434-003/A	ENQUIRY VALVES	**Bharat Heavy Electricals Limited** (A Government of India undertaking) HIGH PRESSURE BOILER PLANT PURCHASE DEPARTMENT/VALVES TIRUCHIRAPPALLI-620 014.	Phone: +91 (431) 257 7096/4047 Email: sivabala@bhel.in kathir@bhel.in

ENQUIRY NO.	DATE	DUE DATE FOR QUOTATION
ENSFV00195	**12.05.2018**	**07.06.2018**

Please quote Enquiry No., and due date in correspondences
This is only a request for quotation and not an order.

Date, Time &
Venue of tender opening:

07.06.2018 at 14.30 Hrs.
at
The Tender Opening Cell/Valves
Room No. -26, Building -24
Bharat Heavy Electricals Limited
Tiruchirappalli - 620014,
Tamilnadu, India

Email: tender_cell@bheltry.co.in

Scope of supply

Supply of Spring Loaded Safety Valves as per the purchase specification enclosed.

-List of Annexures

01. Annexure 0A - SCOPE OF SUPPLY
02. Annexure 1A - DATA SHEET VDS:ER:1818 Rev: 02
03. Annexure 1B – SPEC:ERV:014 Rev:05
04. Annexure 1C - Spec C&I for ERV-019 Rev02
05. Annexure 1D - QA REQUIREMENT
06. Annexure 1E – QP FORMAT
07. Annexure 2A - GENERAL TERMS AND CONDITIONS
08. Annexure 2B - SPECIAL TENDER TERMS
09. Annexure 2C - IBR APPROVED INSPECTION AGENCIES
10. Annexure 2D - CONFIRMATION TO THE TERMS AND CONDITIONS
11. Annexure 3A - PBG FORMAT
12. Annexure 3B - LIST OF CONSORTIUM BANKS
13. Annexure 4A – <NOT APPLICABLE>
14. Annexure 4B - SCHEDULE OF DEVIATIONS
15. Annexure 4C - UNPRICED FORMAT IMPORT
16. Annexure 4D - PRICED BID FORMAT IMPORT

The rate of Excise Duty and Sales Tax, Prevalent on the date of quotation, should be clearly indicated in the quotation itself.

Please, submit your lowest quotation in duplicate subject to our terms and conditions, for the above materials, so as to reach us on or before the due date by 14.00 Hrs. (IST)

Quotations will be opened at 14.30 Hrs. (IST) on the due date in the presence of tenderers who may like to be present.

Late tenders will not be considered.

Yours faithfully,

For Bharat Heavy Electricals Ltd

Sivabala Shanmugam
Sr. Engineer/Purchase/Valves

ANNEXURE 0A
SCOPE OF SUPPLY

ENSFV00195 - SCOPE OF SUPPLY					
Material Code	**Material Description**	**Qty**	**Sale Order**	**Item**	**Project Name**
974611360000	SHERV & CTRL ACCESSORIES-TNEB-1818-1821	2	3503186	000017	UPPUR 2X800MW UNIT 1
974611360000	SHERV & CTRL ACCESSORIES-TNEB-1818-1821	2	3503183	000017	NORTH CHENNAI 1x800 TPS ST-III
974611360000	SHERV & CTRL ACCESSORIES-TNEB-1818-1821	2	3503187	000017	UPPUR 2X800MW UNIT 2
	TOTAL	**6**			

ANNEXURE 1A
DATA SHEET

Bharat Heavy Electricals Ltd., Trichy-14, Valves Engineering 365-003/A			**DATA SHEET** **ELECTROMATIC RELIEF VALVE** **VDS:ER:1818 Rev: 02**		**Sheet: 1 of 4** **Date: 11.05.2018** **Cust no: 1818, 1821 & 1822**
		Customer:	**M/s TANGEDCO** **A/c. North Chennai 1x800MW & Uppur 2x800MW**		**Pre: Rabin R** **Appd: E.Athiannavi**
1	*Serial no.*		1		
2	*Tag no.*		10LBA11-AA701, 10LBA12-AA701		
3	*Location*		**SUPERHEATER OUTLET**		
4	*Required quantity*	nos.	2 nos. / Unit		
5	*Fluid to be handled*		STEAM		
6	*Required Capacity*	kg/h	**372750 (for 2 valves)**		
7	***Set Pressure***	kg/cm²(g)	292.7		
8	***Relieving Temperature***	°C	603±5°C		
9	*Valve Type*		**Power Control-Pneumatic Actuator**		
10	*Orifice Designation*		*		
11	*Calculated Orifice Area*	mm²	*		
12	*Selected Orifice Area*	mm²	*		
13	***Rated Capacity per Valve***	kg/h	*		
14	*System Design Temperature*	°C	608.0		
15	*System Operating Pressure*	kg/cm²(g)	276.9		
16	*System Design Pressure*	kg/cm²(g)	299.0		
17	*Imposed Back Pr.*		Atmosphere		
18	*Allowable Over Pr.*		As per ASME Sec-I		
19	*Blowdown*	%	As per ASME Sec-I		
20	*Applicable Code*		ASME Sec-I / IBR		
21	***Valve Model***		*		
22	*Inlet Size & Rating*		*		
23	*Inlet Type/Standard*		Butt Weld/ASME B16.25		
24	*Outlet Size & Rating*		*		
25	*Outlet Type/Standard*		Flanged/ASME B16.5		
26	*Body Material*		SA182 F92 (or) Equivalent		
27	*Disc Material*		*		
28	*Nozzle/Seat Material*		*		
29	*Inlet Neck Material*		SA182 F92		
30	*Guide Material*		*		
31	*Spindle Material*		*		
32	*Spring Material*		*		
33	*Lift*	mm	*		
34	*Weight*	kg	*		
35	*Reaction Force*	kgf	*		
36	*Opening/Raising Time*	Seconds	*		
37	*Noise generated at source*	dBA	*		
38	*Inspection/Certification*		Hyd.Test (Form-IIIC as per IBR regulation 269)		
39	*Required Accessories*		All control accessories (Air Pr. available = 4.0 to 7.0 kg/cm²g, Electrical supply = 220V DC)		

Notes:

* *means Vendor to specify*

1. Offers received from vendor shall include the spares indicated in Annexure - I also. Offers without spares will be rejected consequently.
2. BHEL reserves the right to change the spares requirements based on the customer need on PO.
3. Valve inlet edge preparation style shall be as per Annexure - III.

GENERAL NOTES for Power Assisted Relief Valves

1. Selected Valve model should be the same for one particular location.
2. Tag nos. are given for one unit only, for other units will be furnished later.
3. BHEL approved procedures should be followed for inspection, testing and certification.
4. Test certificates should be in line with IBR form-IIIC.
5. Site Information given in Annexure –II should also be considered in the ERV design offered

ANNEXURE - I

The details of spares components and required quantity for a given material code are given below.

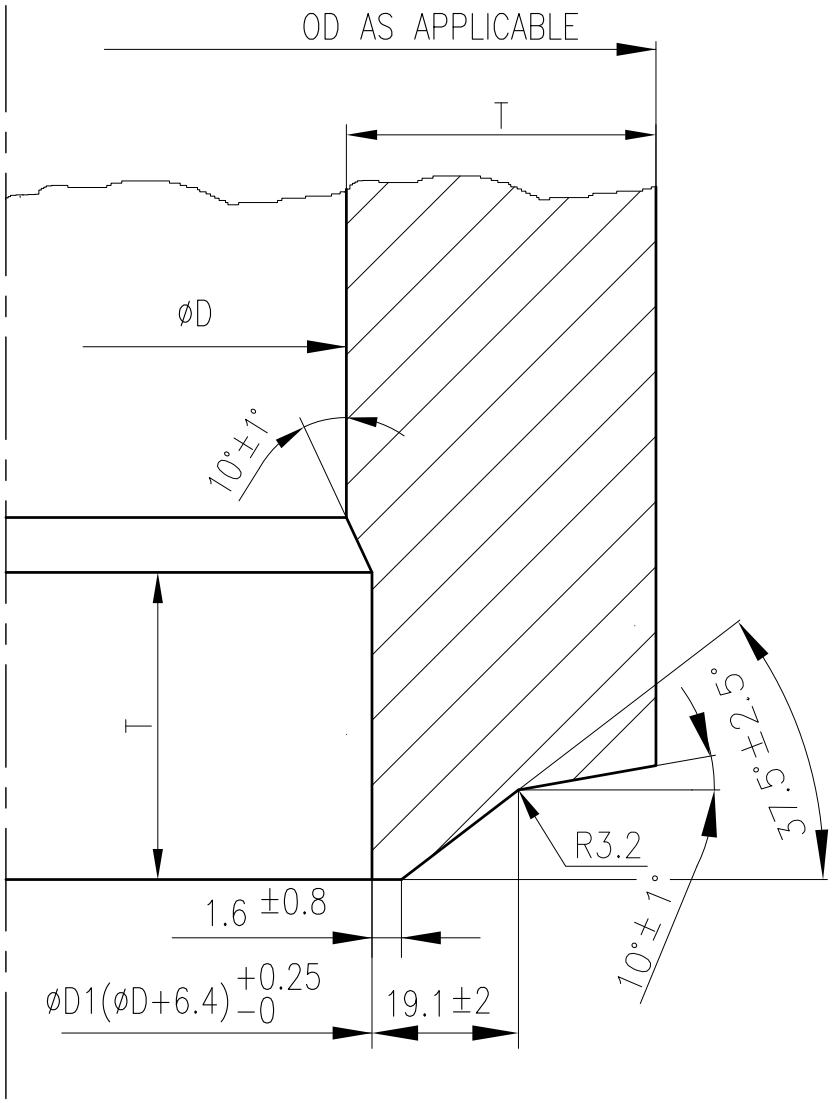
A) Material Code 974611360001 – 5 years operational Spares of the offered SH ERV model for TANGEDCO North Chennai & Uppur Projects (Material code of individual spare component will be provided later)
B) Material Code: 974611370000 - Complete Power Assisted Relief Valve without Actuator and Controls (SH ERV) for TANGEDCO North Chennai & Uppur Projects

ANNEXURE - II

SITE INFORMATION

1. Ambient Temperature (Min) : 15°C
   Ambient Temperature (Max) : 50°C
2. Relative Humidity : 75%
3. Height above MSL : 10 m
4. Seismic Zone : Zone III as defined in IS1893-2002
   a. Zone Factor : 0.16
   b. Importance Factor : 1.75
5. Wind Data - Calculations for wind effect shall be in accordance with IS 875 (Part 3):1987
   a. Basic Wind Speed : 50m/sec

ANNEXURE – III



GIVEN DIMENSIONS ARE IN MILLIMETERS

VALVE INLET EDGE PREPARATION STYLE

ANNEXURE 1B
VALVE SPECIFICATION

TABLE OF CONTENTS

05	Revised based on the input from Boiler Mountings/FB and C&I/FB	RABIN R	E ATHIANNAVI	E ATHIANNAVI	28.02.17
04	QA Comments included	S. MADHULINGAM	E. ATHIANNAVI	E. ATHIANNAVI	18.05.15
03	Sl no:03 revised and Sl no:07 Erection and commissioning support added	S. MADHULINGAM	E. ATHIANNAVI	E. ATHIANNAVI	16.08.13
02	Performance requirements added.	S. MADHULINGAM	E. ATHIANNAVI	E. ATHIANNAVI	03.01.11
01	Revised based on vendor feedback	S. MADHULINGAM	E. ATHIANNAVI	E. ATHIANNAVI	12.10.10
00	FIRST ISSUE	S. MADHULINGAM	E. ATHIANNAVI	E. ATHIANNAVI	08.03.10
REV. NO	*DESCRIPTION*	*PREPARED BY*	*CHECKED BY*	*APPROVED BY*	*DATE*

1.0 GENERAL

This specification, together with the applicable data sheets relevant for the specific project, covers the requirements for the design, materials, construction details, manufacture, nameplate marking, inspection, testing, painting, packing and shipment of Electromatic Relief valves (Power Assisted Relief Valve). Electromatic relief valves (ERV) and Power assisted relief valves mean one and the same. The offer shall be submitted along with all the documents required in this specification.

1.1 Data sheet indicates the type, size, relieving capacity etc. of the required valve. However, vendor shall be responsible to size and select the proper valve with orifice relieving area meeting the indicated operating conditions.

1.2 Data sheets specify the minimum acceptable materials for body and Inlet neck. Alternate superior material of construction shall also be acceptable, with prior written approval by BHEL.

1.3 The design, material, construction, manufacture, inspection and testing of valves shall confirm to the latest applicable codes and standards and approved Quality Plan.

1.4 Supplier shall attach the list of supplied projects with the parameters, for each ERV for the given flow parameters or higher, which are in service for more than two years to consider the technical suitability.

1.5 The valves covered under this specification shall be governed by the following standards. However the valves confirming to other International Standards may be acceptable provided they are equivalent or superior to those listed below:

ANSI	:	American National Standards Institute
ASME	:	American Society of Mechanical Engineers
ASTM	:	American Society for Testing and Materials.
API	:	American Petroleum Institute
ISO	:	International Organization for Standardization
AWS	:	American Welding Society
IEC	:	International Electro technical Commission
ISA	:	Instrument Society of America
IBR	:	Indian Boiler Regulations
NEMA	:	National Electrical Manufacturers Association
NEC	:	National Electrical Code
NFPA	:	National Fire Protection Association
OSHA	:	Occupational Safety and Health Administration

1.6 All welding procedures and welders shall be qualified in accordance with the appropriate sections of the ASME Section-IX, IBR and AWS Code 1.1. When welders and welding procedures are qualified in accordance with codes other than those specified the Seller must take exception at the time of quotation. The procedures and materials proposed must be submitted to the Purchaser with the quotation for review and approval.

1.7 All materials, construction and design of the pressure parts shall conform in all respects to the applicable requirements of ASME Section-I and IBR.

1.8 All pressure retaining parts of the valve shall be made of materials, including specific limitations on various materials that are in full compliance with PG-5 of ASME Code Section-I.

1.9 Only materials listed and rated in B16.34 are acceptable and materials offered shall be appropriate to the design conditions listed.

1.10 All materials shall be readily identifiable. Mill test reports shall be obtained for all pressure boundary parts. These test reports shall be available for review at the Seller's shops. Copies of these are to be supplied to the Purchaser, along with valve supply.

1.11 Nothing in this Specification shall be construed as relieving the Seller of his responsibility for compliance with all applicable codes and regulations.

2.0 DESIGN AND CONSTRUCTION

2.1 FUNCTION: The function of ERV is to provide automatic or manual overpressure protection that can be controlled by the plant operator from the control room.

DESCRIPTION: ERVs (ERV) are used on the superheater and reheater outlet lead. The ERV size is to be determined by the Seller. The inlet connection is to be a butt weld type. The outlet is to be a flanged type. The materials for the body, seat, disk or ball are to be determined by the Seller. The ERV shall be provided with controls such as valve actuator, pressure controller, solenoid coil and limit switches, sub-panel suitable for remote mounting and any other equipment required to complete the system for effective functioning. Pneumatic actuator also acceptable and it should be suitable to operate at air pressure of 4.0 to 7.0 kg/cm²g. However vendor shall provide air accumulator to meet the occasional pressure drop in the line. The opening time of the valve should be within 2 seconds.

2.2 Sizing shall be carried out as per ASME Sec-I. The seller is required to accurately calculate and verify the sizes of the valves based upon the Valve Design conditions submitted by the Purchaser in the data sheet. Seller shall request any additional process data that may be required for proper analysis and sizing. Seller shall submit his calculations for Purchaser approval and record. ERV is intended for auxiliary overpressure protection. Hence non-certified capacity is acceptable.

2.3 Construction and Materials shall conform to ASME Section-I Code.

2.4 The design of valve seat and guiding arrangement shall ensure consistent operation reseating and tightness over several successive operations.

2.5 Unless otherwise mentioned, end connections details shall be as below:

a) Threaded end connections shall be NPT as per ANSI/ASME B1.20.1

b) Flanged end connections shall be as per ANSI/ASME B16.5.

c) Butt welding end connection as per ASME B16.25 (Welding End Detail for Joint Without Backing Ring).

2.6 Wherever stelliting of Disc and Seat bushing has been specified, it stands for stelliting of the seat area or the entire disc contour, unless otherwise specified.

2.7 The allowable tolerance in set pressure are as per ASME Section-I.

2.8 Nameplates shall be of white non-hygroscopic material with engraved black lettering and shall be suitably fixed on both front and rear sides. The nameplates shall have the following details minimum.

a) Tag number as per purchasers data sheet.

b) Manufacturers Model number

c) Manufacturers Serial number

d) Size: Inlet & Outlet

e) Bore diameter

f) Manufacturers name/trade mark.

g) Blow down as percentage of set pressure.

h) Accumulation as percentage of set pressure

i) Lift

j) Certified capacity of steam in Kg/h (with Type test report to be submitted)

k) Set Pressure

l) Relieving Temperature.

m) Cold bench set pressure.

n) Date of manufacture.

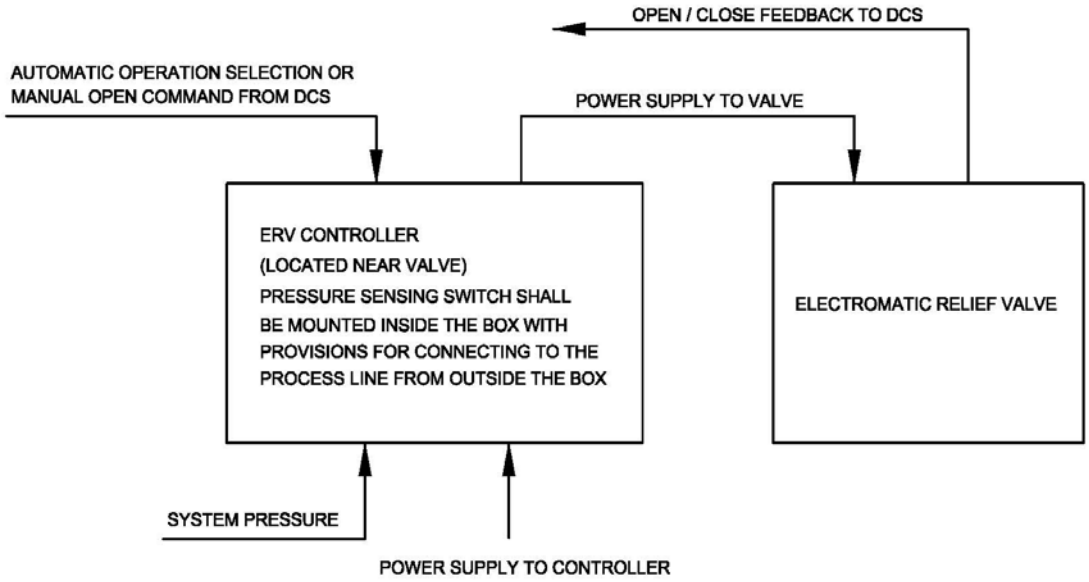
2.9 System should not contain Asbestos material in any form

3.0 CONTROLS & INSTRUMENTATIONS

3.1 Control and Instrumentation details shall be referred in the Specification No:SPEC:CI:019

3.2 ERV shall get power supply through a power contactor located in the controller, which is energized / de-energized by the switch depending upon the pressure. Typical sketch indicating the controller and valve connections is enclosed for reference.

3.3 OPEN / CLOSE FEEDBACK DIAGRAM



4.0 INSPECTION AND TESTING

4.1 All ERVs shall be inspected, tested and stamped as per applicable ASME codes. All valves shall be factory calibrated and set as per the process data submitted by the Purchaser and as per applicable ASME code.

4.2 Material, Mechanical and Chemical tests shall be performed in a manner as specified in the relevant codes.

4.3 All valve pressure retaining parts shall be subjected to hydrostatic test pressure as required by the IBR and other applicable standards. The contractor shall guarantee his work as capable of withstanding such hydrostatic tests and shall repair or replace, at his expenses, any item which fails to pass such tests at site.

4.4 Quality Assurance plan to be submitted for our review & approval. Sample quality plan attached.

4.5 The material test certificates (correlated to melt number) shall be furnished by the vendor with identification and correlation.

4.6 For Pressure retaining components such as Body, Inlet Neck, Seat Bushing (or) seat ring, Disc (or) Ball, Spindle, Guide etc. as applicable, Material test certificates (typical) shall be furnished for identification & correlation.

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

4.7.1 Steel Castings: 100% RT on butt weld joints/ends and change in dimension/shape shall be carried out.

4.7.2 100% MPI shall be done on base/body casting on all accessible surfaces in line with ASME B16.34.

4.7.3 Steel Forgings: 100% MPI and 100% UT on all areas shall be carried out on all forgings for valves. Also UT shall be carried where the thickness/ diameter is greater than 40mm.

4.7.4 Dye penetrate test as per ASTM E165 shall be performed on all machined surfaces of critical components.

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

4.7.6 Hardness testing shall be done as per material specification and on hardfaced surfaces of body seat, disc/wedge facing, spindle, backseat bushing, thrust plate etc., as applicable. The Purchaser's representative shall also check hardness of random samples.

4.7.7 Casting Radiography: For pressure rating below 600 class, one out of ten or part there of the castings per foundry, (irrespective of size and melt) shall be radiographed. If any defects are found (beyond the acceptable level of ASME B16.34), further sample of double the size of initial sampling shall be radiographed. If all samples are within acceptable limit of ASME B16.34, the lot will be accepted. Even if one is found defective, 100% of the lot will be radiographed and castings will acceptable limits of ASME/ANSI B16.34 shall be accepted. For pressure rating of 600 class and above. 100% RT will be done in line with ASME B16.34.

4.8 Each ERV, pressure retaining parts shall undergo hydrostatic test as per IBR/ASME B16.34 code. There shall not be any visible leakage during this test. IBR Form IIIC certificate to be furnished.

4.9 ERV shall be tested for opening at specified set pressure. Testing of ERV shall be with steam only. IBR Form IIIC to be furnished.

4.10 Seat Leakage test as applicable.

4.11 Type test report for capacity, shall be furnished for the selected valve series along with offer.

4.12 Joint welding of pressure parts to be RT entire length of weld with procedure and acceptance in accordance with ASME Section VIII paragraph UW-51 and Mandatory appendix 4.

5.0 ADDITIONAL REQUIREMENTS

5.1 Machined surfaces shall be suitably protected.

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

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

5.4 Valve Tag nos. shall also be incorporated in all the dispatch documents. In addition to the tagging requirements of ASME Section-I, each valve shall be assigned a unique valve number and have a permanent stamped metal tag bearing the "Valve Number" securely attached to the valve. (These valve numbers shall be provided to the Seller). Tags shall be attached either by welding or riveting to the valve body, if the body is large enough to do so. The method of attachment shall not degrade the pressure rating of the valve. Tag attachment to the smaller valve bodies shall be by minimum 20-gauge stainless steel wire. All tags shall be made of stainless steel plate and attached to the valve so as to be visible after valve installation. The tag number shall be punched or etched into the tag so that the tag number is recognizable even if the tag has been painted. Each valve accessory item furnished with the valve, but not securely attached to the valve, shall be provided with an identification tag also.

5.5 All painted surfaces shall be given a minimum coating 2.0 mils dry film thickness.

5.6 All unpainted surfaces shall be protected with a rust preventive, which can be removed by solvent washing.

5.7 Paint specifications are to be submitted for purchaser's review with bid.

5.8 All exposed machined surfaces shall be coated with suitable rust preventative coating prior to shipment.

5.9 The Seller shall adequately crate, block, anchor and protect equipment as required to prevent damage during overseas shipment and outdoor storage for a period of one (1) year at the site.

5.10 All threaded connections shall be plugged or capped with standard pipe plugs or caps.

5.11 List of Commissioning spares shall be quoted.

5.12 List of recommended spares for 5 years trouble free operation of valves shall be quoted.

5.13 Recommended List of special tools and equipment (required for assembling, complete dismantling and maintenance of all equipment supplied) to be provided and also to be supplied along with valve.

5.14 Vendor has to furnish complete inputs required for the selection of silencer (i.e. Noise level data, recommended input/ outlet pipe size etc.) along with the quotation.

5.15 Electrical supply details at the electrical terminals on all control equipment such as actuating devices, transmitters, panel stations, and control cabinets with typical wiring diagram to be provided by the vendor.

5.16 All electrical accessories including power and control cable between ERV and controller are to be provided by vendor considering a distance of 15m.

6.0 DOCUMENT REQUIREMENTS

6.1 Materials of all parts & trim details to be furnished by vendor along with quote.

6.2 Valve sizing calculations as per IBR or ASME Sec I with valve model, inlet outlet size, orifice details, Rated/ Certified Capacity.

6.3 Recommended Inlet Stub End connection Edge preparation details for our approval.

6.4 Copy of type test report for capacity, for the selected valve series.

6.5 Sound Pressure Level calculations.

6.6 Valve Outlet Pressure While relieving.

6.7 Reaction force Calculations as per ANSI/ ASME B31.1.

6.8 General arrangement drawing (including actual actuator used along with orientation and dimensions) with mounting details, BOM, Face to Face & overall dimensions, Marking for identification of recommended spare components.

6.9 Detailed QA plan for clients/BHEL approval.

6.10 Shipment weight & volume details.

6.11 Equipment preservation procedure during shipment, pre-erection storage period & Extended storage period.

6.12 Operation & maintenance manual - two sets of hard copies and two sets of soft copies in the form of CDs.

6.13 All GA drawings, Test Certificates (in the form of IBR form IIIC), Seat leakage test report, filled datasheets and Material test Certificates.

6.14 The following details should be submitted
i) Special tool list
ii) Rust preservation schedule
iii) Painting schedule
iv) Lubrication list

6.15 Recommended discharge piping, allowable forces on connections, weight of valve, product catalogue, and customer filled in data sheets.

6.16 The welding procedure and materials proposed of pressure boundary joints must be submitted to the purchaser with the quotation for review and approval.

6.17 Valve opening time & typical exhaust piping details.

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

6.19 Vendor should give confirmation to BHEL's technical specification and drawing. Any deviations from the specification or drawing are to be furnished separately as "Schedule of Deviation". If there is no deviation, vendor should indicate "No Deviation".

6.20 Hook up diagram

7.0 OFFER FOR ERECTION – COMMISSIONING SUPPORT AT SITE

7.1 The supplier shall depute their representative at project site for erection and commissioning support. Offer for providing erection and commissioning support shall be furnished by the supplier.

7.2 Special instructions which are required to be followed at site during erection and commissioning shall be furnished by the vendor.

FORM III-C

Certificate of Manufacture and test of Boiler Mountings and Fittings (REGULATION 269)

Name of part……..……
Maker's name and address…….
……
Intended working pressure…… …… .kg./cm^2
…… (lb./sq. inch) Hydraulic test pressure…… ..kg./cm^2
…… (lb./sq. inch)
Main dimensions……
Drawing Nos…… .. Identification Marks……
…… . Chemical composition…… . Physical test results…… .

(i) tensile strength……
(ii) transverse bend test…… .
(iii) Elongation…… ……

Certified that the particulars entered herein by us are correct.

The part has been designed and constructed to comply with the Indian Boiler Regulations for a working pressure of _____ and satisfactorily withstood a hydraulic test using water or kerosene or any other suitable liquid to a pressure _____ on the _____ day of _____ 20___ in the presence of our responsible representative whose signature is appended hereunder:

Maker Representative (Name and signature)

MAKERS_____

We have satisfied ourselves and the valve/fitting has been constructed and tested in accordance with the requirements of the Indian Boiler Regulations, 1950. We further certify that the particulars entered herein are correct.

Place_____

Name and signature of the Inspecting Officer who witnessed the tests.

Date_____ 20___.

Name and signature of the Inspecting Authority Strike out which is not applicable.

Note: In the case of valve chest made and tested by well known Foundries or Forges recognised by the Central Boilers Board in the manner as laid down in regulations 4A to 4H, particulars regarding the material as certified by them, in any form, shall be noted in the appropriate columns or paragraphs in the certificates and in case of certificates from Well Known Foundries or Forges is produced, such certificate may be accepted in lieu of the certificate from Inspecting Authority in so far as it relates to the testing of material specified in the Form.

ANNEXURE 1C
C&I SPECIFICATION

1 Valve shall be operable using single coil solenoid valve. Solenoid shall be energise to open and de-energise to close type.

2 ERV/controller shall be suitable for operating with 220VDC, as applicable for this contract.

3 One number local controller shall be provided near each ERV for controlling the operation of valve based on Process Pressure and Remote Commands.

a) Controller shall have capability for receiving the process pressure from pressure switch/ transmitter and open/close the valve accordingly.
b) Controller shall be suitable satisfactory operation at ambient temperature expected near the boiler 70°C with dusty and humid conditions.
c) Controller shall be provided with degree of protection of IP55 as a minimum.
d) Controller shall have necessary in-built protection and controls necessary for valve as well as provisions for accepting the pressure signal from the switch/transmitter. Controller shall have provisions for isolating power supply with suitable MCCB/MCB with provision for locking at ON/OFF positions.
e) ERV controller shall operate based on the process pressure. However, in addition to the operation based on process pressure, controller should have provisions to turn on the valve using command from DCS irrespective of process pressure. No local operation is envisaged.

4 Each controller shall be provided with one number of pressure switch / pressure transmitter for sensing steam pressure upstream of ERV. Switch/transmitter shall be supplied along with required accessories (such as siphon, connectors, manifold and any other equipment required to complete the system for effective functioning).

a) If switch is provided, the same shall have dual set point, one for open and second for closing valve. Pressure switch shall meet the following specifications
   i. Accuracy of ±0.5%
   ii. Repeatability of ±1%.
   iii. If mounted separately, the same shall be suitable for IP:55 degree of protection with corrosion resistant coating

b) If transmitter is provided, the same shall meet the following specifications
   i. Working principle : Capacitance / Piezoelectric / Silicon resonance / Digital Inductance.
   ii. Type : Microprocessor based 2 wire type.
   iii. Output : 4 - 20 mA DC with power supply of 24V DC ± 10%
   iv. Turn down ratio shall be 30:1
   v. Stability : ± 0.25 % of calibrated span for six months
   vi. Housing: Weather proof as per IP-55 with durable corrosion resistant coating
   vii. Over pressure: The diaphragm of transmitters shall be designed to withstand static pressure of 1.5 times the max. span without damage or permanent deformation.
   viii. Zero & span adjustment: Easily accessible & adjustable continuously at field.
   ix. Accuracy : ± 0.5 % of calibrated span
   x. Sensitivity / dead band: 0.1 % of calibrated range.
   xi. Repeatability: 0.2 % of calibrated range.
   xii. Thermal Drift: Max. 0.04 % per Deg. C
   xiii. Linearity: 0.2 % throughout the range irrespective of burden on the circuit.

c) Pressure port of switch / transmitter shall have 1/4" NPT (F) process connection and shall preferably have 3/4" BSC (F) electrical connection.
d) Make of pressure switch/ transmitter shall be subjected to BHEL approval. Make shall be indicated in the offer itself.

5 Open/close limit switches (potential free) with 2NO+2NC contacts to be supplied along with valve for feedback indication to DCS.

6 Documents :

a) Vendor to indicate all utility requirements for ERV and field controller such as power & air supply requirement / quantity/ rating etc. along with the offer for BHEL to arrange the same.
b) Detailed write up on the system to be furnished along with the offer.
c) Terminal details for ERV controller/valve showing all the signal interfaces required with BHEL's DCS

7 BHEL Scope shall be limited to the following. Other than the below all necessary materials shall be supplied by the vendor.

a) BHEL will supply required instrument/service air (as indicated by vendor during offer stage) up to one common point for each ERV (within two meters from the valve) terminated with an Nb15 isolation valve. Further, it shall be vendor's responsibility to make arrangements for connecting air to their equipment. Necessary material also shall be in vendor scope only.
b) BHEL will provide power (220VDC) up to the local ERV controller supplied by vendor. Further any cables within the systems provided by vendor shall be in their scope only.
c) Pressure switch/transmitter shall be supplied along with required accessories (such as siphon, connectors, manifold and any other equipment required to complete the system for effective functioning). Necessary recommended erection drawings to be furnished by vendor. BHEL will do the necessary erection based on the drawings furnished by vendor. BHEL will terminate the process measurement connection with dual isolation valves.
d) Any interconnecting cables/ tubes/ other materials required for interconnecting with their system shall be in vendor scope only.

8 Erection

Erection of ERV controller will be done by BHEL based on the recommended drawings supplied by vendor

9 Commissioning

Commissioning of the system shall be in vendor scope. Vendor shall ensure successful handing over of the system to customer and signing of handing over protocol.

ANNEXURE 1D
QUALITY REQUIREMENTS

Additional Quality Requirements

1. Raw Materials shall be as per BHEL Engineering Specification, IBR and international material specifications.
2. Welders shall be qualified as per IBR. Welding procedures shall be qualified as per ASME BPVC Sec IX.
3. Heat Treatment shall be as per qualified WPS and IBR. Wherever Gr 91 is involved in the welds, such welds shall be post weld heat treated at 760±10 Deg C with soaking time of one hour/inch of job thickness.
4. NDE on raw materials, machined edges and welds shall be carried out & accepted as below, as applicable:

Sl No	NDE Method	Test Method	Acceptance Criteria
1	UT – on forgings	ASTM A388	ASME BPVC Sec VIII Div 2 Cl 3.3.4
2	UT on Pipes	ASTM E213	ASTM E213 with 5% notch (0.3 mm min & 1.5 mm max)
3	RT	ASME BPVC Sec V	ASME BPVC Sec VIII Div 1 UW-51 & Mandatory Appx 4
4	MT	ASTM E709	ASME BPVC Sec VIII Div 1 Mandatory Appx 6
5	PT	ASTM E165	ASME BPVC Sec VIII Div 1 Mandatory Appx 8

5. Hydrostatic test, seat leak test and functional test shall be carried out as per BHEL Engineering Specification & BHEL/Customer approved datasheets. IBR Form III-C shall be submitted
6. All forgings/bars of diameter/wall thickness above 40 mm shall be UT tested.
7. Forgings shall be certified in IBR Form III-G and Castings, if used, shall be certified in IBR Form III-F.
8. Hardness testing shall be done on raw materials of Gr 91/92 as per the material specifications and results reported in MTCs.
9. Hardness testing shall be done after PWHT on welds wherever Gr 91/92 materials are involved and shall be within 195-300 HBW and results reported in inspection records.
10. All fillet welds shall be MPI/LPI tested after PWHT.

Note: - Vendor must submit their acceptance on above referred points and in case of any deviation please mention them on Schedule of deviation sheet.

ANNEXURE 1E
QUALITY PLAN FORMAT

MFGR.'s LOGO	MANUFACTURER'S NAME AND ADDRESS	MANUFACTURING QUALITY PLAN		PROJECT : PACKAGE : CONTRACT NO. : MAIN-SUPPLIER:
		ITEM : SUB-SYSTEM:	QP NO.: REV.NO.: DATE: PAGE: …. OF….	

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.	6.		7.	8.	9.	D*	** 10.			11.

MANUFACTURER/ SUB-SUPPLIER	MAIN-SUPPLIER
SIGNATURE	

LEGEND: * RECORDS, INDENTIFIED WITH "TICK" (√) SHALL BE ESSENTIALLY INCLUDED BY SUPPLIER IN QA DOCUMENTATION.
** **M:** MANUFACTURER/SUB-SUPPLIER **C:** MAIN SUPPLIER, **N**: NTPC
P: PERFORM **W**: WITNESS AND **V:** VERIFICATION. AS APPROPRIATE,
CHP: NTPC SHALL IDENTIFIED IN COLUM "N" AS ' W"

FOR NTPC USE

DOC. NO.:		REV…… CAT…..
REVIEWED BY	APPROVED BY	APPROVAL SEAL

ANNEXURE 2A

GENERAL TERMS & CONDITIONS

BHARAT HEAVY ELECTRICALS LTD

VALVES PURCHASE
Trichy - 620 014, India
GENERAL TERMS AND CONDITIONS (ENSFV00195)

1. QUOTATIONS:

a. **BID system:** The offers are invited in Two part bid system (Part I will be Techno-commercial bid and part II will be Price Bid). Techno-commercially suitable vendors alone will be intimated for price bid opening.

b. **Submission of tender:**

i. ~~Tender called through E-Procurement mode: The bidder shall submit the bid online in BHEL e-Procurement portal at https://bheleps.buyjunction.in~~

~~The bidder would be required to register on the above e-procurement portal for submitting their bids. Offers through mail and Hardcopies are not acceptable.~~

ii. Tender called through Non- Procurement mode: 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 per unit for each type. Tender should send to the below mentioned address:

The Tender Opening Cell / Valves
Room No. -26, Building -24
Bharat Heavy Electricals Limited
Tiruchirappalli - 620014, Tamil Nadu, India
Or
Email ID: tender_cell@bheltry.co.in

c. **Late tenders:** Tender received after 2.00 pm on due date will be considered as Late tender. Late tenders will not be considered under any circumstance.

d. **Regulations:** Tenders should be free from CORRECTION AND ERASURES. Corrections if any must be attested. All amounts shall be indicated both in words as well as figures. Where there is difference between amount quoted in words and figures, amount quoted in words shall prevail.

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.

g. **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.

h. **GST Number:** GST registration number, HSN number (Item wise) with applicable taxes should be mentioned in quotation. If the vendor is not GST registered the offer is liable for rejection.

i. **Deviation**. Any deviations from the specification are to be furnished separately as "Schedule of Deviation". If there is no deviation vendor should indicate "No Deviation".

j. **Confirmation:** Confirmation for compliance is to be given in the offer for all the techno commercial conditions specified in the specification.

2. COMMERCIAL TERMS & CONDITIONS:

a. **Terms of Payment:**

For Indigenous Suppliers: 100% after 45 days on satisfactory receipts and acceptance of material at BHEL stores/ Site acknowledgement.

Any deviation in the above payment terms except payment through LC/Advance 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 bidder. Offers of indigenous Suppliers with payment terms as CAD at site, Confirmed LCs, Advance payment or any other payment terms are liable for rejection.

For Import Supplies: Payment term is 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 case of Usance LCs the loading will be considered @ 1.5% on the offered Value. For unconfirmed LC at sight the loading will be considered @ 3.5% on the offered Value. CAD at site, Confirmed LCs, Advance payment or any other payment terms are liable for rejection.

b. Liquidated Damage: Liquidated damages shall be 0.5% of the total order value or part thereof subject to a maximum of 10% of the total order value. ~~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)

Under GST regime, BHEL has to discharge GST liability on LD recovered from suppliers/contractors. Hence applicable GST shall also be recoverable from suppliers/contractors on LD amount. For this Debit note will be issued by BHEL indicating the respective supply invoice number.

c. Delivery Terms:

For Indigenous Suppliers: FOR BHEL Trichy inclusive of freight and insurance

For import Supplies: CFR/CIF **CHENNAI SEA PORT** as per incoterm 2010

d. Validity of Offer: Prices should be fixed and valid for 120 days from the date of tender opening

e. Delivery period: Delivery schedule will be **24 Weeks** from the date of PO. If supplier offers more than the required delivery period BHEL will operate 0.5% loading factor for evaluation of their offer for every week delay.

f. Risk Purchase: 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. Non acceptance to risk purchase clause the offer is liable for rejection.

g. 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.

h. Miscellaneous: Any conditions which might have been quoted by the seller and are in contravention to the terms of PO and which have not been specifically accepted by Purchaser will not be applicable to the contract/PO.

i. Performance Bank Guarantee: If tender Calls for Performance Bank Guarantee, Vendor should provide a performance bank guarantee (PBG) in BHEL format for 10% of the total Purchase order value valid for warranty/guarantee period with an additional claim period of 2 months. PBG should be issued from list of consortium banks.

3. Compliance / Acceptance required for following points to ensure Input Tax Credit

a. 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.

b. All invoices shall bear the HSN Code for each item separately (Harmonized System of Nomenclature)/ SAC code (Services Accounting Code).

c. 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.

d. All documents like Mill Test Certificate, LR copy, Guarantee/Warrantee certificate, work completion certificate, any other document mentioned in PO, shall be sent along with the vehicle/consignment. For all consignments received within the calendar month, input credit will be availed within that month in line with monthly returns filing cycle. In case of any discrepancy in the document or non-submission of documents mentioned in the PO, then BHEL will not be able to accept or account the material, in such case availing of tax credit will be deferred to next month or so.

e. In case of discrepancy in the data uploaded by 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 (details to be uploaded in GSTN portal) for the shortages or rejections in the suppliers, within the calendar month notified by BHEL.

f. For any such delay in availing of tax credit for reasons attributable to supplier (as mentioned above), interest (calculated @ SBI Base Rate + 6%) along with penalty (if any) will be deducted/recovered for the delayed period i.e. from the month of receipt till the month tax credit is availed, from the running bills.

4. Special Provisions for Micro and Small Enterprises (MSE):

a. 20% of the tendered quantity is earmarked for MSE suppliers in this tender.
b. Out of the 20% tendered quantity reserved for MSE suppliers, 4% shall be earmarked for procurement from MSE owned by SC/ST entrepreneurs.
c. 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.
d. 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.

3. GENERAL CONDITIONS

a. BHEL reserves the right to finalize the tender as per item serial number wise or as a total package or project wise. Separate orders will be released for each project and documents should be supplied for each order separately.
b. BHEL reserves the right to increase or reduce or split the Tender Quantity and to NOT to order for some or all material based on the changes in project.
c. BHEL shall have the right to visit vendor works during the execution of contract along with end customer for verifying status, inspection and testing of the material.
d. BHEL reserves the right to negotiate or re-float the tender in case the quoted prices are not acceptable.
e. Supplier shall arrange packing to avoid lose or damages during Road Transport, Site handling & Storage.
f. BHEL reserves the right to finalize the tender either through price bid opening or through Reverse Auction route.
g. BHEL reserves the right to reject the offer of a particular bidder due to unsatisfactory past performance in the execution of a contract at any of BHEL projects / units.
h. The Drawings and Technical documents given in this enquiry are the sole property of BHEL. This should not be misused in any form.
i. Purchase Order, PO Item serial number, Material code, Quantity should be clearly marked on the packing
j. Confirmation for compliance is to be given in the offer for all the conditions specified above and to the respective Purchase Specification.
k. If any supplier is not honouring their own quotation or any of its conditions within the validity period, the action will be taken against those suppliers in line with "Guidelines for suspension of business dealings with suppliers/contractors" (refer www.bhel.com)

4. DOCUMENTATION:

a. **With Consignment:** Duplicate for transporter copy, Original Invoice, Packing List, Delivery Challan, O&M manual (if applicable) Material Test Certificate, Test Certificates, Compliance Certificate, Guarantee/Warrantee Certificate and other documents mentioned in PO/TDC/Drawing.
b. Online Submission: Supplier should upload the soft copy of all Test Certificates in BHEL website http://vis.bheltry.co.in/vis/index.jsp at Vendor information system tab.
c. **To Purchase:**
  i. FOR BHEL TRICHY case- Original Invoice, duplicate for transporter copy, Packing list, LWB and Delivery challan.
  ii. FOR Site case- Original Invoice, Original LWB, Original Packing List, Original IBR documents, Original despatch clearance Certificate and Inspection report, Test certificates as per PO, Original Site Acknowledgment etc.
d. **Identification:** Material code, Purchase Order, PO item serial number, Unique serial number if any should be provided in all despatch documents, materials and packing clearly.

5. TENDER EVALUATION:

a. PART I Techno-commercial Bid.

- **i.** All vendors should submit General arrangement drawing, datasheet and C&I diagram (If any) of the offered product
- **ii.** 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.
- **iii.** Offers from supplier not having technical capability or not agreed for commercial terms, will be rejected.

b. PART II Price Bid.

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

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ANNEXURE 2B

SPECIAL TERMS AND CONDITONS

BHARAT HEAVY ELECTRICALS LTD

VALVES PURCHASE
Trichy - 620 014, India
SPECIAL TERMS AND CONDITIONS (ENSFV00195)

1. All material should be inspected by IBR approved inspection agency, Customer and BHEL.
2. **Performance Bank Guarantee is Applicable**: Vendor should provide a performance bank guarantee (PBG) for 10% of the total Purchase order value valid for a guarantee period with an additional claim period of 2 months. Bank guarantee should be as per BHEL format from list of consortium Banks (Annexure 3B).
3. Evaluation will be as **total package** with cost to BHEL which will include Commissioning spares and commissioning assistance.
4. Delivery should be **24 weeks** from date of purchase order and if supplier offers more than this delivery period BHEL will operate 0.5% loading factor for evaluation of their offer for every week delay.
5. **Guarantee Period:** The complete system shall be guaranteed for 24 months of trouble free performance from the date of shipment or 18 months from commissioning date whichever is earlier. In case of any failure or trouble reported from site, the supplier shall depute their representative immediately to attend the problem and replace the defective components/parts, free of cost.
6. **Commissioning Assistance:** Commissioning assistance should be quoted in price bid, Quotation should contain exact value including all expenses like commissioning charges, travel, accommodation etc. Since commissioning requirement and time depends on the equipment supplied by the supplier, number of days required for commissioning should be decided by the vendor for arriving commissioning charges. Vendor have to quote firm price in currency without any variable elements. **Vendor should NOT specify that commissioning charges will be quoted separately.**

Loading Criteria

1. Any deviation in the payment term will attract loading as mentioned. "Base rate of SBI (as applicable on the date of bid opening. Techno-commercial bid opening in case of two part bids) + 6% shall be considered for loading for the period of relaxation sought by bidders.
2. In the case of Usance LCs the loading will be considered @ 1.5% on the offered Value.
3. For LC at sight the loading will be considered @ 3.5% on the offered Value.
4. Normally CAD at sight, Confirmed LCs and Advance payment are liable for rejection.
5. Any deviation from the LD clause, loading will be applied to the extent to which it is not agreed by the bidder (at offered value).

****

ANNEXURE 2C

IBR APPROVED INSPECTION AGENCIES

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

Fax : 011-2306 2626

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

To

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

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

Sir,

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

Thanking you,

Yours faithfully,

2/4/2012

(S. K. Jain)
Development Officer &
Assistant Secretary, Central Boilers Board
Tel.No.011-23063321/3318

Encl: "As above"

Mr. SPK Ugandaraja
Mr. VRK

(As on 31/03/2012)

INSPECTING AUTHORITIES

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

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

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

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

(As on 31/03/2012)

COMPETENT AUTHORITIES

NAME OF THE AUTHORITY

1. Director of Boilers,
   Andhra Pradesh

2. Chief Inspector of Boilers,
   Arunachal Pradesh

3. Chief Inspector of Boilers
   Assam

4. Chief Inspector of Boilers
   Bihar.

5. Chief Inspector of Boilers
   Chhattisgarh

6. Chief Inspector of Boilers,
   Delhi.

7. Chief Inspector of Boilers,
   Goa.

8. Director of Boilers,
   Gujarat.

9. Chief Inspector of Boilers,
   Haryana.

10. Chief Inspector of Boilers,
    Himachal Pradesh.

11. Chief Inspector of Boilers,,
    Jharkhand.

12. Director of Boilers,
    Karnataka.

13. Director of Boilers,
    Kerala.

14. Director of Boilers,
    Madhya Pradesh.

15. Director of Boilers,
    Maharashtra.

16. Chief Inspector of Boilers,
    Meghalaya

17. Chief Inspector of Boilers,
    Manipur

18. Chief Inspector of Boilers,
Mizoram

19. Chief Inspector of Boilers,
Nagaland

20. Director of Boilers,
Orissa

21. Director of Boilers,
Punjab

22. Chief Inspector of Boilers,
Labour Department,
Government of Puducherry,
Puducherry

23. Chief Inspector of Boilers,
Rajasthan.

24. Director of Boilers
Tamil Nadu

25. Chief Inspector of Boilers,
Tripura

26. Director of Boilers,
Uttar Pradesh

27. Deputy Director of Factories & Boilers
Uttarakhand

28. Chief Inspector of Boilers,
West Bengal

29. M/s. National Test House,
Plot No.F-10, M.I.D.C.,
Marol, Andheri (E),
MUMBAI - 400 093.

30. Welding Research Institute,
Bharat Heavy Electricals limited,
Tiruchirapalli – 620014.

31. M/s RSA
(Formerly Royal & Sun Alliance plc)
17 York Street,
Manchester, M2 3RS,
United Kingdom — Europe

32. M/s. TUV Nord Systems GmbH Co.KG.
Langemarckstr 20
451141 Essen
GERMANY. — Europe, Brazil, China, Korea and Thailand

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

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

ANNEXURE 2D

CONFIRMATION TO TERMS & CONDITIONS

BHARAT HEAVY ELECTRICALS LTD

VALVES PURCHASE

Trichy - 620 014. India

GENERAL TERMS AND CONDITIONS(ENSFV00195)

TERMS & CONDITION	**VENDOR CONFIRMATION**
a. Terms of Payment: **Indigenous Supply:** 100% after 45 days on satisfactory receipts and acceptance of material at BHEL stores/ Site acknowledgement. **Import Supply:** Payment term is 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. Offers with payment term as Confirmed LC and advance payment will be rejected.	
b. Liquidated Damage: Liquidated damages shall be 0.5% of the total order value or part thereof subject to a maximum of 10% of the total order value.	
c. Delivery Terms: For Indigenous Supplies: FOR BHEL Trichy For import Supplies: CFR/CIF Chennai Sea Port as per incoterm 2010	
d. Validity of Offer: Prices should be valid for 120 days from the date of opening of this tender.	
e. Risk Purchase: Alternatively, the purchaser at his option will be entitled to terminate the contract and to purchase elsewhere at the risk and cost of seller either the whole of goods or any part which the supplier has failed to deliver or dispatch within the time stipulated as aforesaid or if the same were not available, the best and the nearest available substitute therefore. Supplier shall be liable for any loss which the purchaser may sustain by reason for such risk purchases in addition to penalty.	
f. Guarantee Period: The complete system shall be guaranteed for 24 months of trouble free performance from the date of shipment or 18 months from commissioning date whichever is earlier. In case of any failure or trouble reported from site, the supplier shall depute their representative immediately to attend the problem and replace the defective components/parts, free of cost.	
g. Delivery period: Delivery period should be within 24 weeks from date of PO	
h. Commissioning Assistance: Commissioning assistance should be quoted in price bid, Quotation should contain exact value including all expenses like commissioning charges, travel, accommodation etc. Since commissioning requirement and time depends on the equipment supplied by the supplier, number of days required for commissioning should be decided by the vendor for arriving commissioning charges. Vendor have to quote firm price in currency without any variable elements like no of days.	
DOCUMENTATION: Following documents should be part of tender for evaluation, failure to submit this details for evaluation, you offer will be technically rejected	
1. GA drawing with EP and mounting detail	
2. IBR certification for factory	
3. Filled in datasheet	
4. Hook up drawing	
5. Bill of material for accessories	
6. Schedule of deviation	

ANNEXURE 3A

PRICE BANK GUARANTEE FORMAT

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

PERFORMANCE BANK GUARANTEE

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

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

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

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

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

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

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

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

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

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

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

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

In witness whereof we……., (indicate the name of Bank) have hereunto setout Bank Seal the_____day _____month 200
BANK E-MAIL ID:
BANK PHONE NO.
BANK FAX NO:

ANNEXURE 3B
LIST OF CONSORTIUM BANKS

List of Consortium Bank			
	Nationalised Bank		**Nationalised Bank**
1	Allahabad bank	19	Vijaya Bank
2	Andhra bank		**Public Sector Banks**
3	Bank of Baroda	20	IDBI
4	Canara Bank		**Foreign bank**
5	Corporation bank	21	CITI Bank N.A
6	Central bank	22	Deutsche Bank AG
7	Indian Bank	23	The Hongkong and Shanghai Banking Corporation Limited
8	Indian Oversea Bank	24	Standard Chartered Bank
9	Oriental bank of Commerce	25	The Royal Bank of Scotland N.V.
10	Punjab National Bank	26	J P Morgan
11	Punjab & Sindh Bank		**Private bank**
12	State Bank of India	27	Axis Bank
13	State Bank of Hyderabad	28	The Federal Bank Limited
14	Syndicate Bank	29	HDFC
15	State Bank of Travancore	30	Kotak Mahindra Bank
16	UCO Bank	31	ICICI
17	Union Bank of India	32	Indusind Bank
18	United Bank of India	33	Yes Bank

ANNEXURE 4A
INTEGRITY PACT FORMAT

<not applicable>

ANNEXURE 4B

SCHEDULE OF DEVIATIONS FORMAT

SCHEDULE OF DEVIATIONS

Enq Ref:

Offer Ref:

Date:

Commercial Deviation:

Annexure / Clause No.	Description	Supplier Deviation

Technical Deviation:

Annexure / Clause No.	Description	Supplier Deviation

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

Signature with Seal

ANNEXURE 4C
UNPRICED BID FORMAT

	BHEL Enquiry No. & Date			**Vendor's Offer Ref No. & Date**
	MODEL UNPRICE BID FORMAT FOR IMPORT VENDORS			
	Currency			
Enq Sl No.	Description	Unit	Qty	Unit Price in Currency
1				Quoted/Not Quoted
2				Quoted/Not Quoted
3				Quoted/Not Quoted
4				Quoted/Not Quoted
5				Quoted/Not Quoted
.				Quoted/Not Quoted
.				
	Total CIF Value in Currency			Quoted/Not Quoted
	Commissioning charges			
	Validity of Price			
	Consignment Package Details			
	Approximate Net / Cross 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 4D
PRICED BID FORMAT

	BHEL Enquiry No. & Date			**Vendor's Offer Ref No. & Date**	
	MODEL PRICE BID FORMAT FOR IMPORT VENDORS				
	Currency				
Enq Sl No.	Description	Unit	Qty	Unit Price in Currency	Value in Currency
1					
2					
3					
4					
5					
.					
.					
	Total CIF Value in Currency				
	Commissioning charges				
	Validity of Price				
	Consignment Package Details				
	Approximate Net / Cross Weight in Kgs				
	Dimension of Consignment				
					Signature & Seal of Vendor
	NOTE:				
	The Price Bid should be submitted strictly in line with the above **FORMAT**				