.S.O.1722(E) dated October 5, 2006 :
Rs.....Lacs
2. **For Service Enterprises:** Investment in equipment (original cost excluding land and building and
furniture, fittings and other items not directly related to the service rendered or as may be notified under the MSMED
Act, 2006:
Rs.....Lacs

(Strike off whichever is not applicable)

The above investment of Rs.....Lacs is within permissible limit of
Rs.....Lacs forMicro / Small (Strike off which is not applicable)
Category under MSMED Act 2006.

Or

The company has been graduated from its original category (Micro/ Small) (Strike off which is not
applicable) and the date of graduation of such enterprise from its original category is
(dd/mm/yyyy) which is within the period of 3 years from the date of graduation of such
enterprise from its original category as notified vide S.O. No. 3322(E) dated 01.11.2013 published
in the gazette notification dated 04.11.2013 by Ministry of MSME.

Date:



(Signature)

Name -

Membership number -

Seal of Chartered Accountant