

ANNEXURE- 1**CHECK LIST**

NOTE: - Suppliers are required to fill in the following details in their Letterhead and no column should be left blank

A	Name and Address of the Supplier		
B	GSTN No. the Supplier (Place of Execution of Contract / Purchase Order)		
C	Details of Contact person for this Tender	Name: Mr./ Ms. Designation: Telephone No: Mobile No: Email ID:	
D	EMD DETAILS		
E	DESCRIPTION	APPLICABILITY (BY BHEL)	ENCLOSED BY BIDDER
i.	Whether Pre - Qualification Criteria is understood and provided proper supporting documents.	Applicable/ Not Applicable	YES / NO
ii.	Whether all pages of the Tender documents including annexures, appendices etc are read and understood	Applicable/ Not Applicable	YES / NO
iii.	Audited Balance Sheet and profit & Loss Account for the last three years	Applicable/ Not Applicable	YES / NO
iv.	Copy of PAN Card & GST registration	Applicable/ Not Applicable	YES / NO
v.	Submission of MSE certificate as specified in Tender	Applicable/ Not Applicable	YES / NO
vi.	Offer forwarding letter / tender submission letter as per Annexure – 2	Applicable/ Not Applicable	YES / NO
vii.	Submission of Certificate of No Deviation as per Annexure – 3	Applicable/ Not Applicable	YES / NO
viii.	Declaration regarding Insolvency/ Liquidation/ Bankruptcy Proceedings as per Annexure – 4	Applicable/ Not Applicable	YES / NO
ix.	Declaration by Authorized Signatory as per Annexure – 5	Applicable/ Not Applicable	YES / NO
x.	Declaration by Authorized Signatory regarding Authenticity of submitted Documents Annexure – 6	Applicable/ Not Applicable	YES / NO
xi.	Submission of Non-Disclosure Certificate as per Annexure – 7	Applicable/ Not Applicable	YES / NO
xii.	Submission of Integrity Pact as specified in Tender as per Annexure – 8	Applicable/ Not Applicable	YES / NO

xiii.	Declaration confirming knowledge about Site Conditions as per Annexure – 9	Applicable/ Not Applicable	YES / NO
xiv.	Declaration reg. Related Firms & their areas of Activities as per Annexure – 10	Applicable/ Not Applicable	YES / NO
xv.	Declaration for relation in BHEL as per Annexure – 11	Applicable/ Not Applicable	YES / NO
xvi.	Declaration reg. minimum local content in line with revised public procurement as per Annexure – 12	Applicable/ Not Applicable	YES / NO
xvii.	Declaration regarding compliance to Restrictions under Rule 144 (xi) of GFR 2017 as per Annexure – 13	Applicable/ Not Applicable	YES / NO
xviii.	Bank Account Details for E-Payment as per Annexure – 14	Applicable/ Not Applicable	YES / NO
xix.	Power of Attorney for submission of tender as per Annexure – 15	Applicable/ Not Applicable	YES / NO
xx.	Proforma of Bank Guarantee for Earnest Money as per Annexure – 16	Applicable/ Not Applicable	YES / NO

NOTE: Strike off 'YES' or 'NO', as applicable. Tender not accompanied by the prescribed **above applicable documents** are liable to be summarily rejected.

DATE :

Sign. of the AUTHORISED SIGNATORY
(With Name, Designation and Company seal)

Technical Pre-Qualification Requirement (PQR) for Oil system Trip Valves

1. The vendor shall be an established supplier of Top & bottom/ Top & port/ post guided/ cage guided plug, Globe body, single seated with Pneumatic diaphragm actuated type trip valve, hereby referred as **Trip valve**, having adequate Engineering, Manufacturing, testing and servicing facilities and shall furnish technical backup documents in proof for above requirements.
2. The vendor shall have experience of having supplied **Trip valves** as per the technical specification for **LDO/HFO application** or application of similar severity. Supply reference list with details of PO, PO date, customer name shall be submitted.
3. The **Trip valve** offered shall be from the existing regular supply range of the vendor. Vendor shall provide the product catalogue.
4. As proof of above pre-qualifying requirement points, vendor should submit :
 - a. Their manufacturing product catalogue which lists the enquired Trip Valve as per above technical requirements.
 - b. Vendor shall furnish general reference list with details of Customer name, fluid handled, Trip Valve parameter, P.O date, customer reference details wherein the vendor has supplied Trip Valves meeting the technical requirements as stated above.
 - c. Minimum ONE end user certificate for the satisfactory operational performance of their supplied Trip Valve meeting the minimum pre-qualifying requirements stated above.

OR

- Minimum Two past purchase orders of similar Trip Valves meeting the minimum pre-qualifying requirements stated above.
- d. Vendor to attach the corresponding data sheets/ technical documents of the Trip Valve supplied as per P.O / End user certificate (submitted vide point 4.c) for our review.
 5. In case of ordering, the Vendor shall have the responsibility for the following and same to be confirmed point wise.
 - i) Vendor should have the component replacement responsibility in case of defect / failure.
 - ii) Experts from Vendor's side shall associate in commissioning activities at site, if required.
 - iii) Vendor should ensure the product performance during erection & commissioning and ensure performance guarantee.
 6. Backup document checklist to meet PQR to the fullest satisfaction of BHEL:

S. No	Document description	Check list
a.	Back-up documents as per pt. 1	☐
b.	Product Catalogues as per pt. 4a	☐
c.	General reference list as per pt. 4b	☐
d.	One end user certificate OR Two P.O as per pt. 4c	☐
e.	Data sheets/ technical documents as per pt. 4d	☐
f.	Confirmation to clause (5)	☐

SPECIFICATION FOR FO SYSTEM TRIP VALVES

1. INTENT:

To Design, Manufacture, Test and Supply of Fuel Oil System Trip Valves.

2. SCOPE:

The Trip Valves shall be complete in all respects as per the specification and the Data Sheet.

3. TECHNICAL REQUIREMENTS:

- a) For flow parameters refer to the Vendor Check List.
- b) Cast (or) forged carbon steel globe body flanged as per ANSI to specified rating.
- c) Top & Bottom, Top & Port or Post guided plug.
- d) Single seated Stainless steel trim, unbalanced, soft seated for oil service to offer Cl.VI shutoff, metal seated for steam service, stellite and fine lapped to offer Cl.V shut off.
- e) Soft seat shall be replaceable independent of the metallic seat ring.
- f) Compact Design with short bonnet and overall height not exceeding 400-450 mm highly preferred.
- g) Plain bonnet with packing suitable for both oil and steam service shall be offered.
- h) Stem polished and finished to 2-4 microns RMS in case of teflon packing.
- i) Valve internals shall not vibrate or chatter and not unduly noisy; the noise level shall be limited to 85 dBA measured at a distance of 1.0 m.
- j) The valve closing time shall be less than 1(one) second, when connected through a solenoid pilot, as stated under 'TIME DATA' of the 'Vendor Check List'.
- k) Actuator signal port shall be directly tapped to 3/8" NPT female, without any adapters.

4. ACCESSORIES:

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- a) Include accessories as under Item Description and 'Vendor Check List'.
 - b) Position Limit Switches to indicate open and close position of valve.
 - c) Limit switches shall be of 2 NO / 2 NC, DPDT contacts, 220V DC 0.5A and 240V AC 5A. The Limit Switch used shall be of approved make.

Limit switches shall be with Explosion Proof Enclosure.

- d) Include quick Exhaust valve, if required, to limit the valve closing time on large body valves. Refer '3j' as above.
- e) Quick Exhaust valve if offered shall be supplied mounted onto the actuator with 3/8" NPT female connection.
- f) All accessories shall be weather proof, water/oil tight to NEMA 4 & 13, suitable for outdoor installation and 70 deg C ambient.
- g) Pneumatic piping if called for shall be out of 3/8" OD PVC Jacketed SS Tube, as per ASTM A-269.
- h) Termination Box shall be provided as per the enclosed sketch.
- i) 2Way Dual Coil Solenoid Valve, 240 V DC / 240 V AC , continuous heavy duty, flow Cv 3.0, Class-H insulation, working medium Air at 7 kg/sq.cm(g) pressure.
- j) Air-lock valve and Air-set with 1/4" NPTF end connection.
- k) Air set shall be of sintered bronze and with 2" pressure gauge for power.

5. MARKING:

- a) Stainless steel Name Plates with the following boldly engraved shall be firmly fixed to the bonnet: Maker's name & production serial number; service; BHEL material code; type, size and rating of body; Size & form of trim; Type, size & spring range of actuator; valve action; air failure position and plug lift, valve tag no and Trim material.
- b) Each spare shall be individually tagged with part name, maker's name & spare code and BHEL Material Code.

6. PAINTING:

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- a) All interior surfaces supplied with rust preventive oil following hydraulic test and drying.
 - b) All exposed surfaces degreased, derusted and epoxy coated.

7. PACKING:

- a) All openings (fluid, pneumatic and electric) shall be firmly capped.
- b) Valves shall be properly packed in wooden boxes with waterproof under cover.
- c) The vendor shall, after proper painting of the valves, pack and crate all items in such a manner so as to protect them from deterioration and damage during transportation to the Site and storage at Site till the time of erection. The vendor shall be held responsible for all damages due to improper painting, packing and/or crating.
- d) Liberal packing material & struts shall be used to arrest rolling to protect from transmit damages.
- e) The Limit Switches and such components shall be capsulated covered properly with thermocole material.

8. TEST CERTIFICATES:

All tests/inspection shall be carried out as per the approved specification and approved quality plan. Approval shall be obtained prior to manufacturing.

- a) Body hydraulic test done at 1.5 times the cold body rating.
- b) Seat leak test per ANSI/FCI/70-2/1991 Standards to meet Class VI for oil valves/Gas valves & CL.V for steam valves.
- c) Material Certificate for body, bonnet and trim.
- d) Standard tests on actuator, and actuator closing time.
- e) For proper actuation of limit switches.
- f) Dimensional certificate for overall dimensions and all terminal connections.
- g) IBR Certificates in Form III-C shall be furnished for all the steam service valves only.

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- h) Quality Plan in BHEL format shall be submitted.

9. INWARD INSPECTION:

- a) Verify the works test certificate, marking particulars, name plates of each accessory and the scope of supply.
- b) Watch for damages
- c) Perform random check on all terminal connections and the internal particulars.

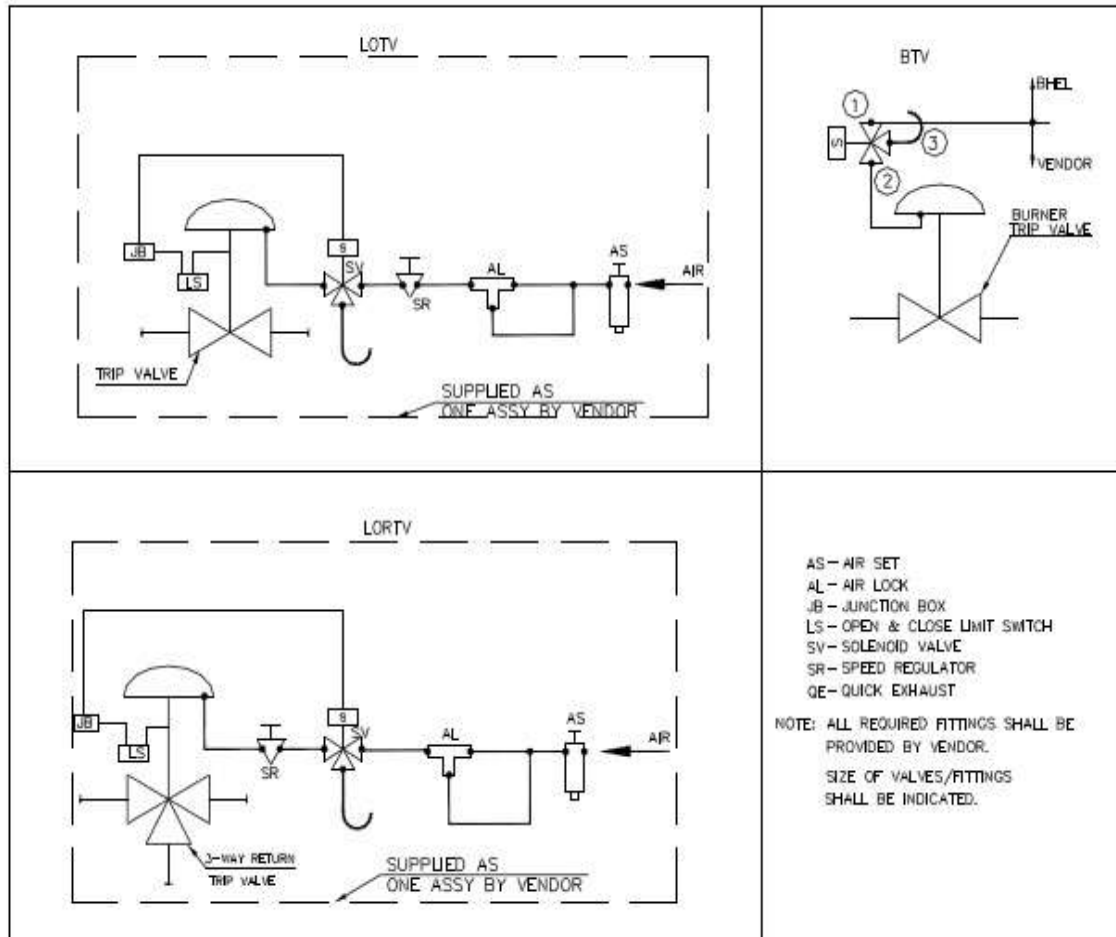
10. OPERATING & INSTRUCTION MANUALS:

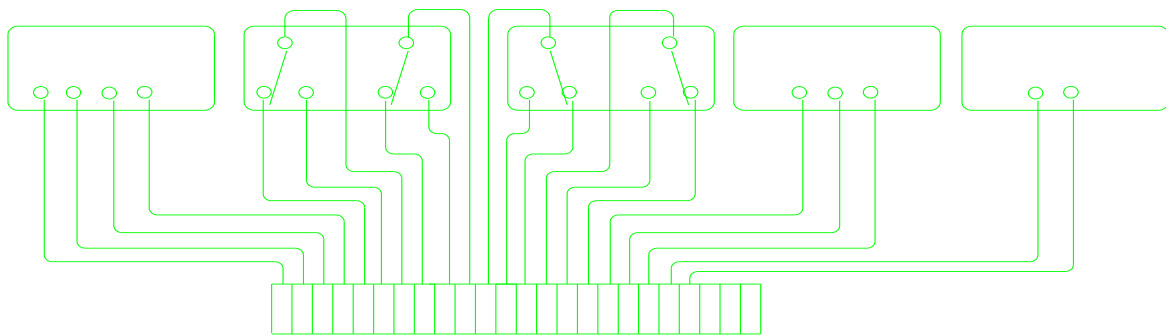
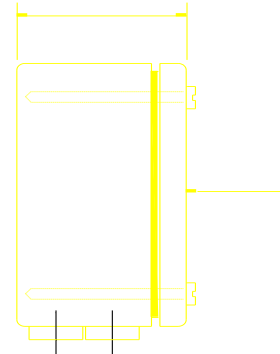
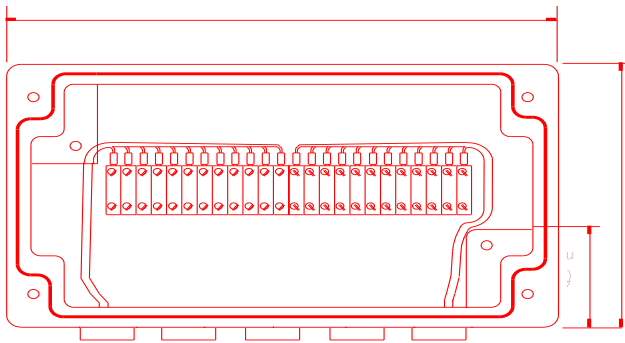
Operation and Maintenance Manuals shall be submitted in **soft** in editable form and drawings shall be in ACAD-13 or higher. Manuals comprising of details on items listed under 11a and 11b below shall be furnished within 1 month from the date of Purchase Order.

11. DOCUMENTS TO BE SUBMITTED WITH THE OFFER:

- a) Completely filled in BHEL Vendor Check List.
- b) All documents referred under 'Reference Documents' part of the Vendor Check List. (Dimensional Drawings with all accessories mounted catalogues, specifications, spares Identifier Drawings and O&M Manuals)
- c) Spares quotation for 3 years operation with clear description, part No., identification drawing, break-up price and with 6 months validity.
- d) Copies of STD test methods and copies of certificate formats for main valve and all accessories.
- e) Confirmation/Deviation list to each point of this specification.
- f) Sizing calculation for actuator and control valve; valve outlet velocity and noise level calculation.
- g) Pneumatic hook up Diagram similar to the one enclosed.
- h) Termination box wiring Diagram similar to the one enclosed.

HOOK UP DIAGRAM FOR TRIP VALVES



**NOTE :-**

1. ELMEX TERMINAL BLOCKS SHALL BE USED IN THE TERMINATION BOX.
2. THE VALVE MANUFACTURER SHALL DO THE WIRING AS SHOWN IN THIS DRAWING. TERMINATION SHALL BE DONE BY USING SUITABLE CONDUITS, END CONNECTORS AND CRIMPING LUGS.
3. THE TERMINATION BOX SHALL BE MOUNTED SUITABLY ON THE VALVE FOR EASY ACCESSIBILITY.
4. MATERIAL OF TERMINATION BOX SHALL BE ALUMINIUM AND SHALL HAVE IP55 CLASS OF ENCLOSURE PROTECTION.
5. CONDUIT /CABLE ENTRIES ARE PROVIDED ONLY AT THE BOTTOM AND A MINIMUM GAP OF 25 MM IS TO BE LEFT BETWEEN CABLE GLAND / CONDUIT ENTRIES
6. SOLENOID VALVE WIRING IS REQUIRED, IF SPECIFIED. ONLY TWO WIRES ARE USED, IF SINGLE COIL IS PROVIDED.
7. THE TERMINATION BOX SHALL HAVE EARTHING PROVISION.
8. FROM TERMINATION BOX TO REMOTE CONTROL PANEL THE CABLE SHALL ENTER THROUGH THE FOLLOWING DOUBLE COMPRESSION TYPE BRASS CHROME PLATED CABLE GLAND. THE CABLE GLAND SIZE AND LOCATION ARE TO BE INDICATED IN THE SKETCH.
 - I) 2 NO's GLANDS TO SUIT 4P X 0.5 SQ. MMCABLE OF 18 MM O.D. FOR LIMIT SWITCH.
 - II) 1 NO. GLAND TO SUIT 4C X 1.5 SQ MM CABLE OF 14 MM O.D.FOR SOLENOID VALVE.

**PART - I: DATASHEET FOR TRIP VALVE, LOTV (LO30A)**

UNITS: Flow-Liquid Cu M / hr, Steam-Kg / hr, Gas-NCu/hr, Pr-kg /cmSq(g), Temp°C

O.FLOW DATA		C.SOLENOID PILOT	
1. Line Fluid		1. Make / Type No	
2. Flow Max		2. Style	
3. Normal in pr		3. To Open Main Valve	
4. Allowable DP		4. To Close Main Valve	
5. Actuator Sizing DP		5. Enclosure	
6. Temp Max		6. Coil Duty	Heavy duty continuous 100°C ambient
7. Flow Temp		7. Coil Rating	220V DC
8. Flow Sp Gravity		8. Insulation Class	H
9. Flow Viscosity		9. Inrush / Hold Wattage	
10. Max Flow Cv		10. Valve Flow Cv	
11. Plug Lift%		11. Body & Trim Matl	SS Bar Stock & AISI SS-316
12. Valve Cv		12. Wetted parts	Stainless Steel
13. Valve Closing Time	Sec.	13. Seating	Resilient for tight shut
14. Valve Opening Time	Sec.Adjustable	14. Valve Ends	
		15. Cable entry	
A. VALVE BODY		16. Terminal Block	Provided
1. Make/Type No		D. QUICK EXHAUST VL	
2. Line Size	ODXT mm	1. Make/type No	To meet 0.13
3. Body/port Size	Nb mm	2. Port Conn	
4. Plug Travel	Mm		
5. Body Style / Rating	NP	E. FLOW RESTRICTOR	
6. Ends	Flanged to :	To meet 0.14	
7. Port		1. Make/Type No	
8. Guiding	Cage or Top & Bottom	2. Port Conn	
9. Body Material	Carbon Steel, ASTM A216 WCB	3. Adjustable Time Range	
10. Trim No		F. AIRSET	
11. Plug Matl		Type No	
12. Steam Size/Material		1. Airset set pr	
13. Seat, Material		G.LIMIT SWITCHES	
14. Cage Material		1. Make/Type No	off
15. Plug/Gauge Style		2. Mounted For	Full open Full close % Open
16. Seat Leak Class	VI to ANSI FCI 70-2	3. Contacts	DPDT
17. Plug pushdown to		4. Contact Rating	240AC 5Amp 220 DC 0.25 Amp
18. Flow Tends to		5. Enclosure	
19. Bonnet / packing		6. Cable Entry	
20. Lub/Isol Valve		H. TERMINATION BOX	
21. Drain Valve		Provided	
22. Noise Level		1. Enclosure	
		2. No. of Terminals	
		I.SUPPLY CONDITION	
		1. Assembly – 1	
		2. Assembly – 2	
		3. Pneumatic terminal	To suit 8 mm tube
B. ACTUATOR ASSY		4. Spares	Individually tagged and packed
1. Make/Type No		5. IBR	YES / NO
2. Style		REF. DOCUMENTS: (SPECIFY DWG/MANUAL REF.NOs. BELOW)	
3. Size/Volume		1. Assy Dimensional Dwg	
4. Diaphragm Matl		2. Assy Hookup Dwg	
5. Spring No/Range		S.NO	ITEM O & M Manual Spares identifier Catalog&Spec
6. Spring No/Range			
7. Air to		3	A
8. Signal pr		4	B
9. Pr port Conn		5	B 11
10. On Air Failure	Stay Put	6	C
11. Lockup Valve type No		7	D
12. Lockup Valve Set pr		8	E
		9	F
		10	G



PART - II: VENDOR CHECK LIST FOR TRIP VALVE

SERVICE: LOTV

 ENQUIRY No.:
TAG NO: LO30A

UNITS: Flow-Liquid Cu M / hr, Steam-Kg / hr, Gas-NCu / hr, Pr-kg / cmSq (g), Temp-°C

IIB	BHEL SPECIFICATION	VENDOR CONFIRMATION
J.APPLICABLE STANDARDS:		
1.Control valve sizing equations	ANSI / ISA S75.01	
2. Control valve capacity test procedure	ANSI / ISA S75.02	
3. Seat leakage	ANSI FCI 70-2	
4. Face to face dimensions.	ANSI B 16.10	
5. Flange dimensions & drilling	ANSI B 16.5	
O.FLOW DATA		
1. Line Fluid	LDO / HSD	
2. Flow Max	63.532	
3. Normal in pr	19.5	
4. Allowable DP	0.5	
5. Actuator Sizing DP	29.25	
6. Temp Max	50	
7.Flow Temp	40	
8. Flow Sp Gravity	0.82	
9. Flow Viscosity	2.5-15.7	
10. Max Flow Cv	95.192	
11. Max. Flow Plug Lift	Full	
12. Valve Cv	Vendor to specify	
13. Valve Closing Time	< 1 Sec.	
14. Valve Opening Time	6 to 10 Sec. Adjustable	
A. VALVE BODY		
1. Make/Type No	Vendor to specify	
2. Line Size mm	OD 114.3 x 6.02 t	
3. Body/port Size mm	NB: 100	
4. Plug Travel mm	Vendor to specify	
5. Body Style / Rating	ANSI 300 LBS NP	
6. Ends	Flanged ANSI 300 LBS	
7. Port	SINGLE /DOUBLE	
8. Guiding	STEM / PORT	
9. Body Matl	Carbon Steel, ASTM A216 WCB	
10. Trim No	Vendor to specify	
11. Plug Matl	SS Vendor to specify grade	
12. Stem Size/Matl	Vendor to specify	
13.Seat Matl	Vendor to specify	
14. Cage Matl	Vendor to specify	
15.Plug/Gauge Style	Equal %/Linear	
16. Seat Leak Class	VI To ANSI FCI 70-2	
17. Plug pushdown to	Close	
18. Flow Tends to	Open	
19. Bonnet / packing	Std/extended Specify	
20. Lub/Isol Valve	Vendor to specify if required	
21. Noise Level	< 85 dBA @1M distance	
21a.Valve Internals	Shall not vibrate, chatter & noisy	

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PART - II: VENDOR CHECK LIST FOR TRIP VALVE

SERVICE: LOTV

ENQUIRY No.:

TAG NO: LO30A

UNITS: Flow-Liquid Cu M / hr, Steam-Kg / hr, Gas-NCu / hr, Pr-kg / cmSq (g), Temp-°C

IIA	BHEL SPECIFICATION	VENDOR CONFIRMATION
B. ACTUATOR ASSY		
1. Make/Type No	Vendor to specify	
2. Style	Vendor to specify	
3. Size/Volume	Vendor to specify	
4. Diaphragm Material	Vendor to specify	
5. Spring No/Range	Vendor to specify	
6. Spring to	Close	
7. Air to	Open	
8. Signal pr	Vendor to specify	
9. Pr port Conn	Vendor to specify	
10. On Air Failure	Stay Put	
11. Lockup Valve type No	Vendor to specify	
12. Lockup Valve Set pr	Vendor to specify	
C. SOLENOID PILOT		NC 2-Way 3-Port Dual Coil 220V DC
1. Make / Type No	Vendor to specify	
2. Style	Vendor to specify	
3. To Open Main Valve	Energise solenoid coil	
4. To Close Main Valve	De-energise solenoid coil	
5. Enclosure	WEATHER PROOF	
6. Coil Duty	Heavy duty continuous for 100° C ambient	
7. Coil Rating	220V DC	
8. Insulation Class	H	
9. Inrush / Hold Wattage	Vendor to specify	
10. Valve Flow Cv	3	
11. Body Material	SS Bar Stock & AISI SS-316	
12. Wetted parts	Stainless Steel	
13. Seating	Resilient for tight shut	
14. Valve Ends	3/8" NPT	
15. Cable entry	1/2" conduit	
D. QUICK EXHAUST VALVE		To meet O.13
1. Make/Type No	Vendor to specify	
2. Port Connection	Vendor to specify	
E. FLOW RESTRICTOR		To meet O.14
1. Make/type No	Vendor to specify	
2. Port Connection	Vendor to specify	
3. Adjustable Time Range	Vendor to specify	
F. AIRSET		Make & Type No
1. Airset set pr	2. End conn	Vendor to specify 1/4" NPT (F)
G. LIMIT SWITCHES		2 NOS 1no Open&1no Close
1. Make/Type No	Vendor to specify	
2. Mounted For	Full open	Full close % Open
3. Contacts	DPDT	
4. Contact Rating	240AC 5Amp	220 DC 0.5 Amp
5. Enclosure	EX. PROOF	
6. Cable Entry	Vendor to specify	
H. PNEUMATIC TERMINAL		To suit 8 mm SS tube
I. TERMINATION BOX		Provided as per the sketch enclosed
1. Enclosure	NEMA 4&13 DUST & OIL TIGHT	
2. No. of Terminals	Vendor to specify	
3. Spares	Commissioning/Customer	

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**PART - II: VENDOR CHECK LIST FOR TRIP VALVE****SERVICE: LOTV****ENQUIRY No.:****TAG NO: LO30A****UNITS:** Flow-Liquid Cu M / hr, Steam-Kg / hr, Gas-NCu / hr, Pr-kg / cmSq (g), Temp-°C

BHEL SPECIFICATION		VENDOR CONFIRMATION
REFERENCE DOCUMENTS:(SPECIFY DWG/MANUAL REF.NOs.BELOW)		
1. AssyDimensional Dwg	Vendor to furnish	
2. Assy Hookup Dwg	Vendor to furnish	
3.Spares Catalogue/DRG No	Vendor to specify	
J.MARKING		
1.S S name plate	Vendor to specify	
2. Spares individually tagged	Vendor to specify	
K. PAINTING	Epoxy coated	
L.PACKING	As per clause no.7	
M.TEST CERTIFICATES		
1.Hydraulic test	Vendor to specify	
2.Seat leak test	Vendor to specify	
3.Material certificates	Vendor to specify	
4.Std. test on Actuator	Vendor to specify	
5.Dimensional test	Vendor to specify	
N.OPR. & INSTRN. MANUALS		
1.In soft form & 3 hard copies.	Vendor to confirm	
IIB SPECIAL CONTRACT REQUIREMENT, IF ANY		
(USE AN ANNEXURE IF THIS SPACE IS INADEQUATE)		

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**PART - I: DATASHEET FOR TRIP VALVE, LORBV (LO80)**

UNITS: Flow-Liquid Cu M / hr, Steam-Kg / hr, Gas-NCu/hr, Pr-kg /cmSq(g), Temp°C

O.FLOW DATA		C.SOLENOID PILOT	
1. Line Fluid		1. Make / Type No	
2. Flow Max		2. Style	
3. Normal in pr		3. To Open Main Valve	
4. Allowable DP		4. To Close Main Valve	
5. Actuator Sizing DP		5. Enclosure	
6. Temp Max		6. Coil Duty	Heavy duty continuous 100°C ambient
7.Flow Temp		7. Coil Rating	220V DC
8. Flow Sp Gravity		8. Insulation Class	H
9. Flow Viscosity		9. Inrush / Hold Wattage	
10. Max Flow Cv		10. Valve Flow Cv	
11. Plug lift%		11. Body & Trim Matl	SS Bar Stock & AISI SS-316
12. Valve Cv		12. Wetted parts	Stainless Steel
13. Valve Closing Time	Sec.	13. Seating	Resilient for tight shut
14. Valve Opening Time	Sec.Adjustable	14. Valve Ends	
		15. Cable entry	
A. VALVE BODY		16. Terminal Block	Provided
1. Make/Type No		D. QUICK EXHAUST VL	
2. Line Size	ODXT mm	1. Make/type No	To meet 0.14
3. Body/port Size	Nb mm	2. Port Conn	
4. Plug Travel	Mm		
5. Body Style / Rating	NP	E. FLOW RESTRICTOR	
6. Ends	Flanged to :	1. Make/Type No	To meet 0.13
7. Port		2. Port Conn	
8. Guiding	Cage or Top & Bottom	3. Adjustable Time Range	
9. Body Material	Carbon Steel, ASTM A216 WCB		
10. Trim No		F. AIRSET	
11. Plug Matl		1. Airset set pr	Type No
12. Steam Size/Material			
13.Seat, Material		G.LIMIT SWITCHES	
14. Cage Material		1. Make/Type No	off
15.Plug/Gauge Style		2. Mounted For	Full open Full close % Open
16. Seat Leak Class	VI to ANSI FCI 70-2	3. Contacts	DPDT
17. Plug pushdown to		4. Contact Rating	240AC 5Amp 220 DC 0.5 Amp
18. Flow Tends to		5. Enclosure	
19. Bonnet / packing		6.Cable Entry	
20. Lub/Isol Valve		H. TERMINATION BOX	
21. Drain Valve		1.Enclosure	Provided
22. Noise Level		2. No. of Terminals	
		I.SUPPLY CONDITION	
		1. Assembly – 1	
		2. Assembly – 2	
		3. Pneumatic terminal	To suit 8 mm tube
B. ACTUATOR ASSY		4. Spares	Individually tagged and packed
1. Make/Type No		5.IBR	YES / NO
2. Style		REF. DOCUMENTS:(SPECIFY DWG/MANUAL REF.NOs. BELOW)	
3. Size/Volume		1.Assy Dimensional Dwg	
4. Diaphragm Matl		2.Assy Hookup Dwg	
5.Spring No/Range		S.NO	ITEM O & M Manual Spares identifier Catalog&Spec
6. Spring No/Range			
7. Air to		3	A
8. Signal pr		4	B
9. Pr port Conn		5	B 11
10. On Air Failure	Stay Put	6	C
11. Lockup Valve type No		7	D
12. Lockup Valve Set pr		8	E
		9	F
		10	G



PART - II: VENDOR CHECK LIST FOR TRIP VALVE

SERVICE: LORBV

ENQUIRY No.:

TAG NO: LO80

UNITS: Flow-Liquid Cu M / hr, Steam-Kg / hr, Gas-NCu / hr, Pr-kg / cmSq (g), Temp-°C

IIB	BHEL SPECIFICATION	VENDOR CONFIRMATION
J.APPLICABLE STANDARDS:		
1.Control valve sizing equations	ANSI / ISA S75.01	
2. Control valve capacity test procedure	ANSI / ISA S75.02	
3. Seat leakage	ANSI FCI 70-2	
4. Face to face dimensions.	ANSI B 16.10	
5. Flange dimensions & drilling	ANSI B 16.5	
O.FLOW DATA		
1. Line Fluid	LDO / HSD	
2. Flow Max	65.971	
3. Normal in pr	20.0	
4. Allowable DP	0.5	
5. Actuator Sizing DP	30	
6. Temp Max	50	
7.Flow Temp	40	
8. Flow Sp Gravity	0.82	
9. Flow Viscosity	2.5-15.7	
10. Max Flow Cv	98.846	
11. Max. Flow Plug Lift	Full	
12. Valve Cv	Vendor to specify	
13. Valve Closing Time	< 1 Sec.	
14. Valve Opening Time	6 to 10 Sec. Adjustable	
A. VALVE BODY		
1. Make/Type No	Vendor to specify	
2. Line Size mm	OD 114.3 x 6.02 t	
3. Body/port Size mm	NB: 100	
4. Plug Travel mm	Vendor to specify	
5. Body Style / Rating	ANSI 300 LBS NP	
6. Ends	Flanged ANSI 300 LBS	
7. Port	SINGLE /DOUBLE	
8. Guiding	STEM / PORT	
9. Body Matl	Carbon Steel, ASTM A216 WCB	
10. Trim No	Vendor to specify	
11. Plug Matl	SS Vendor to specify grade	
12. Stem Size/Matl	Vendor to specify	
13.Seat Matl	Vendor to specify	
14. Cage Matl	Vendor to specify	
15.Plug/Gauge Style	Equal %/Linear	
16. Seat Leak Class	VI To ANSI FCI 70-2	
17. Plug pushdown to	Close	
18. Flow Tends to	Open	
19. Bonnet / packing	Std/extended Specify	
20. Lub/Isol Valve	Vendor to specify if required	
21. Noise Level	< 85 dBA @1M distance	
21a.Valve Internals	Shall not vibrate, chatter & noisy	

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PART - II: VENDOR CHECK LIST FOR TRIP VALVE

SERVICE: LORBV

ENQUIRY No.:

TAG NO: LO80

UNITS: Flow-Liquid Cu M / hr, Steam-Kg / hr, Gas-NCu / hr, Pr-kg / cmSq (g), Temp-°C

IIA	BHEL SPECIFICATION	VENDOR CONFIRMATION
B. ACTUATOR ASSY		
1. Make/Type No	Vendor to specify	
2. Style	Vendor to specify	
3. Size/Volume	Vendor to specify	
4. Diaphragm Material	Vendor to specify	
5.Spring No/Range	Vendor to specify	
6. Spring to	Open	
7. Air to	Close	
8. Signal pr	Vendor to specify	
9. Pr port Conn	Vendor to specify	
10. On Air Failure	Stay Put	
11. Lockup Valve type No	Vendor to specify	
12. Lockup Valve Set pr	Vendor to specify	
C.SOLENOID PILOT NC 2-Way 3-Port Dual Coil 220V DC		
1. Make / Type No	Vendor to specify	
2. Style	Vendor to specify	
3. To Open Main Valve	De-energise solenoid coil	
4. To Close Main Valve	Energise solenoid coil	
5. Enclosure	WEATHER PROOF	
6. Coil Duty	Heavy duty continuous for 100° C ambient	
7. Coil Rating	220V DC	
8. Insulation Class	H	
9. Inrush / Hold Wattage	Vendor to specify	
10. Valve Flow Cv	3	
11. Body Material	SS Bar Stock & AISI SS-316	
12. Wetted parts	Stainless Steel	
13. Seating	Resilient for tight shut	
14. Valve Ends	3/8" NPT	
15. Cable entry	1/2" conduit	
D. QUICK EXHAUST VALVE To meet O.14		
1. Make/Type No	Vendor to specify	
2. Port Connection	Vendor to specify	
E.FLOW RESTRICTOR To meet O.13		
1. Make/type No	Vendor to specify	
2. Port Connection	Vendor to specify	
3. Adjustable Time Range	Vendor to specify	
F. AIRSET Make & Type No		
1. Airset set pr	2.End conn	Vendor to specify 1/4" NPT (F)
G.LIMIT SWITCHES 2 NOS 1no Open&1no Close		
1. Make/Type No	Vendor to specify	
2. Mounted For	Full open	Full close % Open
3. Contacts	DPDT	
4. Contact Rating	240AC 5Amp	220 DC 0.5 Amp
5. Enclosure	EX. PROOF	
6.Cable Entry	Vendor to specify	
H. PNEUMATIC TERMINAL To suit 8 mm SS tube		
I. TERMINATION BOX Provided as per the sketch enclosed		
1.Enclosure	NEMA 4&13 DUST & OIL TIGHT	
2. No. of Terminals	Vendor to specify	
3. Spares	Commissioning/Customer	

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PART - II: VENDOR CHECK LIST FOR TRIP VALVE

SERVICE: LORBV

ENQUIRY No.:

TAG NO: LO80

UNITS: Flow-Liquid Cu M / hr, Steam-Kg / hr, Gas-NCu / hr, Pr-kg / cmSq (g), Temp-°C

BHEL SPECIFICATION		VENDOR CONFIRMATION
REFERENCE DOCUMENTS:(SPECIFY DWG/MANUAL REF.NOs.BELOW)		
1. AssyDimensional Dwg	Vendor to furnish	
2. Assy Hookup Dwg	Vendor to furnish	
3.Spares Catalogue/DRG No	Vendor to specify	
J.MARKING		
1.S S name plate	Vendor to specify	
2. Spares individually tagged	Vendor to specify	
K. PAINTING	Epoxy coated	
L.PACKING	As per clause no.7	
M.TEST CERTIFICATES		
1.Hydraulic test	Vendor to specify	
2.Seat leak test	Vendor to specify	
3.Material certificates	Vendor to specify	
4.Std. test on Actuator	Vendor to specify	
5.Dimensional test	Vendor to specify	
N.OPR. & INSTRN. MANUALS		
1.In soft form & 3 hard copies.	Vendor to confirm	
IIB SPECIAL CONTRACT REQUIREMENT, IF ANY		
	(USE AN ANNEXURE IF THIS SPACE IS INADEQUATE)	

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**PART - I: DATASHEET FOR TRIP VALVE LORTV (LO45A)**

UNITS: Flow-Liquid Cu M / hr, Steam-Kg / hr, Gas-NCu/hr, Pr-kg /cmSq(g), Temp°C

O.FLOW DATA		C.SOLENOID PILOT	
1. Line Fluid		1. Make / Type No	
2. Flow Max		2. Style	
3. Normal in pr		3. To Open Main Valve	
4. Allowable DP		4. To Close Main Valve	
5. Actuator Sizing DP		5. Enclosure	
6. Temp Max		6. Coil Duty	Heavy duty continuous 100°C ambient
7.Flow Temp		7. Coil Rating	220 V DC
8. Flow Sp Gravity		8. Insulation Class	H
9. Flow Viscosity		9. Inrush / Hold Wattage	
10. Max Flow Cv		10. Valve Flow Cv	
11. Plug lift%		11. Body & Trim Matl	SS Bar Stock & AISI SS-316
12. Valve Cv		12. Wetted parts	Stainless Steel
13. Valve Closing Time	Sec.	13. Seating	Resilient for tight shut
14. Valve Opening Time	Sec.Adjustable	14. Valve Ends	
		15. Cable entry	
		16. Terminal Block	Provided
A. VALVE BODY		D. QUICK EXHAUST VL	
1. Make/Type No		To meet 0.13	
2. Line Size	ODXT mm	1. Make/type No	
3. Body/port Size	Nb mm	2. Port Conn	
4. Plug Travel	Mm		
5. Body Style / Rating	NP	E. FLOW RESTRICTOR	
6. Ends	Flanged to :	To meet 0.14	
7. Port		1. Make/Type No	
8. Guiding	Cage or Top & Bottom	2. Port Conn	
9. Body Material	Carbon Steel, ASTM A216 WCB	3. Adjustable Time Range	
10. Trim No		F. AIRSET	
11. Plug Matl		Type No	
12. Steam Size/Material		1. Airset set pr	
13.Seat, Material		G.LIMIT SWITCHES	
14. Cage Material		1. Make/Type No	off
15.Plug/Gauge Style		2. Mounted For	Full open Full close % Open
16. Seat Leak Class	VI to ANSI FCI 70-2	3. Contacts	DPDT
17. Plug pushdown to		4. Contact Rating	240AC 5Amp 220 DC 0.5 Amp
18. Flow Tends to		5. Enclosure	
19. Bonnet / packing		6.Cable Entry	
20. Lub/Isol Valve		H. TERMINATION BOX	
21. Drain Valve		Provided	
22. Noise Level		1.Enclosure	
		2. No. of Terminals	
		I.SUPPLY CONDITION	
		1. Assembly - 1	
		2. Assembly - 2	
		3. Pneumatic rminal	
B. ACTUATOR ASSY		4. Spares	Individually tagged and packed
1. Make/Type No		5. IBR	
2. Style		YES / NO	
3. Size/Volume		REF. DOCUMENTS:(SPECIFY DWG/MANUAL REF.NOs. BELOW)	
4. Diaphragm Matl		1.Assy Dimensional Dwg	
5.Spring No/Range		2.Assy Hookup Dwg	
6. Spring No/Range		S.NO	ITEM
7. Air to		3	A
8. Signal pr		4	B
9. Pr port Conn		5	B 11
10. On Air Failure	Stay Put	6	C
11. Lockup Valve type No		7	D
12. Lockup Valve Set pr		8	E
		9	F
		10	G

**PART - II: VENDOR CHECK LIST FOR TRIP VALVE****SERVICE: LORTV (3 WAY)****ENQUIRY No.:****TAG NO: LO45A****UNITS:** Flow-Liquid Cu M / hr, Steam-Kg / hr, Gas-NCu / hr, Pr-kg / cmSq (g), Temp-°C

IIB	BHEL SPECIFICATION	VENDOR CONFIRMATION
J.APPLICABLE STANDARDS:		
1.Control valve sizing equations	ANSI / ISA S75.01	
2. Control valve capacity test procedure	ANSI / ISA S75.02	
3. Seat leakage	ANSI FCI 70-2	
4. Face to face dimensions.	ANSI B 16.10	
5. Flange dimenstions & drilling	ANSI B 16.5	
O.FLOW DATA		
1. Line Fluid	LDO	
2. Flow Max	31.766	
3. Normal in pr	14.7	
4. Allowable DP	0.5	
5. Actuator Sizing DP	22	
6. Temp Max	50	
7.Flow Temp	40	
8. Flow Sp Gravity	0.82	
9. Flow Viscosity	2.5-15.7	
10. Max Flow Cv	47.596	
11. Max. Flow Plug Lift	Full	
12. Valve Cv	Vendor to specify	
13. Valve Closing Time	< 1 Sec.	
14. Valve Opening Time	6 to 10 Sec.Adjustable	
A. VALVE BODY		
1. Make/Type No	Vendor to specify	
2. Line Size mm	OD 88.9 X 5.49 t	
3. Body/port Size mm	NB: 80	
4. Plug Travel mm	Vendor to specify	
5. Body Style / Rating	ANSI 300 LBS NP	
6. Ends	Flanged ANSI 300 LBS	
7. Port	SINGLE/DOUBLE	
8. Guiding	STEM / PORT	
9. Body Matl	Carbon Steel, ASTM A216 WCB	
10. Trim No	Vendor to specify	
11. Plug Matl	SS specify grade	
12. Stem Size/Matl	Vendor to specify	
13.Seat Matl	Vendor to specify	
14. Cage Matl	Vendor to specify	
15.Plug/Gauge Style	Equal %/Linear	
16. Seat Leak Class	VI to ANSI FCI 70-2	
17. Plug pushdown to	Close	
18. Flow Tends to	Open	
19. Bonnet / packing	Std/Extended Specify	
20. Lub/Isol Valve	Vendor to specify if required	
21. Noise Level	< 85 dBA at 1 m distance	
21a.Valve Internals	Shall not vibrate,chatter & noisy	

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**PART - II : VENDOR CHECK LIST FOR TRIP VALVE****SERVICE: LORTV (3 WAY)****ENQUIRY No.:****TAG NO: LO45A****UNITS:** Flow-Liquid Cu M / hr, Steam-Kg / hr, Gas-NCu / hr, Pr-kg / cmSq (g), Temp-°C

IIA	BHEL SPECIFICATION	VENDOR CONFIRMATION
B. ACTUATOR ASSY		
1. Make/Type No	Vendor to specify	
2. Style	Vendor to specify	
3. Size/Volume	Vendor to specify	
4. Diaphragm Material	Vendor to specify	
5.Spring No/Range	Vendor to specify	
6. Spring to	Close Upper Port	
7. Air to	Close Lower Port	
8. Signal pr	Vendor to specify	
9. Pr port Conn	Vendor to specify	
10. On Air Failure	Stay Put	
11. Lockup Valve type No	Vendor to specify	
12. Lockup Valve Set pr	Vendor to specify	
C.SOLENOID PILOT NC 2-Way 3-Port Dual Coil 220V DC		
1. Make / Type No	Vendor to specify	
2. Style	Vendor to specify	
3. To Open Main Valve	Energise solenoid coil	
4. To Close Main Valve	De-energise solenoid coil	
5. Enclosure	WEATHER PROOF	
6. Coil Duty	Heavy duty continuous for 100° C ambient	
7. Coil Rating	220V DC	
8. Insulation Class	H	
9. Inrush / Hold Wattage	Vendor to specify	
10. Valve Flow Cv	3	
11. Body Material	SS Bar Stock & AISI SS-316	
12. Wetted parts	Stainless Steel	
13. Seating	Resilient for tight shut	
14. Valve Ends	3/8" NPT	
15. Cable entry	1/2" conduit	
D. QUICK EXHAUST VALVE To meet O.13		
1. Make/Type No	Vendor to specify	
2. Port Connection	Vendor to specify	
E.FLOW RESTRICTOR To meet O.14		
1. Make/type No	Vendor to specify	
2. Port Connection	Vendor to specify	
3. Adjustable Time Range	Vendor to specify	
F. AIRSET Make & type no		
1. Airset set pr	Vendor to specify	1/4" NPT(F)
G.LIMIT SWITCHES 2 NOS 1no Open&1no Close		
1. Make/Type No	Vendor to specify	
2. Mounted For	Full open	Full close % Open
3. Contacts	DPDT	
4. Contact Rating	240AC 5Amp	220 DC 0.5 Amp
5. Enclosure	EX. PROOF	
6.Cable Entry	Vendor to specify	
H. PNEUMATIC TERMINAL To suit 8 mm O.D. X 1.65 t tube		
I. TERMINATION BOX Provided as per the sketch enclosed		
1.Enclosure	NEMA 4&13 DUST & OIL TIGHT	
2. No. Of Terminals	Vendor to specify	
3.Spares offer	Commissioning / customer	

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PART - II: VENDOR CHECK LIST FOR TRIP VALVE

SERVICE: LORTV (3 WAY)

ENQUIRY No.:
TAG NO: LO45A

UNITS: Flow-Liquid Cu M / hr, Steam-Kg / hr, Gas-NCu / hr, Pr-kg / cmSq (g), Temp-°C

BHEL SPECIFICATION		VENDOR CONFIRMATION
REFERENCE DOCUMENTS:(SPECIFY DWG/MANUAL REF.NOs. BELOW)		
1. Assy Dimensional Dwg	Vendor to furnish	
2. Assy Hook up & terminal box Dwg	Vendor to furnish	
3. Spares Catalogue/DRG No	Vendor to specify	
J.MARKING		
1. S S name plate	Vendor to specify	
2. Spares individually tagged	Vendor to specify	
K. PAINTING		
	Epoxy coated	
L.PACKING		
	As per clause no.7	
M.TEST CERTIFICATES		
1. Hydraulic test	Vendor to specify	
2. Seat leak test	Vendor to specify	
3. Material certificates	Vendor to specify	
4. Std. test on Actuator	Vendor to specify	
5. Dimensional test	Vendor to specify	
N.OPR. & INSTRN. MANUALS		
1. In soft form & 2 hard copies.	Vendor to confirm	
IIB SPECIAL CONTRACT REQUIREMENT, IF ANY		
(USE AN ANNEXURE IF THIS SPACE IS INADEQUATE)		

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PART - I: DATASHEET FOR BURNER TRIP VALVE BTV-AIR (A20A to A20R)

UNITS: Flow-Liquid Cu M / hr, Steam-Kg / hr, Gas-NCu/hr, Pr-kg /cmSq(g), Temp°C

O.FLOW DATA		C.SOLENOID PILOT	
1. Line Fluid		1. Make / Type No	
2. Flow Max		2. Style	
3. Normal in pr		3. To Open Main Valve	
4. Allowable DP		4. To Close Main Valve	
5. Actuator Sizing DP		5. Enclosure	
6. Temp Max		6. Coil Duty	Heavy duty continuous 100°C ambient
7.Flow Temp		7. Coil Rating	240V AC
8. Flow Sp Gravity		8. Insulation Class	H
9. Flow Viscosity		9. Inrush / Hold Wattage	
10. Max Flow Cv		10. Valve Flow Cv	
11. Plug lift%		11. Body & Trim Matl	SS Bar Stock & AISI SS-316
12. Valve Cv		12. Wetted parts	Stainless Steel
13. Valve Closing Time	Sec.	13. Seating	Resilient for tight shut
14. Valve Opening Time	Sec.Adjustable	14. Valve Ends	
		15. Cable entry	
A. VALVE BODY		16. Terminal Block	Provided
1. Make/Type No		D. QUICK EXHAUST VL	To meet O.13
2. Line Size	ODXT mm	1. Make/type No	
3. Body/port Size	Nb mm	2. Port Conn	
4. Plug Travel	Mm		
5. Body Style / Rating	NP	E. FLOW RESTRICTOR	To meet O.14
6. Ends	Flanged to :	1. Make/Type No	
7. Port		2. Port Conn	
8. Guiding	Cage or Top & Bottom	3. Adjustable Time Range	
9. Body Material	Carbon Steel, ASTM A216 WCB		
10. Trim No		F. AIRSET	Not required
11. Plug Matl		1. Airset set pr	
12. Steam Size/Material			
13.Seat, Material		G.LIMIT SWITCHES	off
14. Cage Material		1. Make/Type No	
15.Plug/Gauge Style		2. Mounted For	Full open Full close % Open
16. Seat Leak Class	VI to ANSI FCI 70-2	3. Contacts	DPDT
17. Plug pushdown to		4. Contact Rating	240AC 5Amp 220 DC 0.5 Amp
18. Flow Tends to		5. Enclosure	
19. Bonnet / packing		6.Cable Entry	
20. Lub/Isol Valve		H. TERMINAL BOX	Provided
21. Drain Valve		1.Enclosure	
22. Noise Level		2. No. of Terminals	
		I.SUPPLY CONDITION	
		1. Assembly – 1	
		2. Assembly – 2	
		3. Pneumatic terminal	To suit 8 mm tube
		4. Spares	Individually tagged and packed
B. ACTUATOR ASSY		5. IBR	YES / NO
1. Make/Type No		REF. DOCUMENTS:-(SPECIFY DWG/MANUAL REF.NOs. BELOW)	
2. Style		1.Assy Dimensional Dwg	
3. Size/Volume		2.Assy Hookup Dwg	
4. Diaphragm Matl		S.NO	ITEM O & M Manual Spares identifier Catalog&Spec
5.Spring No/Range		3	A
6. Spring No/Range		4	B
7. Air to		5	B 11
8. Signal pr		6	C
9. Pr port Conn		7	D
10. On Air Failure	Stay Put	8	E
11. Lockup Valve type No	BHEL scope	9	F
12. Lockup Valve Set pr		10	G

**PART - II: VENDOR CHECK LIST FOR BURNER TRIP VALVE****SERVICE: BTV [AIR]****ENQUIRY No.:
TAG. NO: A20A - A20R****UNITS:** Flow-Liquid Cu M / hr, Steam-Kg / hr, Gas-NCu / hr, Pr-kg / cmSq (g), Temp-°C

IIB	BHEL SPECIFICATION	VENDOR CONFIRMATION
J.APPLICABLE STANDARDS:		
1.Control valve sizing equations	ANSI / ISA S75.01	
2. Control valve capacity test procedure	ANSI / ISA S75.02	
3. Seat leakage	ANSI FCI 70-2	
4. Face to face dimensions.	ANSI B 16.10	
5. Flange dimenstions & drilling	ANSI B 16.5	
O.FLOW DATA		
1. Line Fluid	Air	
2. Flow Max	289	
3. Normal in pr	6	
4. Allowable DP	0.5	
5. Actuator Sizing DP	9	
6. Temp Max	50	
7.Flow Temp	40	
8. Flow Sp Gravity	-	
9. Flow Viscosity	-	
10. Max Flow Cv	2.780	
11.Max. flow Plug Lift	Full	
12. Valve Cv	Vendor to specify	
13. Valve Closing Time	< 1 Sec.	
14. Valve Opening Time	6 to 10 Sec.Adjustable	
A. VALVE BODY		
1. Make/Type No	Vendor to specify	
2. Line Size mm	OD 33.4 X 3.38 t	
3. Body/port Size mm	NB 25	
4. Plug Travel mm	Vendor to specify	
5. Body Style / Rating	ANSI 300 LBS NP	
6. Ends	Flanged ANSI 300 LBS	
7. Port	SINGLE/DOUBLE	
8. Guiding	STEM / PORT	
9. Body Matl	Carbon Steel, ASTM A216 WCB	
10. Trim No	Vendor to specify	
11. Plug Matl	SS Vendor to specify grade	
12. Stem Size/Matl	Vendor to specify	
13.Seat Matl	Vendor to specify	
14. Cage Matl	Vendor to specify	
15.Plug/Gauge Style	Equal %/ Linear	
16. Seat Leak Class	VI to ANSI FCI 70-2	
17. Plug pushdown to	Close	
18. Flow Tends to	Open	
19. Bonnet / packing	Std/Extended Specify	
20. Lub/Isol Valve	Vendor to specify if required	
21. Noise Level	< 85 dBA at 1 m distance	
21a.Valve Internals	Shall not vibrate,chatter & noisy	

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PART - II : VENDOR CHECK LIST FOR BURNER TRIP VALVE

SERVICE: BTV [AIR]

ENQUIRY No.:
TAG. NO: A20A - A20R

UNITS: Flow-Liquid Cu M / hr, Steam-Kg / hr, Gas-NCu / hr, Pr-kg / cmSq (g), Temp-°C

I/A	BHEL SPECIFICATION	VENDOR CONFIRMATION
B. ACTUATOR ASSY		
1. Make/Type No	Vendor to specify	
2. Style	Vendor to specify	
3. Size/Volume	Vendor to specify	
4. Diaphragm Material	Vendor to specify	
5. Spring No/Range	Vendor to specify	
6. Spring to	Close	
7. Air to	Open	
8. Signal pr	Vendor to specify	
9. Pr port Conn	Vendor to specify	
10. On Air Failure	Stay Put	
11. Lockup Valve t	BHEL scope	
12. Lockup Valve Set pr	Vendor to specify	
C. SOLENOID PILOT		
	NC 2-Way 3-Port Dual Coil 240V AC	
1. Make / Type No	Vendor to specify	
2. Style	Vendor to specify	
3. To Open Main Valve	Energise solenoid coil	
4. To Close Main Valve	De-energise solenoid coil	
5. Enclosure	WEATHER PROOF	
6. Coil Duty	Heavy duty Continuous at 100°c ambient	
7. Coil Rating	240V AC	
8. Insulation Class	H	
9. Inrush / Hold Wattage	Vendor to specify	
10. Valve Flow Cv	3	
11. Body Material	SS Bar Stock & AISI SS-316	
12. Wetted parts	Stainless Steel	
13. Seating	Resilient for tight shut	
14. Valve Ends	3/8" NPT	
15. Cable entry	1/2" conduit	
D. QUICK EXHAUST VALVE		
	To meet O.13	
1. Make/Type No	Vendor to specify	
2. Port Connection	Vendor to specify	
E. FLOW RESTRICTOR		
	To meet O.14	
1. Make/type No	Vendor to specify	
2. Port Connection	Vendor to specify	
3. Adjustable Time Range	Vendor to specify	
F. AIRSET		
	NOT REQD. – BHEL scope	
1. Airset set pr	Vendor to specify	
G. LIMIT SWITCHES		
	2 NOS	1no Open&1no Close
1. Make/Type No	Vendor to specify	
2. Mounted For	Full open	Full close % Open
3. Contacts	DPDT	
4. Contact Rating	240AC 5Amp	220 DC 0.5 Amp
5. Enclosure	EX. PROOF	
6. Cable Entry	Vendor to specify	
H. PNEUMATIC TERMINAL		
	To suit 8 mm O.D. X 1.65 t tube	
I. TERMINAL BOX		
	Provided as per the sketch enclosed	
1. Enclosure	NEMA 4 & 13, DUST TIGHT & OIL TIGHT	
2. No. of Terminals	Vendor to specify	
3. Spares offer	Commissioning/Customer	

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PART - II : VENDOR CHECK LIST FOR BURNER TRIP VALVE

SERVICE: BTV [AIR]

 ENQUIRY No.:
 TAG. NO: A20A - A20R

UNITS: Flow-Liquid Cu M / hr, Steam-Kg / hr, Gas-NCu / hr, Pr-kg / cmSq (g), Temp-°C

BHEL SPECIFICATION		VENDOR CONFIRMATION
REFERENCE DOCUMENTS:(SPECIFY DWG/MANUAL REF.NOs. BELOW)		
1. AssyDimensional Dwg	Vendor to furnish	
2. Assy Hookup & Terminal boxDwg	Vendor to furnish	
3.Spares Catalogue/DRG No	Vendor to specify	
J.MARKING		
1.S S name plate	Vendor to specify	
2. Spares individually tagged	Vendor to specify	
K. PAINTING	Epoxy coated	
L.PACKING	As per clause no.7	
M.TEST CERTIFICATES		
1.Hydraulic test	Vendor to specify	
2.Seat leak test	Vendor to specify	
3.Material certificates	Vendor to specify	
4.Std. test on Actuator	Vendor to specify	
5.Dimentional test	Vendor to specify	
N.OPR. & INSTRN. MANUALS		
1.Min.of 6 copies	Vendor to confirm	
IIB	SPECIAL CONTRACT REQUIREMENT, IF ANY	
	(USE AN ANNEXURE IF THIS SPACE IS INADEQUATE)	

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**PART - I: DATASHEET FOR BURNER TRIP VALVE**

BTV-LFO (LO40A to LO40R)

UNITS: Flow-Liquid Cu M / hr, Steam-Kg / hr, Gas-NCu/hr, Pr-kg /cmSq(g), Temp°C

O.FLOW DATA		C.SOLENOID PILOT	
1. Line Fluid		1. Make / Type No	
2. Flow Max		2. Style	
3. Normal in pr		3. To Open Main Valve	
4. Allowable DP		4. To Close Main Valve	
5. Actuator Sizing DP		5. Enclosure	
6. Temp Max		6. Coil Duty	Heavy duty continuous 100°C ambient
7.Flow Temp		7. Coil Rating	240V AC
8. Flow Sp Gravity		8. Insulation Class	H
9. Flow Viscosity		9. Inrush / Hold Wattage	
10. Max Flow Cv		10. Valve Flow Cv	
11. Plug lift%		11. Body & Trim Matl	SS Bar Stock & AISI SS-316
12. Valve Cv		12. Wetted parts	Stainless Steel
13. Valve Closing Time	Sec.	13. Seating	Resilient for tight shut
14. Valve Opening Time	Sec.Adjustable	14. Valve Ends	
A. VALVE BODY		15. Cable entry	
1. Make/Type No		16. Terminal Block	Provided
2. Line Size	ODXT mm	D. QUICK EXHAUST VL	
3. Body/port Size	Nb mm	1. Make/type No	To meet O.13
4. Plug Travel	Mm	2. Port Conn	
5. Body Style / Rating	NP	E. FLOW RESTRICTOR	
6. Ends	Flanged to :	1. Make/Type No	To meet O.14
7. Port		2. Port Conn	
8. Guiding	Cage or Top & Bottom	3. Adjustable Time Range	
9. Body Material	Carbon Steel, ASTM A216 WCB	F. AIRSET	
10. Trim No		Not required	
11. Plug Matl		1. Airset set pr	
12. Steam Size/Material		G. LIMIT SWITCHES	
13. Seat Material		off	
14. Cage Material		1. Make/Type No	
15. Plug/Gauge Style		2. Mounted For	Full open Full close % Open
16. Seat Leak Class	VI to ANSI FCI 70-2	3. Contacts	DPDT
17. Plug pushdown to		4. Contact Rating	240AC 5Amp 220 DC 0.5 Amp
18. Flow Tends to		5. Enclosure	
19. Bonnet / packing		6. Cable Entry	
20. Lub/Isol Valve		H. TERMINAL BOX	
21. Drain Valve		Provided	
22. Noise Level		1. Enclosure	
		2. No. of Terminals	
		I. SUPPLY CONDITION	
		1. Assembly – 1	
		2. Assembly – 2	
		3. Pneumatic erminal	To suit 8 mm tube
B. ACTUATOR ASSY		4. Spares	Individually tagged and packed
1. Make/Type No		5. IBR	YES / NO
2. Style		REF. DOCUMENTS:(SPECIFY DWG/MANUAL REF.NOS. BELOW)	
3. Size/Volume		1. Assy Dimensional Dwg	
4. Diaphragm Matl		2. Assy Hookup Dwg	
5. Spring No/Range		S.NO	ITEM
6. Spring No/Range		O & M Manual	Spares identifier
7. Air to		3	A
8. Signal pr		4	B
9. Pr port Conn		5	B 11
10. On Air Failure	Stay Put	6	C
11. Lockup Valve type No	BHEL scope	7	D
12. Lockup Valve Set pr		8	E
		9	F
		10	G



PART - II: VENDOR CHECK LIST FOR BURNER TRIP VALVE

SERVICE: BTV [LFO]

ENQUIRY No.:
TAG. NO: LO40A – LO40R

UNITS: Flow-Liquid Cu M / hr, Steam-Kg / hr, Gas-NCu / hr, Pr-kg / cmSq (g), Temp-°C

IIB	BHEL SPECIFICATION	VENDOR CONFIRMATION
J.APPLICABLE STANDARDS:		
1.Control valve sizing equations	ANSI / ISA S75.01	
2. Control valve capacity test procedure	ANSI / ISA S75.02	
3. Seat leakage	ANSI FCI 70-2	
4. Face to face dimensions.	ANSI B 16.10	
5. Flange dimensions & drilling	ANSI B 16.5	
O.FLOW DATA		
1. Line Fluid	Light Oil	
2. Flow Max	3.971	
3. Normal in pr	11.5	
4. Allowable DP	0.5	
5. Actuator Sizing DP	17.25	
6. Temp Max	50	
7.Flow Temp	40	
8. Flow Sp Gravity	0.82	
9. Flow Viscosity	2.5-15.7	
10. Max Flow Cv	5.949	
11. Max.flow Plug Lift	Full	
12. Valve Cv	Vendor to specify	
13. Valve Closing Time	< 1 Sec.	
14. Valve Opening Time	6 to 10 Sec.Adjustable	
A. VALVE BODY		
1. Make/Type No	Vendor to specify	
2. Line Size mm	OD 33.4 X 3.38 t	
3. Body/port Size mm	NB 25	
4. Plug Travel mm	Vendor to specify	
5. Body Style / Rating	ANSI 300 LBS NP	
6. Ends	Flanged ANSI 300 LBS	
7. Port	SINGLE /DOUBLE	
8. Guiding	STEM / PORT	
9. Body Matl	Carbon Steel, ASTM A216 WCB	
10. Trim No	Vendor to specify	
11. Plug Matl	SS specify grade	
12. Stem Size/Matl	Vendor to specify	
13.Seat Matl	Vendor to specify	
14. Cage Matl	Vendor to specify	
15.Plug/Gauge Style	Equal % / Linear	
16. Seat Leak Class	VI to ANSI FCI 70-2	
17. Plug pushdown to	Close	
18. Flow Tends to	Open	
19. Bonnet / packing	Std/Extended Specify	
20. Lub/Isol Valve	Vendor to specify if required	
21. Noise Level	< 85 dBA at 1 m distance	
21a.Valve Internals	Shall not vibrate,chatter & noisy	

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PART - II : VENDOR CHECK LIST FOR BURNER TRIP VALVE

SERVICE: BTV [LFO]

ENQUIRY No.:

TAG. NO: LO40A – LO40R

UNITS: Flow-Liquid Cu M / hr, Steam-Kg / hr, Gas-NCu / hr, Pr-kg / cmSq (g), Temp-°C

IIA	BHEL SPECIFICATION	VENDOR CONFIRMATION
B. ACTUATOR ASSY		
1. Make/Type No	Vendor to specify	
2. Style	Vendor to specify	
3. Size/Volume	Vendor to specify	
4. Diaphragm Material	Vendor to specify	
5. Spring No/Range	Vendor to specify	
6. Spring to	Close	
7. Air to	Open	
8. Signal pr	Vendor to specify	
9. Pr port Conn	Vendor to specify	
10. On Air Failure	Stay Put	
11. Lockup Valve	BHEL scope	
12. Lockup Valve Set pr	Vendor to specify	
C. SOLENOID PILOT NC 2-Way 3-Port Dual Coil 240V AC		
1. Make / Type No	Vendor to specify	
2. Style	Vendor to specify	
3. To Open Main Valve	Energise solenoid coil	
4. To Close Main Valve	De-energise solenoid coil	
5. Enclosure	WEATHER PROOF	
6. Coil Duty	Heavy duty Continuous at 100°c ambient	
7. Coil Rating	240V AC	
8. Insulation Class	H	
9. Inrush / Hold Wattage	Vendor to specify	
10. Valve Flow Cv	3	
11. Body Material	SS Bar Stock & AISI SS-316	
12. Wetted parts	Stainless steel	
13. Seating	Resilient for tight shut	
14. Valve Ends	3/8" NPT	
15. Cable entry	1/2" conduit	
D. QUICK EXHAUST VALVE To meet O.13		
1. Make/Type No	Vendor to specify	
2. Port Connection	Vendor to specify	
E. FLOW RESTRICTOR To meet O.14		
1. Make/type No	Vendor to specify	
2. Port Connection	Vendor to specify	
3. Adjustable Time Range	Vendor to specify	
F. AIRSET NOT REQUIRED-BHEL scope		
1. Airset set pr	Vendor to specify	
G. LIMIT SWITCHES 2 NOS 1no Open&1no Close		
1. Make/Type No	Vendor to specify	
2. Mounted For	Full open Full close % Open	
3. Contacts	DPDT	
4. Contact Rating	240AC 5Amp 220Dc 0.25 Amp	
5. Enclosure	EX. PROOF	
6. Cable Entry	Vendor to specify	
H. PNEUMATIC TERMINAL To suit 8 mm SS tube		
I. TERMINAL BOX Provided as per the sketch enclosed		
1. Enclosure	NEMA 4&13 DUST TIGHT& OIL TIGHT	
2. No. Of Terminals	Vendor to specify	
3. Spares offer	Commissioning/ Customer	

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PART - II : VENDOR CHECK LIST FOR TRIP VALVE
SERVICE: BTV [LFO]**ENQUIRY No.:**
TAG. NO: LO40A – LO40R**UNITS:** Flow-Liquid Cu M / hr, Steam-Kg / hr, Gas-NCu / hr, Pr-kg / cmSq (g), Temp-°C

BHEL SPECIFICATION		VENDOR CONFIRMATION
REFERENCE DOCUMENTS:(SPECIFY DWG/MANUAL REF.NOs. BELOW)		
1. AssyDimensional Dwg	Vendor to furnish	
2. Assy Hookup & Terminal boxDwg	Vendor to furnish	
3.Spares Catalogue/DRG No	Vendor to specify	
J.MARKING		
1.S S name plate	Vendor to specify	
2. Spares individually tagged	Vendor to specify	
K. PAINTING		
	Epoxy coated	
L.PACKING		
	As per clause no.7	
M.TEST CERTIFICATES		
1.Hydraulic test	Vendor to specify	
2.Seat leak test	Vendor to specify	
3.Material certificates	Vendor to specify	
4.Std. test on Actuator	Vendor to specify	
5.Dimentional test	Vendor to specify	
N.OPR. & INSTRN. MANUALS		
1. In soft form & 3 hard copies.	Vendor to confirm	
IIB SPECIAL CONTRACT REQUIREMENT, IF ANY		
(USE AN ANNEXURE IF THIS SPACE IS INADEQUATE)		

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PART - I: DATASHEET FOR BURNER TRIP VALVE BTV-SCAVENGING AIR (A59A to A59R)

UNITS: Flow-Liquid Cu M / hr, Steam-Kg / hr, Gas-NCu/hr, Pr-kg /cmSq(g), Temp°C

O.FLOW DATA		C.SOLENOID PILOT	
1. Line Fluid		1. Make / Type No	
2. Flow Max		2. Style	
3. Normal in pr		3. To Open Main Valve	
4. Allowable DP		4. To Close Main Valve	
5. Actuator Sizing DP		5. Enclosure	
6. Temp Max		6. Coil Duty	Heavy duty continuous 100°C ambient
7.Flow Temp		7. Coil Rating	240V AC
8. Flow Sp Gravity		8. Insulation Class	H
9. Flow Viscosity		9. Inrush / Hold Wattage	
10. Max Flow Cv		10. Valve Flow Cv	
11. Plug lift%		11. Body & Trim Matl	SS Bar Stock & AISI SS-316
12. Valve Cv		12. Wetted parts	Stainless Steel
13. Valve Closing Time	Sec.	13. Seating	Resilient for tight shut
14. Valve Opening Time	Sec.Adjustable	14. Valve Ends	
		15. Cable entry	
A. VALVE BODY		16. Terminal Block	Provided
1. Make/Type No		D. QUICK EXHAUST VL	To meet O.13
2. Line Size	ODXT mm	1. Make/type No	
3. Body/port Size	Nb mm	2. Port Conn	
4. Plug Travel	Mm		
5. Body Style / Rating	NP	E. FLOW RESTRICTOR	To meet O.14
6. Ends	Flanged to :	1. Make/Type No	
7. Port		2. Port Conn	
8. Guiding	Cage or Top & Bottom	3. Adjustable Time Range	
9. Body Material	Carbon Steel, ASTM A216 WCB		
10. Trim No		F. AIRSET	Not required
11. Plug Matl		1. Airset set pr	
12. Steam Size/Material			
13.Seat, Material		G.LIMIT SWITCHES	off
14. Cage Material		1. Make/Type No	
15.Plug/Gauge Style		2. Mounted For	Full open Full close % Open
16. Seat Leak Class	VI to ANSI FCI 70-2	3. Contacts	DPDT
17. Plug pushdown to		4. Contact Rating	240AC 5Amp 220 DC 0.5 Amp
18. Flow Tends to		5. Enclosure	
19. Bonnet / packing		6.Cable Entry	
20. Lub/Isol Valve		H. TERMINAL BOX	Provided
21. Drain Valve		1.Enclosure	
22. Noise Level		2. No. of Terminals	
		I.SUPPLY CONDITION	
		1. Assembly – 1	
		2. Assembly – 2	
		3. Pneumatic erminal	To suit 8 mm tube
		4. Spares	Individually tagged and packed
B. ACTUATOR ASSY		5. IBR	YES / NO
1. Make/Type No		REF. DOCUMENTS:-(SPECIFY DWG/MANUAL REF.NOs. BELOW)	
2. Style		1.Assy Dimensional Dwg	
3. Size/Volume		2.Assy Hookup Dwg	
4. Diaphragm Matl		S.NO	ITEM O & M Manual Spares identifier Catalog&Spec
5.Spring No/Range		3	A
6. Spring No/Range		4	B
7. Air to		5	B 11
8. Signal pr		6	C
9. Pr port Conn		7	D
10. On Air Failure	Stay Put	8	E
11. Lockup Valve type No	BHEL scope	9	F
12. Lockup Valve Set pr		10	G

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**PART - II: VENDOR CHECK LIST FOR BURNER TRIP VALVE****SERVICE: BTV [SCAVENGING AIR]****ENQUIRY No.:****TAG. NO: A59A – A59R****UNITS:** Flow-Liquid Cu M / hr, Steam-Kg / hr, Gas-NCu / hr, Pr-kg / cmSq (g), Temp-°C

IIB	BHEL SPECIFICATION	VENDOR CONFIRMATION
J.APPLICABLE STANDARDS:		
1.Control valve sizing equations	ANSI / ISA S75.01	
2. Control valve capacity test procedure	ANSI / ISA S75.02	
3. Seat leakage	ANSI FCI 70-2	
4. Face to face dimensions.	ANSI B 16.10	
5. Flange dimenstions & drilling	ANSI B 16.5	
O.FLOW DATA		
1. Line Fluid	Air	
2. Flow Max	289	
3. Normal in pr	6	
4. Allowable DP	0.5	
5. Actuator Sizing DP	9	
6. Temp Max	50	
7.Flow Temp	40	
8. Flow Sp Gravity	-	
9. Flow Viscosity	-	
10. Max Flow Cv	2.780	
11.Max. flow Plug Lift	Full	
12. Valve Cv	Vendor to specify	
13. Valve Closing Time	< 1 Sec.	
14. Valve Opening Time	6 to 10 Sec.Adjustable	
A. VALVE BODY		
1. Make/Type No	Vendor to specify	
2. Line Size mm	OD 33.4 X 3.38 t	
3. Body/port Size mm	NB 25	
4. Plug Travel mm	Vendor to specify	
5. Body Style / Rating	ANSI 300 LBS NP	
6. Ends	Flanged ANSI 300 LBS	
7. Port	SINGLE/DOUBLE	
8. Guiding	STEM / PORT	
9. Body Matl	Carbon Steel, ASTM A216 WCB	
10. Trim No	Vendor to specify	
11. Plug Matl	SS specify grade	
12. Stem Size/Matl	Vendor to specify	
13.Seat Matl	Vendor to specify	
14. Cage Matl	Vendor to specify	
15.Plug/Gauge Style	Equal %/Linear	
16. Seat Leak Class	VI to ANSI FCI 70-2	
17. Plug pushdown to	Close	
18. Flow Tends to	Open	
19. Bonnet / packing	Std/Extended Specify	
20. Lub/Isol Valve	Vendor to specify if required	
21. Noise Level	< 85 dBA at 1 m distance	
21a.Valve Internals	Shall not vibrate, chatter & noisy	

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PART - II : VENDOR CHECK LIST FOR BURNER TRIP VALVE

BHEL MATERIAL CODE: L183214220002006
SERVICE: BTV [SCAVENGING AIR]

ENQUIRY No.:
TAG. NO: A59A – A59R

UNITS: Flow-Liquid Cu M / hr, Steam-Kg / hr, Gas-NCu / hr, Pr-kg / cmSq (g), Temp-°C

IIA	BHEL SPECIFICATION	VENDOR CONFIRMATION
B. ACTUATOR ASSY		
1. Make/Type No	Vendor to specify	
2. Style	Vendor to specify	
3. Size/Volume	Vendor to specify	
4. Diaphragm Material	Vendor to specify	
5.Spring No/Range	Vendor to specify	
6. Spring to	Close	
7. Air to	Open	
8. Signal pr	Vendor to specify	
9. Pr port Conn	Vendor to specify	
10. On Air Failure	Stay Put	
11. Lockup Valve type no.	NOT REQD. – BHEL scope	
12. Lockup Valve Set pr	Vendor to specify	
C.SOLENOID PILOT		
NC 2-Way 3-Port Dual Coil 240V AC		
1. Make / Type No	Vendor to specify	
2. Style	Vendor to specify	
3. To Open Main Valve	Energise solenoid coil	
4. To Close Main Valve	De-energise solenoid coil	
5. Enclosure	WEATHER PROOF	
6. Coil Duty	Heavy duty Continuous at 100°c ambient	
7. Coil Rating	240V AC	
8. Insulation Class	H	
9. Inrush / Hold Wattage	Vendor to specify	
10. Valve Flow Cv	3	
11. Body Material	SS Bar Stock & AISI SS-316	
12. Wetted parts	Stainless Steel	
13. Seating	Resilient for tight shut	
14. Valve Ends	3/8" NPT	
15. Cable entry	1/2" conduit	
D. QUICK EXHAUST VALVE		
To meet O.13		
1. Make/Type No	Vendor to specify	
2. Port Connection	Vendor to specify	
E.FLOW RESTRICTOR		
To meet O.14		
1. Make/type No	Vendor to specify	
2. Port Connection	Vendor to specify	
3. Adjustable Time Range	Vendor to specify	
F. AIRSET		
NOT REQD.-BHEL scope		
1. Airset set pr	Vendor to specify	
G.LIMIT SWITCHES		
2 NOS 1no Open&1no Close		
1. Make/Type No	Vendor to specify	
2. Mounted For	Full open Full close % Open	
3. Contacts	DPDT	
4. Contact Rating	240AC 5Amp 220 DC 0.5 Amp	
5. Enclosure	EX. PROOF	
6.Cable Entry	Vendor to specify	
H. PNEUMATIC TERMINAL		
To suit 8 mm O.D. X 1.65 t tube		
I. TERMINAL BOX		
Provided as per the sketch enclosed		
1.Enclosure	NEMA 4 & 13,DUST TIGHT & OIL TIGHT	
2. No. of Terminals	Vendor to specify	
3. Spares offer	Commissioning/Customer	

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PART - II : VENDOR CHECK LIST FOR BURNER TRIP VALVE

SERVICE: BTV [SCAVENGING AIR]

ENQUIRY No.:
TAG. NO: A59A – A59R

UNITS: Flow-Liquid Cu M / hr, Steam-Kg / hr, Gas-NCu / hr, Pr-kg / cmSq (g), Temp-°C

BHEL SPECIFICATION		VENDOR CONFIRMATION
REFERENCE DOCUMENTS:(SPECIFY DWG/MANUAL REF.NOs. BELOW)		
1. AssyDimensional Dwg	Vendor to furnish	
2. Assy Hookup & Terminal boxDwg	Vendor to furnish	
3.Spares Catalogue/DRG No	Vendor to specify	
J.MARKING		
1.S S name plate	Vendor to specify	
2. Spares individually tagged	Vendor to specify	
K. PAINTING	Epoxy coated	
L.PACKING	As per clause no.7	
M.TEST CERTIFICATES		
1.Hydraulic test	Vendor to specify	
2.Seat leak test	Vendor to specify	
3.Material certificates	Vendor to specify	
4.Std. test on Actuator	Vendor to specify	
5.Dimentional test	Vendor to specify	
N.OPR. & INSTRN. MANUALS		
1.Min.of 6 copies	Vendor to confirm	
IIB	SPECIAL CONTRACT REQUIREMENT, IF ANY	
(USE AN ANNEXURE IF THIS SPACE IS INADEQUATE)		

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Technical Pre-Qualification Requirement (PQR) for Oil system Control Valves

1. The vendor shall be an established supplier of **Top & bottom/ Top & port/ post guided/ cage guided plug, Globe body, single seated with Pneumatic diaphragm actuated type control valve**, hereby referred as **control valve**, having adequate Engineering, Manufacturing, testing and servicing facilities and shall furnish technical backup documents in proof for above requirements.
2. The vendor shall have experience of having supplied **control valves** as per the technical specification for LDO/HFO application or application of similar severity. Supply reference list with details of PO, PO date, customer name shall be submitted.
3. The **control valve** offered shall be from the existing regular supply range of the vendor. Vendor shall provide the product catalogue.
4. Proven track record is required. As proof of above pre-qualifying requirement points, vendor should submit :
 - a. Minimum ONE end user certificate for the satisfactory operational performance of their supplied control valve meeting the minimum pre-qualifying requirements stated above.

OR

Minimum Two past purchase orders of similar control valves meeting the minimum pre-qualifying requirements stated above.

 - b. Vendor to attach the corresponding data sheets/ technical documents of the Control Valve supplied as per P.O / End user certificate (submitted vide point 4.c) for our review.
5. In case of ordering, the Vendor shall have the responsibility for the following and same to be confirmed point wise.
 - i) Vendor should have the component replacement responsibility in case of defect / failure.
 - ii) Experts from Vendor's side shall associate in commissioning activities at site, if required.
 - iii) Vendor should ensure the product performance during erection & commissioning and ensure performance guarantee.
6. Backup document checklist to meet PQR to the fullest satisfaction of BHEL:

Clause	Documents acceptable	Check list
1	i) ISO or Other third Party certification about the engineering, manufacturing, testing and servicing facilities in the name of supplier/OEM as applicable. The certificate shall be specific for the product quoted by the vendor. ii) List of manufacturing, testing and servicing facilities available (like machinery/equipment) in the letterhead of supplier/OEM as applicable.	☐
2	Supply reference list with details of PO, PO date, customer name, application severity/type in the form of a table	☐
3	Product Catalogue in the name of supplier/OEM as applicable	☐
4	Min. one end user certificate (or) Two POs in the name of supplier/OEM as applicable	☐
5	Signed copy of this technical PQR document	☐

OEM signature and seal with Date

(If applicable)

Vendor signature and seal with Date



SPECIFICATION FOR FO SYSTEM CONTROL VALVES

I. BINDING DOCUMENTS:

This Specification TOS: MEL: 1360, Part-I Data Sheet and the final Vendor Check List shall form part of the Purchase Order and be binding.

II. INTENT:

To design, manufacture, test and supply of Fuel Oil System Control Valves.

III. SCOPE:

The Control Valves shall be complete in all respects as per the specification and the Data Sheet.

IV. APPLICABLE STANDARDS:

- a. ANSI / ISA 75.01 for control valve sizing equations.
- b. ANSI / ISA 75.02 for control valve capacity test procedure.
- c. ANSI FCI 70.2 for seat leakage.
- d. ANSI B 16.10 for face-to-face dimensions.
- e. ANSI B 16.5 for flange dimensions and drilling.
- f. ANSI B 31.1, ANSI B 16.34, ASME, IBR and other applicable Standards if any.

V. TECHNICAL REQUIREMENTS:

1	Flow Parameters	For Flow Parameters and requirement of accessories refer to Item Description and/or the Vendor Check List.
2	Operating Criteria	At 80% opening of valve flow max, stem travel of 80% at max. Flow condition and stem travel of 20% at min. flow condition.
3	Capacity	120% of max. flow handling capacity.
4	Percentage of stem Travel from min. Flow to max. Flow	Shall not be less than 50%.
5	Sizing criteria	As per ISA Hand Book with measures to avoid choked flow.
6	Outlet velocity	Max. 150 m/sec. for steam and 8 m/sec. for liquid. 50% of sonic velocity for flashing services.
7	Noise	Valve internal shall not vibrate or chatter and not unduly noisy. The noise level shall be limited to max. 85 dB at 1 mtr. From valve surface.



8	Design shall match as to prevent cavitation, wire drawing flashing on downstream side of valve and pipe	Yes. By providing anti-cavitation trim by dropping the pressure in stages. Simply shifting of point of cavitation shall not be acceptable.
9	Type of valve	Top & Bottom, Top & Port, Post guided or Cage guided plug, Globe body ,single seated.
10	Leakage Class	As per ANSI B 16.104 /ANSI FCI 70-2 /1991 - Class-V
11	Characteristics	Equal %, quick acting as applicable
12	Trim type	Quick changing, removable through top after bonnet removal without cutting
13	Plugs for pressure balancing	Yes. If required.
14	Bonnet	Plain Bonnet with packing to suit duty. Provide special bonnets if duty warrants as per Maker's Standard.
14	Bonnet joints	Flanged and bolted type designed for easy disassembly and correct stem alignment without any union or thread
15	Plug construction	Single piece cast/forged/machined from single bar stock.
16	Body Material	Cast or forged carbon steel
17	Packing Material	Graf oil
18	Material for stems, guide brushings, plugs, seat rings, stem lock pins, stuffing box parts and other trim parts	Stainless Steel (with a minimum Cr. content of 13%)
19	Stellite (Hardened)	Required for seat (steam application only), guide posts & bushings
20	Trim Material	17-4 PH/440 c depending on service condition to avoid erosion
21	End connection	Butt welded, socket welded or flanged depending on appln.
22	Stem	Stem polished and finished .
23	Flanged Ends	Steel flanges RF type as per ANSI B 16.5 corresponding to pressure/temp greater than body
24	Extension Bonnet	For all valves where process temp. is greater than 280 °C
25	Stem Travel Indicator	Provide for all valves
26	Type of Actuator	Pneumatic spring opposed diaphragm type for all control valves with accessories in piped up condition
27	Selection/sizing	To suit pressure drop and max. shut off pressure
28	Mounting	Horizontal/vertical
29	Ambient temp	60°C max
30	Diaphragm material and	Moulded synthetic rubber and press steel housing



	housing	
31	Air filter	It shall be of sintered bronze material with 2" pressure gauge for power air
32	Type of Positioner	Force balance type, high capacity, high gain pneumatic. The positioner shall be direct/reverse action. Field adjustable and with 3 gauges (One for Input, One for output and one for Signal)
33	Input signal	0.2 to 1 kg/cm ² (g)
34	Cams with Positioner	Equal percentage and quick acting
35	Positioner output	Field reversible linearity of $\pm 1\%$ and hysteresis of $\pm 0.5\%$ Of span
36	Position XMTR	LVDT (Non/contact type), 2 wire, 24 V DC operated
37	Output	4-20 mA DC
38	Open and close limit switch (Explosion Proof)	DPDT (2 NO + 2 NC) rated for 5A 240 V AC or 0.25A/ 220V DC
39	Solenoid Valve	Body : SS Bar Stock Trim : AISI SS-316, Heavy duty, Class - H insulation 24 V DC operated universal type: CV > 1.5
40	Air Lock	Auto reset type relay with alarms and field adjustability
41	Integral Terminal Box	To be provided, refer sheet 08 of 12 & 09 of 12.
42	Hand Wheel	To be provided, side mounted.

ADDITIONAL REQUIREMENTS:

- 1) All the control valves shall be supplied with positioners
- 2) Include all accessories as under item description & / or Vendor check list.
- 3) Limit switches shall be mounted in explosion proof box, if provided.
- 4) All accessories except Limit Switch shall be weather proof, water / oil tight to NEMA 4 & 13 suitable for outdoor installation and 60 deg C ambient.
- 5) All accessories shall be supplied in fully mounted and piped-up condition with 3/8" OD PVC jacketed SS tube.
- 6) Pneumatic ports on all equipments shall be 1/4" NPT female.

VI. MARKING:

a) Stainless steel nameplates with the following boldly engraved shall be firmly fixed to the bonnet:

PREPARED

CHECKED

APPROVED

Page 3



Maker's name & production serial number; service; BHEL material code; type, size and rating of body; Size & form of trim; Type, size & spring range of actuator; valve action; air failure position and plug lift, valve tag no and Trim material.

b) Each spare shall be individually tagged with part name, maker's name & spare code and BHEL Material Code.

VII. PAINTING:

a) All interior surfaces supplied with rust preventive oil following hydraulic test and drying.

b) All exposed surfaces degreased, derusted and epoxy coated.

VIII. PACKING:

a) All openings (fluid, pneumatic and electric) shall be firmly capped.

b) Valves shall be packed in wooden boxes with water proof under cover.

c) Liberal packing material & struts shall be used to arrest rolling to protect from transit damages.

d) The Limit Switches, Positioner, Position Transmitter and such components shall be capsulated covered properly with thermocole material.

IX. TEST CERTIFICATES:

All tests/inspection shall be carried out as per the approved specification and approved quality plan as per NTPC format. Approval shall be obtained prior to manufacturing.

a) Body Hydraulic Test done at 1.5 times the cold body rating.

b) Seat Leak Test as per ANSI /FCI/70-2/1991 Standard to meet Class V. for all Valves.

c) Material Certificate for Body, Bonnet and Trim.

d) Standard tests on actuator, Positioner and Position Transmitter.

e) For proper actuation and response of Position Transmitter and Limit Switches.

f) Dimensional certificate for overall dimensions and all terminal connections.

g) IBR Certificates in Form III-C shall be furnished for the steam service valves



- h) Quality Plan in BHEL format shall be submitted.
- i) Cv test as type test for one size/type as per standard. Certificate for type test carried out shall be presented during inspection.

X. INWARD INSPECTION:

- a) Verify the Works Test Certificates, Marking Particulars, Name Plates of each accessory and the scope of supply.
- b) Watch for damages
- c) Perform random check on all terminal connections and the internal particulars.

XI. OPERATING & INSTRUCTION MANUALS:

Operation and Maintenance manuals shall be submitted in soft in editable form and drawings shall be in ACAD-13 or higher. Manuals comprising of details on items listed under XII a and XII b below shall be furnished within 1 month from the date of Purchase Order.

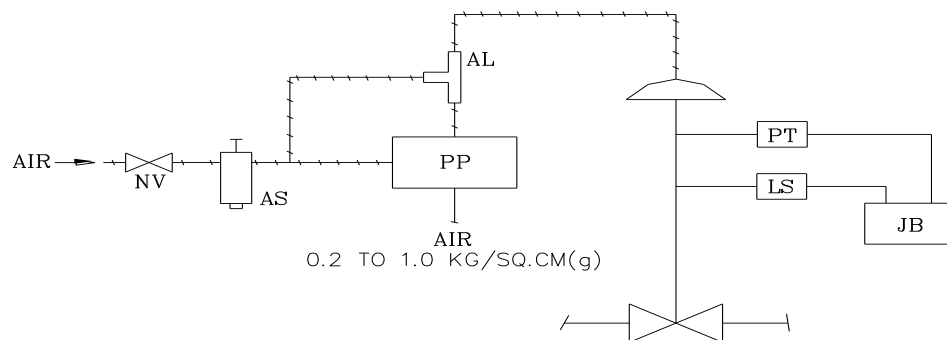
XII. DOCUMENTS TO BE SUBMITTED WITH THE OFFER:

- a) Completely filled in vendor checklist.
- b) All documents referred under 'Reference Documents' Part-I of the Data Sheet (Dimensional Drg with all accessories mounted, catalogues, specifications, spares identifier drawings, O&M Manuals).
- c) Spares quotation for 3 years operation with clear description, part No., identification drawing, break-up price and with 6 months validity.
- d) Copies of std test methods and copies of certificate formats for main valve and all accessories.
- e) Confirmation/deviation list to each point of this specification.
- f) Sizing calculation for actuator and control valve; valve outlet velocity and noise level calculations.
- g) Pneumatic Hook up Diagram similar to the one enclosed.



h) Terminal Box wiring Diagram similar to the one enclosed.

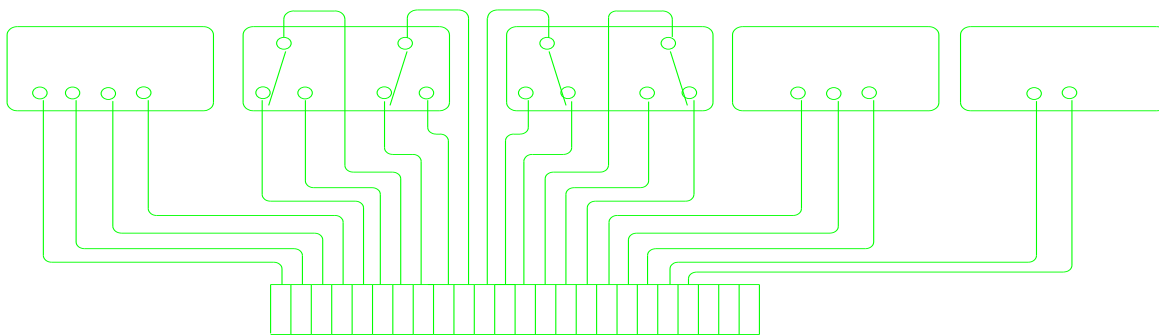
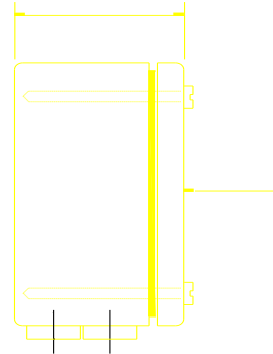
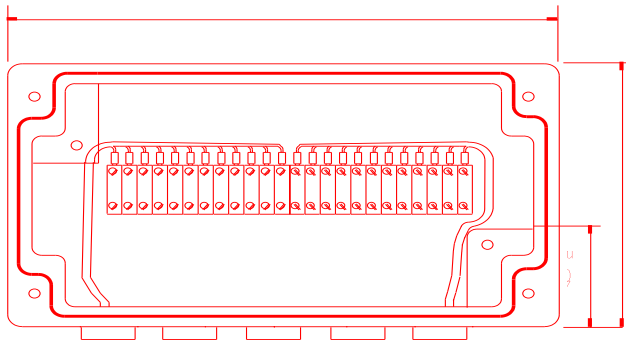
HOOK UP DIAGRAM FOR CONTROL VALVE



PP – PNEUMATIC POSITIONER
 AS – AIR SET
 AL – AIR LOCK
 PT – POSITION TRANSMITTER
 JB – JUNCTION BOX
 LS – OPEN & CLOSE LIMIT SWITCHES
 NV – BRASS ISOLATION VALVE

NOTE:

ALL REQUIRED FITTINGS SHALL BE PROVIDED BY VENDOR.
 SIZE OF VALVES / FITTINGS SHALL BE INDICATED.



NOTE : -

1. ELMEX TERMINAL BLOCKS SHALL BE USED IN THE JUNCTION BOX.
2. THE VALVE MANUFACTURER SHALL DO THE WIRING AS SHOWN IN THIS DRAWING. TERMINATION SHALL BE DONE BY USING SUITABLE CRIMPING LUGS.
3. THE JUNCTION BOX SHALL BE MOUNTED SUITABLY ON THE VALVE FOR EASY ACCESSIBILITY.
4. MATERIAL OF JUNCTION BOX: ALUMINIUM
5. THE JUNCTION BOX SHALL HAVE NEMA 4 & 13 CLASS OF ENCLOSURE PROTECTION
6. I) FROM THE POSITION TRANSMITTER TO THE JUNCTION BOX, THE CABLE SHALL ENTER THROUGH DOUBLE COMPRESSION TYPE BRASS CHROME PLATED CABLE GLAND SUITABLE FOR 0.5 SQ.MM TYPE - F INSTRUMENTATION CABLE . SUITABLE CABLE GLAND TO BE PROVIDED IN JUNCTION BOX.



II) FOR THE CABLING FROM JUNCTION BOX TO REMOTE CONTROL (DDCMIS), ONE 5 PIN PLUG AND SOCKET SUITABLE FOR 2 PAIR F – TYPE INSTRUMENTATION CABLE IS TO BE PROVIDED IN THE JUNCTION BOX.

III) FOR THE SOLENOID VALVE COMMAND FROM REMOTE CONTROL (DDCMIS), CABLE GLAND SUITABLE FOR 0.5 SQ.MM TYPE – G INSTRUMENTATION CABLE, 4 PAIR TO BE SUPPLIED IN THE JUNCTION BOX.

- 7 PVC FLEXIBLE CONDUIT SHALL BE USED AND CONNECTED TO SUITABLE END CONNECTORS & SEALED AT BOTH ENDS USING SUITABLE SEALANT.(EPOXY OR EQUIVALENT).
8. CONDUIT ENTRIES ARE PROVIDED ONLY AT THE BOTTOM.
8. MINIMUM GAP OF 25 MM IS TO BE LEFT BETWEEN THE TERMINALS OF ELECTRONIC POSITION TRANSMITTER & SOLENOID VALVE.
9. THE JUNCTION BOX SHALL HAVE EARTHING PROVISION.

**PART - I: DATASHEET FOR CONTROL VALVE LOFCV (LO33A)**

UNITS: Flow--Liquid CuM/hr, Steam--Kg/hr, Gas--NCuM/hr, Pr.--Kg/cmsq (g), Temp--°C

O.FLOW DATA			C.POSITIONER	SMART POSITIONER
1.Line Fluid			1.Make/Type No	
2.Flow Max			2. Action	Direct / Reverse Field Adjustable
3.Flow Min			3. Supply Pr	
4.Max Flow in Pr			4.Bypass/Gauge	Provided Three
5.Min Flow in Pr			5. Signal In/Out	4-20 mA
6.Max Flow out Pr			6. Air set make & type no	
7. Min Flow out Pr			7.Air set pr. range	
8.Actuator Sizing DP				
9.Temp Max			D.SOLENOID VALVE	
10.Flow Temp			1.Make / Type no	
11.Flow Sp Gravity			2.Style	
12.Flow Viscosity			3.Enclosure	
13.Max / Min Flow Cv			4.Valve flow CV	
14.plug Lifts @ max/minflow	%	%	5.Cable entry	
15.Valve Cv / Cf			E.TERMINAL BOX	
			1.Enclosure	
			2.Terminals	
A.VALVE BODY				
1.Make/Type No				
2.Line Size	OD X t	mm		
3.Body/ Port Size	Nb	mm		
4.Plug Travel	Mm			
5.Body Style/Rating		NP	F.POSITION TRANSMETER	
6.Ends			1.Make / Type no	
7.Ports			2.Style	3 Wire / 2 Wire
8.Guiding	Cage or Top & Bottom		3.Input	
9.Body Matl			4.Load	
10.Trim No			5.Out Put	
11.Plug Matl			6.Cable Entry	
12.Stem Size/Matl			G.LIMIT SWITCHES	
13.Seat Matl			1.Make/Type no	
14.Cage Matl			2.Mounted for	Max. Plug lift / Min. Plug lift
15.Plug/ Gauge Style			3.Contacts	Off
16.Seat Leak Class			4.Contact Rating	
17.Plug Pushdown to			5.Enclosure	
18.Flow Tends to			6.Cable Entry Size	
19.Bonnet/Packing			H.SUPPLY CONDITION	
21.Drain Plug			1.Assembly-1	
22.Noise Level			2.Assembly-2	
			3.Pneumatic Terminal	To suit 8mm OD x 1.65 mm t Tube
			4.Spares	Individually tagged & packed
B.ACTUATOR ASSY				
1.Make / type no				
2.Style				
3.Size/Volume			I.REF. DOCUMENTS : SPECIFY DWG/ MANUAL REF. NOS.	
4.Diaphragm Matl			1.Assy Dimentional Dwg	2.Assy Hookup Dwg
5. Port Size	1/4 " NPT		S.No Item O & M Manual	Spares identifier catalog & specfn.
6.Spring no / Range			3. A	
7.Spring To			4. B	
8. Air To			5. B12	
9. Signal Pr.			6. C	
10. Handwheel			7. C6	
11. On Air Failure	Stay Put		8. D	
12.Lockup Valve Type no			9. F	
13. Lockup Valve Set Pr.S			10. G	
			11.	



PART II A VENDOR CHECK LIST FOR CONTROL VALVE

ENQUIRY NO:

TAG NO:LO33A

SERVICE : LOFCV

UNITS: Flow-Liquid Cu M / hr, Steam-Kg / hr, Gas-NCu / hr, Pr-kg / cmSq (g), Temp-° C

IIA	BHEL SPECIFICATION	VENDOR CONFIRMATION	
O.FLOW DATA			
1. Line Fluid	LDO / HSD		
2. Flow Max	63.532		
3.Flow Min	3.165		
4. Max Flow In Pr	19.0		
5. Min Flow In Pr	23.0		
6. Max Flow Out Pr	16.0		
7.Min Flow Out Pr	4		
8. Actuator Sizing DP	28.5		
9. Temp Max	50		
10.Flow Temp	40		
11. Flow Sp Gravity	0.82		
12. Flow Viscosity CST	2.5 – 15.7		
13. Max / Min Flow Cv	38.86 1.36		
14. Plug Lifts %	80% @ maxflow / 20% min flow		
15. Vale Cv/Cf	Vendor to state		
A. VALVE BODY			
1. Make/Type No	Vendor to state		
2. Line Size mm	OD 88.9x5.49		
3. Body/port Size mm	NB : 80 Vendor to state		
4. Plug Travel mm	Vendor to state		
5. Body Style / Rating	ANSI 300 LBS NP		
6. Ends	3" Flange ANSI 300 LBS		
7. Port	Single / Double		
8. Guiding	Stem / Port (Vendor to state)		
9. Body Matl	Cast or forged carbon steel		
10. Trim No	Vendor to state		
11. Plug Matl	ANSI		
12. Steam Size/Matl	Vendor to state		
13.Seat Matl	Vendor to state		
14. Cage Matl,if any	Vendor to state		
15.Plug/Cage Style	= %		
16. Seat Leak Class	As per ANSI B 16.104 / FCI 70-2-V		
17. Plug pushdown to	Close		
18. Flow Tends to	Open		
19. Bonnet / packing	STD / Extended		
20. Drain plug	Vendor to state		
21. Noise Level	<85dBA @1m distance		
B. ACTUATOR ASSY			
1. Make/Type No	Vendor to state		
2. Style	Pneumatic Diaphragm		
3. Size/Volume	Vendor to state		
4. Diaphragm Matl	Vendor to state		
5. Port size	1/4" NPT (F)		
5.Spring No/Range/to	Vendor to state/Close		
6. Air to	Open		
7. Signal pr	Vendor to state		
8. On air Failure	Stay put		
9. Hand wheel	Provided		
10. Lockup Valve type No	Vendor to state		
11. Lockup Valve Set pr	Vendor to state		



PART II A VENDOR CHECK LIST FOR CONTROL VALVE

BHEL MATERIAL CODE: L183214220001001
SERVICE : LOFCV

ENQUIRY NO:
TAG NO:LO33A

UNITS: Flow-Liquid Cu M / hr, Steam-Kg / hr, Gas-NCu / hr, Pr-kg / cmSq (g), Temp-° C

IIA BHEL SPECIFICATION		VENDOR CONFIRMATION
C.POSITIONER	SMART POSITIONER as per Cl. II B	
1. Make / Type No	Vendor to state	
2. Cam Style,if any	Characterised	
3.Action	Direct / Reverse	
4. Bypass/Gauges	Required Three	
5.Supply Pr		
6. Signal In/Out	4-20 mA	
7. Airset Type No	Vendor to state	
D. POSITION TRANSMITTER	Inbuilt with smart positioner	
1.Make/Type No	Vendor to state	
2. Style	2 wire LVDT loop powered	
3.Input	24 V DC	
4. Load		
5. Output	4-20mA DC signal	
6. Cable Entry &Enclosure		
G.LIMIT SWITCHES	REQUIRED: 2 No	
1. Make/Type No	Vendor to state	
2. Mounted For	Max.Plug lift Min.Plug lift	
3. Contacts	DPDT (2 NO + 2 NC)	
4. Contact Rating	5A / 240 VAC 0.25A / 220 VDC	
5. Enclosure	NEMA 4 & 13	
6.Cable Entry	Vendor to State	
H. PNEUMATIC TERMINAL	To suit 8 mm OD x 1.65 t Tube	
I.SOLENOID VALVE	NOT REQUIRED	
1. Make / type no		
2. style		
3.Enclosure:		
4.Valve flow CV		
5.Cable entry		
J.TERMINAL BOX	Provided as per the sketch.	
1.Enclosure	NEMA 4 & 13, Dust tight & oil tight	
2.No of terminals		
K. OPR. & INSTRN. MANUALS	Min. of 6 copies, Vendor to confirm	
II B	SPECIAL CONTRACT REQUIREMENTS, IF ANY	
	Smart positioner to be supplied as per technical specification TDC:TCI: 317/Rev. 07 & E,C&I input for Control Valve accessories for Mahan project (Cust no. 1832-1833)(Cl: MAHAN: ECI:CV, Rev. 00)	

Bharat Heavy Electricals Limited
High Pressure Boiler Plant, Tiruchirappalli-620 014.

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

Specification No. TCI: 317

Page 01 of 04

Technical specification

of

SMART POSITIONER

Rev. No.	Date	Description	Prepared	Reviewed	Approved
			M. Muruga Prabu	M. Muruga Prabu	D. Kavitha
00 – 07	19-04-22	Initial Release	-sd-	-sd-	-sd-
08	15-07-24	Revised after revisit	-sd-	-sd-	-sd-

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 match with the requirement of the control valve/damper application, as indicated in the valve datasheet. 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, configuration & Diagnostics using Centralised HART management system or Universal HART calibrator through 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 Feedback Sensing shall be integral to the SMART positioner and output shall be provided in the form of 4-20 mA hardwired current signal to control system.
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	Diagnostic Features	Positioner shall be provided with diagnostic features for monitoring.
22	Test reports & Catalogues	1. Test Certificates as per Manufacturer's Standard. 2. SMART positioner catalogues & O&M manuals.

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

CI: MAHAN: ECI:CV, Rev. 01

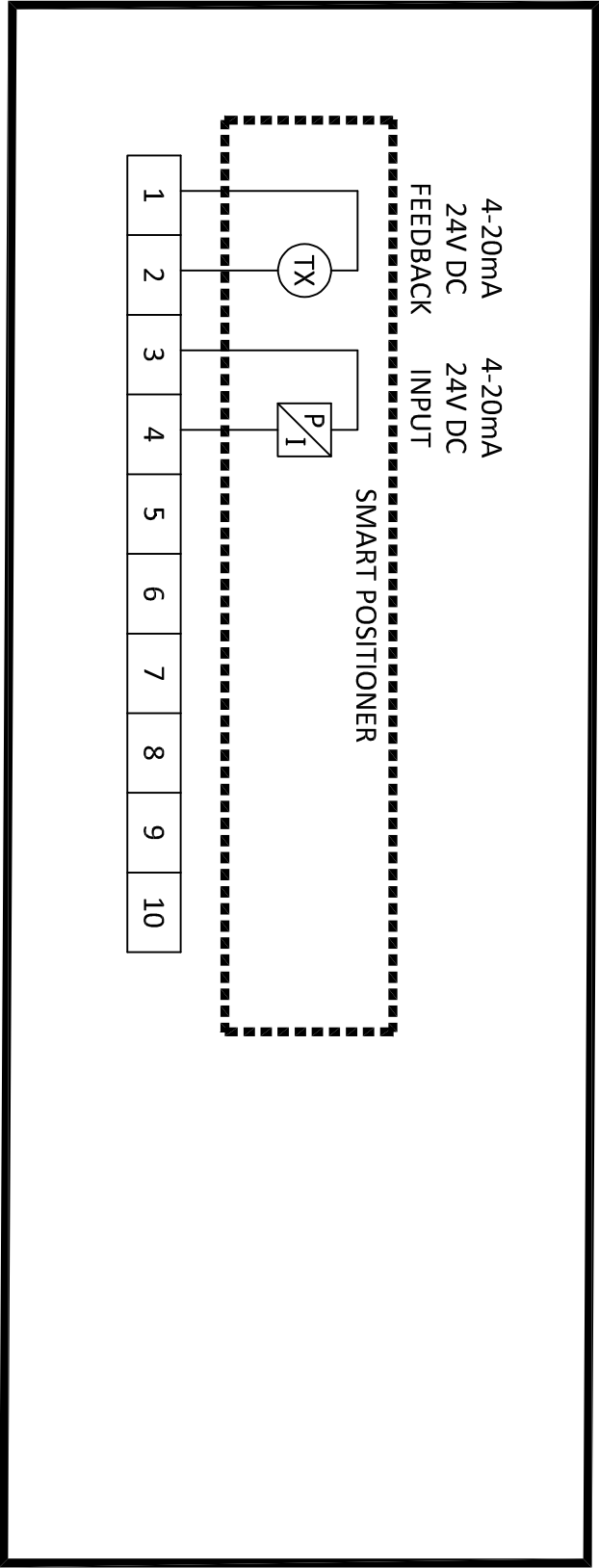
Project: MAHAN (2 X 800 MW)

Cust. No.: 1832 - 33

Sl. No	Description
1.	SMART positioner: - - Vendor to supply SMART positioner as per the requirements indicated in the Technical specification TCI:317/Rev. 08. Additional requirements: - - SMART positioner casings shall be dust tight, weather proof and corrosion resistant. - SMART positioner shall be compatible for Remote Calibration and Online diagnostics using HART management system. Necessary provisions shall be taken care of.
2.	Vendor can follow any one of the following makes of positioner SIEMENS, ABB, YOKOGAWA, FISHER, EMERSON, MTL, MOORE, FORBES MARSHALL. However, vendor should have proven track record for the selected make of positioner, supplied to regulating duty power cylinder applications.
3.	Integral Junction Box :- All the valve accessories shall be wired suitably and shall terminated in an integral junction box. The terminal blocks in the junction box shall be of cage clamp type suitable for 2.5 sq.mm. cable. Junction box shall meet the requirements of the protection class of IP - 65.
4.	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.
5.	Limit Switch Type & Contact Rating: - Limit switches shall be of high conductivity and non-corrosive type with either 1 No. of DPDT (2 NO + 2 NC contacts) or 2 Nos. of SPDT (2 NO + 2 NC contacts). Contact Rating: 5A at 240 V AC and 0.5 A at 220 V DC. <i>Applicability and Quantity of the limit switches shall be as indicated in the valve/actuator datasheet.</i>

Note to Vendor:

- A. Taking care of the above indicated technical requirements in full, vendor to submit signed & sealed copy of Sub-delivery enquiry deviation (SDED) format sent along with the purchase enquiry, without any deviations, quoting the document reference.
- B. Any deviation in the technical requirements has to be indicated only in the SDED format. Other than the SDED format, hidden deviations indicated elsewhere in the offer will not be considered.



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.

STANDARD										
Logo Bharat Heavy Electricals Ltd UNIT : HIGH PRESSURE BOILER PLANT TIRUCHIRAPALLI - 620014				DEPT.-C & I		NAME		SIGNATURE		DATE
BHEL DRAWING NO. : CI:PA:TB:WD				CODE - 392	DNR	M. MURUGA PRABU	Sd. / MMP	08-07-24		
				APPD	CHD	M. MURUGA PRABU	Sd. / MMP	08-07-24		
				CUSTOMER DRAWING NO. : -		Sd. / DK		08-07-24		
TITLE : TERMINAL BLOCK WIRING DRAWING OF PNEUMATIC ACTUATOR (REGULATING DUTY)								SCALE NTS	REV 00	



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

STANDARD QUALITY PLAN FOR CONTROL VALVES (FUEL OIL APPLICATION)

SQP:SD:07 Rev 00

Page: 1 of 4

Prepared By
Quality Assurance

VENKANNA RUPANI

R. Venkanna
14/09/2015

Reviewed by	Signature
Quality Assurance G. PANNEERSELVAM	 14/09/15
Engineering M. THANDAPANI	 14/09/15
Materials Management/BOI K. UDAYAKUMAR	 18/9/15
Quality Control R. DHARMAR	 15/09/15

Rev No	Date	Approved by	Signature
00	13/09/2015	AGM / QA & BE	 18/09/15

Record of Revisions

Rev No	Details of Revision	Remarks
00	Fresh Issue	

	MANUFACTURER'S NAME & ADDRESS: BHEL TIRUCHIRAPPALLI APPROVED SUPPLIERS	STANDARD QUALITY PLAN							QWI NO:SQP:SD:07 REV.NO.00 DATE: 18/09/2015 PAGE: 2 OF 4				
	PRODUCT: CONTROL VALVES – FUEL OIL APPLICATION (LFO/HFO/FLOW; TEMPERATURE; BURNER TRIP;DRAIN OIL ON/OFF)												
	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 and Bonnet	Chemical & Mech Properties, Heat treatment	B	TC Verification	1/Heat	1/Heat	BHEL approved datasheet/ ASTM Std	BHEL approved datasheet / ASTM Std	Test Certificate	√	P	V	V
		Surface quality*	B	Visual Examination	100%	100%	MSS SP 55	MSS SP 55	Test Certificate	√	P	V	V
		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	Test Certificate	√	P	V	V
		#Sub-Surface Soundness(MPI)	B	TC Verification	100%	100%	ASME Sec V/ ASTM E709	ASME B 16.34 Appendix II	Test Certificate	√	P	V	V
1.2	Trim(Plug, Seat ring & Stem)	Chemical & Mechanical Properties	B	TC Verification	1/Heat	1/Heat	BHEL approved datasheet / ASTM Std	BHEL approved datasheet / ASTM Std	Test Certificate	√	P	V	V
		Stem Internal Soundness(UT#)	B	TC Verification	100%	100%	ASME Sec V/ ASTM A 388	ASME B 16.34 Appendix IV	Test Certificate	√	P	V	V
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	Test Certificate / COC	√	P	V	V
1.4	Diaphragm	Surface Quality, Strength & %Elg, Hardness, *, Dimensions	B	Visual & Measurement	1/ Lot 100%	1/ Lot 100%	Manufacturer's Specification	Manufacturer's Specification	COC	√	P	V	V
1.5	Springs	Chemistry, Strength, Hardness, Endurance, Linearity & Dimensions	B	Chemical Analysis, Compression & Load test, Measurement, Cyclic Test, Measurement	1/ Lot	1/ Lot	Manufacturer's Specification	Manufacturer's Specification	COC	√	P	V	V
1.6	Pressure Gauges	Performance	B	Calibration	100%	100%	Manufacturer's Specification	Manufacturer's Specification	IR/COC	√	P	V	V

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; **(T)/(Ts):** Type test; **COC:** Certificate of compliance

		MANUFACTURER'S NAME & ADDRESS: BHEL TIRUCHIRAPPALLI APPROVED SUPPLIERS		STANDARD QUALITY PLAN							QWI NO:SQP:SD:07 REV.NO.00 DATE: 18/09/2015 PAGE: 3 OF 4			
PRODUCT: CONTROL VALVES – FUEL OIL APPLICATION (LFO/HFO/FLOW; TEMPERATURE; BURNER TRIP;DRAIN OIL ON/OFF)														
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	
1.7	Accessories: limit switch, ALR, junction box, positioner & transmitters, etc.	Make/rating/type; Degree of protection (as applicable)*. Also, type of coil	B	Verification	100%	100%	BHEL approved datasheet	BHEL approved datasheet	COC & Certificates*	√	P	V	V	*For electrical items, certificates by statutory bodies shall be furnished.
1.8	Solenoid valve, if applicable	Make/rating/type (AC/DC),type of coil (single or double)*	B	Verification	100%	100%	BHEL approved datasheet	BHEL approved datasheet	COC & Certificates*	√	P	V	V	
2.0 INPROCESS INSPECTION														
2.1	Welding Qualifications	Procedure	B	Document Review	100%	100%	ASME Sec IX	ASME Sec IX	PQR &WPS	√	P	V	V	
		Personnel #	B	Document Review	100%	100%	IBR/ASME Sec IX/AWS D1.1	IBR/ASME Sec IX/AWS D1.1	WPQ	√	P	V	V	
2.2	PWHT, if applicable	Time & Temp control	B	Review of HT Chart	100%	100%	WPS	WPS	HT Chart	√	P	V	V	
2.3	Hard faced Trims	Hardness	B	Measurement	On test samples only		BHEL approved datasheet / Manufacturer's Std	BHEL approved datasheet / Manufacturer's 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	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	
2.6	NDE on butt weld joints*	Weld Soundness	B	MPI/LPI	100%	100%	ASME E709/ ASME E165	ASME Sec VIII Div 1 Appd 6.4/8.4	Test Report	√	P	V	V	*if applicable
2.7	NDE on butt weld ends	Weld Soundness	B	MPI/LPI	100%	100%	ASME E709/ ASME E165	ASME Sec VIII Div 1 Appd 6.4/8.4	Test Report	√	P	V	V	
2.8	Body & Bonnet	Leak tightness & pressure resistance	A	Hydro Test	100%	-	ASME 16.34/ ISA 75.19	No Leak	Register/ Log	--	P	-	-	
3.0 FINAL INSPECTION & TESTING														
3.1	Tests on assembled valves	Leak tightness & pressure resistance (Body & Bonnet)	A	Hydro Test	100%	10%	ASME 16.34/ ISA 75.19	No leak	Test Report	√	P	W	V	Manufacturer's Test Certificate shall be submitted

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; **(T)/(Ts):** Type test, **COC:** Certificate of compliance

		MANUFACTURER'S NAME & ADDRESS: BHEL TIRUCHIRAPPALLI APPROVED SUPPLIERS		STANDARD QUALITY PLAN						QWI NO:SQP:SD:07 REV.NO.00 DATE: 18/09/2015 PAGE: 4 OF 4				
				PRODUCT: CONTROL VALVES – FUEL OIL APPLICATION (LFO/HFO/FLOW; TEMPERATURE; BURNER TRIP;DRAIN OIL ON/OFF)										
				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
1	2	3	4	5	M	C/N	7	8	9	D*	M	C	N	11
3.2	Performance Tests on Assembled valves fitted with Accessories	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%	BHEL approved datasheet	BHEL approved datasheet	Test Report	√	P	W	V	
3.5		Control valve flow Capacity# (Discharge Vs Opening)	A	Capacity Test (Cv test)	One/ Type	100%	BHEL approved datasheet /ISA 75.02	Full Capacity	Test Report#	√	P	V	V	#-Note 2
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	√	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.
4.0	PAINTING, PRESERVATION & PACKING													
4.1	Painting	Surface Prep, Primer & finish coats & Shade, DFT	B	Visual & Measurement	100%	10%	BHEL approved painting Scheme	BHEL approved painting Scheme	Test Report	√	P	V	V	
4.2	Identification	Marking /Name Plate & Tagging	B	Visual	100%	10%	BHEL Spec & PO	BHEL Spec & PO	Test Report	--	P	V	V	
4.3	Packing*	Water-proof packing & Stability	B	Verification	100%	10%	BHEL Spec & PO	BHEL Spec & PO	Packing List	√	P	V	-	*with site storage & handling instructions.
4.4	Spare Parts	Parts, Type, Qty, Dimensions, etc.	B	Visual & Measurement	100%	10%	BHEL approved datasheet & PO	BHEL approved datasheet & PO	IR/COC	√	P	V	-	

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

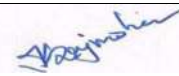
2. Type test witnessed by BHEL or done at FCRI shall be submitted for review & clearance by BHEL Engg (certificate valid for 5 years).

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; **(T)/(Ts):** Type test, **COC:** Certificate of compliance

	BTG & AUXILIARIES	OWNER: 552H-E-BTG-BOA-DM-S-V-0001
		CONTRACTOR: PL:C3-PS/1832
MAHAN ENERGEN LTD. (PHASE-II)	PAINTING SCHEDULE	Page 1 of 13
BHEL		

BTG & AUXILIARIES

	OWNER MAHAN ENERGEN LIMITED(MEL) 2x800 MW ULTRA SUPER CRITICAL THERMAL POWER PROJECT, MAHAN (PHASE-II), SINGRAULI, M.P.
	OWNER'S ENGINEER TATA CONSULTING ENGINEERS LIMITED
	BTG CONTRACTOR BHARAT HEAVY ELECTRICALS LTD. CUSTOMER NO: U8-1832/1833, UNIT – I & II
LOGO	SUB-CONTRACTOR / SUB-SUPPLIER Not Applicable

PLANT	HIGH PRESSURE BOILER PLANT, TIRUCHIRAPPALLI
DOCUMENT TITLE	PAINTING SCHEDULE
OWNER DOC. NO.	552H-E-BTG-BOA-DM-S-V-0001
CONTRACTOR / SUPPLIER DOC. NO.	PL:C3-PS/1832
PACKAGE DISCIPLINE	BTG & AUXILIARIES
PREPARED BY	K. Srinivasan 
REVIEWED BY	K. Raj Mohan 
APPROVED BY	A. Santha Kumari 

Sl. No.	PGMA / Description	Surface Preparation & Surface Profile	Primer coat		Intermediate Coat		Finish coat			Total DFT μm (min)
			Paint	No. of coats	Paint	No. of coats	Paint	No. of coats	Shade	
⁴ PS3 (Contd.)	Hot Air: 48-018, 022,116,202,204,207,208, 48-212,214,222,224, 262,264,267,662, 48-664,667; Flue Gas: 48-342,344,352,354,362,364,372, 48-382,384,386, 432,434,462,464,482,484,492, 48-494,496,498;	SSPC-SP3/ Power Tool Cleaning	Red Oxide Zinc Phosphate Primer (Alkyd Base) to IS 12744 DFT = 30 μm per coat	2	--	--	No paint	No paint	Red oxide	60
⁵ PS 9	<u>Components >95° C uninsulated other than components coming in gas path.</u> Temp: >95° C & <400° C 24-807,820,860,865,867; 42-200,300; Instrument tappings, doors: 48-200,915;	SSPC-SP3/ Power Tool Cleaning	Heat Resistant Aluminium Paint to IS 13183 Gr. II DFT 20 μm per coat	1	--	--	Heat Resistant Aluminium Paint to IS 13183 Gr. II DFT 20 μm per coat	1	Aluminium	40
⁶ PS 10	Components uninsulated other than components coming in gas path. (Temp: >400° C & <600° C) 09-003,004,005; 28-220; Components insulated (Temp: >400° C & <600° C) RH & SH headers 10-135,174,176,178,191,235,274,276,278,283, 10-284,285,291; 15-136, 178,236,278;	SSPC-SP3/ Power Tool Cleaning	Heat Resistant Aluminium Paint to IS 13183 Gr. I DFT 20 μm per coat	1	--	--	Heat Resistant Aluminium Paint to IS 13183 Gr. I DFT 20 μm per coat	1	Aluminium	40
⁷ PS2	<u>Loose tubes, SH, RH & Eco. coils</u> 11-074,078,374,378,406,467,469, 11-487,491,494,606,608,684,694,716,717,718, 11-767,768,769,787,791,916,917,918,967,968, 11-969,987,991;12-179,181,184,187,368, 12-403,405,514,515,524,544,554; 12-800,803,805,903,914,917,924,927,928,944,948, 12-954,968; 16-079,201,202,203,278,379; 19-092,402,804,814,824,853,884,914,924,984;	SSPC – SP2 or SSPC – SP3 Hand tool / Power tool cleaning	Red Oxide Zinc Phosphate Dip coat primer to PR: CHEM: 09 – 03 DFT=35 μm per coat	1*	--	--	No paint	No paint	Red Oxide	35

*-In lieu of dip painting, 2 coats of brush painting of Red oxide Zinc Phosphate primer to a coating thickness of 60 μ is also permitted in line with Sr.No.9.

Annexure B: Item Details: FURL OIL CONTROL & TRIP VALVE & Spares for MEL MAHAN STG II (2X800MW) UNIT-1 & 2, Raigarh STPP Phase-II Unit-1& Unit-2, APL RAIPUR U1 & U2 & MIRZAPUR MTEUPPL U1 & U2 projects

Sl No	PR No	PR Item	Package	Delivery Location	Material Code	Material Description	Long Description	QTY	UOM
1	137954160	10	Package A (MEL MAHAN)	FOR MEL MAHAN Project site	L183214220001001	LDO FLOW CONTROL VALVE NB80	LOFCV:TAG NO:LO33A; NB80 ANSI 300 LBS as per the enclosed Spec.no.TOS:MEL:1360/00.	1	NO
2	137954161	10	Package A (MEL MAHAN)	FOR MEL MAHAN Project site	L183214220001001	LDO FLOW CONTROL VALVE NB80	LOFCV:TAG NO:LO33A; NB80 ANSI 300 LBS as per the enclosed Spec.no.TOS:MEL:1360/00.	1	NO
3	137954334	10	Package A (MEL MAHAN)	FOR MEL MAHAN Project site	L183284298802001	ACTUATOR DIAPHRAGM FOR FO CONTROL VALVES	Actuator diaphragm suitable for control valves offered against BHEL material code L183214220001001. 1 SET means 50% of total quantity in each variant of actuator diaphragm required for replacement in the control valves supplied against above said BHEL material codes.	1	SET
4	137954334	20	Package A (MEL MAHAN)	FOR MEL MAHAN Project site	L183284298802002	GLAND PACKING FOR FO CONTROL VALVES	Gland packing suitable for control valves offered against BHEL material code L183214220001001. 1 SET means 25% of total quantity in each variant of gland packing required for replacement in the control valves supplied against above said BHEL material codes.	1	SET
5	137954335	10	Package A (MEL MAHAN)	FOR MEL MAHAN Project site	L183284298802001	ACTUATOR DIAPHRAGM FOR FO CONTROL VALVES	Actuator diaphragm suitable for control valves offered against BHEL material code L183214220001001. 1 SET means 50% of total quantity in each variant of actuator diaphragm required for replacement in the control valves supplied against above said BHEL material codes.	1	SET
6	137954335	20	Package A (MEL MAHAN)	FOR MEL MAHAN Project site	L183284298802002	GLAND PACKING FOR FO CONTROL VALVES	Gland packing suitable for control valves offered against BHEL material code L183214220001001. 1 SET means 25% of total quantity in each variant of gland packing required for replacement in the control valves supplied against above said BHEL material codes.	1	SET
7	137954336	10	Package B (MEL MAHAN)	FOR MEL MAHAN Project site	L183214220002001	LDO MAIN TRIP VALVE NB100	LDO MAIN TRIP VALVE AS PER THE ENCLOSED SPECIFICATION NO TOS:MEL:1350/00 TAG NO. LO30A;NB100.	1	NO
8	137954336	20	Package B (MEL MAHAN)	FOR MEL MAHAN Project site	L183214220002002	LIGHT OIL (3 WAY) RETURN TRIP VALVE NB80	LIGHT OIL (3 WAY) RETURN TRIP VALVE AS PER THE ENCLOSED SPECIFICATION NO TOS:MEL:1350/00 TAG NO. LO45A;NB80.	1	NO
9	137954336	30	Package B (MEL MAHAN)	FOR MEL MAHAN Project site	L183214220002003	BURNER TRIP VALVES- ATOMISING AIR NB25	Burner Trip valves _ Air , NB25 as per the enclosed Spec. no.TOS:MEL:1350:/Rev.00 (TAG NOS. A20A-A20H, A20J-A20N, A20P-R)	16	NO
10	137954336	40	Package B (MEL MAHAN)	FOR MEL MAHAN Project site	L183214220002004	BURNER TRIP VALVES- LFO NB25	Burner Tripvalves _ LFO , NB25 as per the enclosed Spec. no.TOS:MEL:1350:/Rev.00 (TAG NOS. LO40A-LO40H, LO40J-LO40N, LO40P-LO40R)	16	NO
11	137954336	50	Package B (MEL MAHAN)	FOR MEL MAHAN Project site	L183214220002005	BURNER TRIP VALVES- AIR SCAVENGING NB25	Burner Trip valves _ Scavenging air, NB 25 as per the enclosed Spec.no.TOS:MEL:1350:/Rev.00 (TAG NOS. A59A-A59H, A59J-A59N, A59P-A59R)	16	NO
12	137954336	60	Package B (MEL MAHAN)	FOR MEL MAHAN Project site	L183214220002006	LFO RETURN BYPASS VALVE NB80	LFO RETURN BYPASS VALVE -LORBV (NB80; TAG NO.LO80) AS PER TECHNICAL SPECIFICATION TOS:MEL:1350/REV.00	1	NO
13	137954337	10	Package B (MEL MAHAN)	FOR MEL MAHAN Project site	L183214220002001	LDO MAIN TRIP VALVE NB100	LDO MAIN TRIP VALVE AS PER THE ENCLOSED SPECIFICATION NO TOS:MEL:1350/00 TAG NO. LO30A;NB100.	1	NO
14	137954337	20	Package B (MEL MAHAN)	FOR MEL MAHAN Project site	L183214220002002	LIGHT OIL (3 WAY) RETURN TRIP VALVE NB80	LIGHT OIL (3 WAY) RETURN TRIP VALVE AS PER THE ENCLOSED SPECIFICATION NO TOS:MEL:1350/00 TAG NO. LO45A;NB80.	1	NO
15	137954337	30	Package B (MEL MAHAN)	FOR MEL MAHAN Project site	L183214220002003	BURNER TRIP VALVES- ATOMISING AIR NB25	Burner Trip valves _ Air , NB25 as per the enclosed Spec. no.TOS:MEL:1350:/Rev.00 (TAG NOS. A20A-A20H, A20J-A20N, A20P-R)	16	NO
16	137954337	40	Package B (MEL MAHAN)	FOR MEL MAHAN Project site	L183214220002004	BURNER TRIP VALVES- LFO NB25	Burner Tripvalves _ LFO , NB25 as per the enclosed Spec. no.TOS:MEL:1350:/Rev.00 (TAG NOS. LO40A-LO40H, LO40J-LO40N, LO40P-LO40R)	16	NO

Annexure B: Item Details: FURL OIL CONTROL & TRIP VALVE & Spares for MEL MAHAN STG II (2X800MW) UNIT-1 & 2, Raigarh STPP Phase-II Unit-1& Unit-2, APL RAIPUR U1 & U2 & MIRZAPUR MTEUPPL U1 & U2 projects

SI No	PR No	PR Item	Package	Delivery Location	Material Code	Material Description	Long Description	QTY	UOM
17	137954337	50	Package B (MEL MAHAN)	FOR MEL MAHAN Project site	L183214220002005	BURNER TRIP VALVES- AIR SCAVENGING NB25	Burner Trip valves _ Scavenging air, NB 25 as per the enclosed Spec.no.TOS:MEL:1350/Rev.00 (TAG NOS. A59A-A59H, A59J-A59N, A59P-A59R)	16	NO
18	137954337	60	Package B (MEL MAHAN)	FOR MEL MAHAN Project site	L183214220002006	LFO RETURN BYPASS VALVE NB80	LFO RETURN BYPASS VALVE -LORBY (NB80; TAG NO.L080) AS PER TECHNICAL SPECIFICATION TOS:MEL:1350/REV.00	1	NO
19	137954342	10	Package B (MEL MAHAN)	BHEL Trichy stores	L1832S4299703001	SOLENOID VALVES	This solenoid valve shall be exactly same as the solenoid valve of trip valves as offered for this project for PGMA 42-200 for check list no.02 for customer nos.1832 & 1833. One set means 02 Nos. for each type & rating for trip valves released for this project under material codes L183214220002001 to L183214220002006	1	SET
20	137954342	20	Package B (MEL MAHAN)	BHEL Trichy stores	L1832S4299703002	POSITION FEEDBACK LIMIT SWITCH	This limit switch shall be exactly same as the limit switch of trip valves as offered for this project for PGMA 42-200 for check list no.02 for customer nos.1832 & 1833. One set means 10 Nos. for each type & rating for trip valves released for this project under material codes L183214220002001 to L183214220002006	1	SET
21	137954342	30	Package B (MEL MAHAN)	BHEL Trichy stores	L1832S4299703003	AIR FILTER REGULATORS	This air filter regulator shall be exactly same as the air filter regulator of trip valves as offered for this project for PGMA 42-200 for check list no.02 for customer nos.1832 & 1833. One set means 5 % of each type / model/ rating for trip valves released for this project under material codes L183214220002001 to L183214220002006	1	SET
22	137954342	40	Package B (MEL MAHAN)	BHEL Trichy stores	L1832S4299703004	DIAPHRAGM	This diaphragm shall be exactly same as the diaphragm of actuator of trip valves as offered for this project for PGMA 42-200 for check list no.02 for customer nos.1832 & 1833. One set means 2(two) nos. for each type of actuator for trip valves released for this project under material codes L183214220002001 to L183214220002006	1	SET
23	137954342	50	Package B (MEL MAHAN)	BHEL Trichy stores	L1832S4299703005	GLAND PACKING	This gland packing shall be exactly same as the gland packing of of trip valves as offered for this project for PGMA 42-200 for check list no.02 for customer nos.1832 & 1833. One set means 1(one) set for each type of Trip Valve released for this project under material codes L183214220002001 to L183214220002006	1	SET
24	137954342	60	Package B (MEL MAHAN)	BHEL Trichy stores	L1832S4299703006	PLUG, SEAT, CAGE, STEM ETC.	This Plug, Seat, Cage, Stem etc. shall be exactly same as the Plug, Seat, Cage, Stem etc. of trip valves as offered for this project for PGMA 42-200 for check list no.02 for customer nos.1832 & 1833. One set means 1(one) set for each type of Trip Valve released for this project under material codes L183214220002001 to L183214220002006	1	SET
25	137954342	70	Package B (MEL MAHAN)	BHEL Trichy stores	L1832S4299703007	RETAINER RING, SEAL RING ETC.	This Retainer Ring, Seal Ring etc. shall be exactly same as the Retainer Ring, Seal Ring etc. of trip valves as offered for this project for PGMA 42-200 for check list no.02 for customer nos.1832 & 1833. One set means 1(one) set for each type of Trip Valve released for this project under material codes L183214220002001 to L183214220002006	1	SET
26	137954342	80	Package B (MEL MAHAN)	BHEL Trichy stores	L1832S4299703008	GASKET	This gasket shall be exactly same as the gasket of trip valves as offered for this project for PGMA 42-200 for check list no.02 for customer nos.1832 & 1833. One set means 2(two) sets for each type of Trip Valve released for this project under material codes L183214220002001 to L183214220002006	1	SET
27	137954342	90	Package B (MEL MAHAN)	BHEL Trichy stores	L1832S4299703009	SOLENOID COIL FOR PNEU TYPE ON/OFF VLV	This solenoid coil shall be exactly same as the solenoid valve coil of trip valves as offered for this project for PGMA 42-200 for check list no.02 for customer nos.1832 & 1833. One set means 05 Nos. for each type & rating of Trip Valve released for this project under material codes L183214220002001 to L183214220002006	1	SET
28	137954342	100	Package B (MEL MAHAN)	BHEL Trichy stores	L1832S4299703010	AIR LOCK RELAY	This air lock relay shall be exactly same as the air lock relay of trip valves as offered for this project for PGMA 42-200 for check list no.02 for customer nos.1832 & 1833. One set means 10 Nos. for each type of Trip Valve released for this project under material codes L183214220002001 to L183214220002006	1	SET
29	137954342	110	Package B (MEL MAHAN)	BHEL Trichy stores	L1832S4299703011	SIGNAL AIR BOOSTER UNIT	This signal air booster shall be exactly same as the signal air booster of trip valves as offered for this project for PGMA 42-200 for check list no.02 for customer nos.1832 & 1833. One set means 02 Nos. for each type & rating of Trip Valve released for this project under material codes L183214220002001 to L183214220002006	1	SET

Annexure B: Item Details: FURL OIL CONTROL & TRIP VALVE & Spares for MEL MAHAN STG II (2X800MW) UNIT-1 & 2, Raigarh STPP Phase-II Unit-1& Unit-2, APL RAIPUR U1 & U2 & MIRZAPUR MTEUPPL U1 & U2 projects

SI No	PR No	PR Item	Package	Delivery Location	Material Code	Material Description	Long Description	QTY	UOM
30	137954344	10	Package B (MEL MAHAN)	FOR MEL MAHAN Project site	L183284298801001	ACTUATOR DIAPHRAGM FOR FO TRIP VALVES	Actuator Diaphragm for Trip valves against BHEL Material Codes: L183214220002001, L183214220002002 & L183214220002006. 1 SET means 50% of total quantity in each variant of Actuator diaphragm required for replacement in the trip valves supplied against above said BHEL material codes.	1	SET
31	137954344	20	Package B (MEL MAHAN)	FOR MEL MAHAN Project site	L183284298801002	GLAND PACKING FOR FO TRIP VALVES	Gland Packing for Trip valves against BHEL Material Codes: L183214220002001, L183214220002002 & L183214220002006. 1 SET means 25% of total quantity in each variant of gland packing required for replacement in the trip valves supplied against above said BHEL material codes.	1	SET
32	137954344	30	Package B (MEL MAHAN)	FOR MEL MAHAN Project site	L183284298801003	ACTUATOR DIAPHRAGM FOR BURNER TRIP VALVE	Actuator Diaphragm for Burner Trip valves against BHEL Material Codes: L183214220002003 to L183214220002005. 1 SET means 15% of total quantity in each variant of Actuator diaphragm required for replacement in the burner trip valves supplied against above said BHEL material codes.	1	SET
33	137954344	40	Package B (MEL MAHAN)	FOR MEL MAHAN Project site	L183284298801004	GLAND PACKING FOR BURNER TRIP VALVES	Gland Packing for Burner Trip valves against BHEL Material Codes: L183214220002003 to L183214220002005. 1 SET means 15% of total quantity in each variant of gland packing required for replacement in the burner trip valves supplied against above said BHEL material codes.	1	SET
34	137954345	10	Package B (MEL MAHAN)	FOR MEL MAHAN Project site	L183284298801001	ACTUATOR DIAPHRAGM FOR FO TRIP VALVES	Actuator Diaphragm for Trip valves against BHEL Material Codes: L183214220002001, L183214220002002 & L183214220002006. 1 SET means 50% of total quantity in each variant of Actuator diaphragm required for replacement in the trip valves supplied against above said BHEL material codes.	1	SET
35	137954345	20	Package B (MEL MAHAN)	FOR MEL MAHAN Project site	L183284298801002	GLAND PACKING FOR FO TRIP VALVES	Gland Packing for Trip valves against BHEL Material Codes: L183214220002001, L183214220002002 & L183214220002006. 1 SET means 25% of total quantity in each variant of gland packing required for replacement in the trip valves supplied against above said BHEL material codes.	1	SET
36	137954345	30	Package B (MEL MAHAN)	FOR MEL MAHAN Project site	L183284298801003	ACTUATOR DIAPHRAGM FOR BURNER TRIP VALVE	Actuator Diaphragm for Burner Trip valves against BHEL Material Codes: L183214220002003 to L183214220002005. 1 SET means 15% of total quantity in each variant of Actuator diaphragm required for replacement in the burner trip valves supplied against above said BHEL material codes.	1	SET
37	137954345	40	Package B (MEL MAHAN)	FOR MEL MAHAN Project site	L183284298801004	GLAND PACKING FOR BURNER TRIP VALVES	Gland Packing for Burner Trip valves against BHEL Material Codes: L183214220002003 to L183214220002005. 1 SET means 15% of total quantity in each variant of gland packing required for replacement in the burner trip valves supplied against above said BHEL material codes.	1	SET
38	137954356	10	Package A (MEL MAHAN)	BHEL Trichy stores	L183254299702001	VALVE TRIM	This Valve trim (including cage, plug, stem, seat rings, guide bushings etc.) shall be exactly same as the valve trim of Control Valve as offered for this project for PGMA 42-200 for check list no.01 for customer nos.1832 & 1833. One set means 1 set for each type of control valve released for this project under material code L183214220001001	1	SET
39	137954356	20	Package A (MEL MAHAN)	BHEL Trichy stores	L183254299702002	ACTUATOR ASSEMBLY	This pneumatic actuator assembly shall be exactly same as the pneumatic actuator assembly of Control Valve as offered for this project for PGMA 42-200 for check list no.01 for customer nos.1832 & 1833. One set means 10 % of each type / model/ rating of pneumatic actuator assembly of control valve released for this project under material code L183214220001001	1	SET

Annexure B: Item Details: FURL OIL CONTROL & TRIP VALVE & Spares for MEL MAHAN STG II (2X800MW) UNIT-1 & 2, Raigarh STPP Phase-II Unit-1& Unit-2, APL RAIPUR U1 & U2 & MIRZAPUR MTEUPPL U1 & U2 projects

SI No	PR No	PR Item	Package	Delivery Location	Material Code	Material Description	Long Description	QTY	UOM
40	137954356	30	Package A (MEL MAHAN)	BHEL Trichy stores	L1832S4299702003	DIAPHR,'O' RINGS SEAL,GL PACKIN,GASKET	This diaphragm, 'O' rings seal, gland packing, gaskets etc., shall be exactly same as diaphragm, 'O' rings seal, gland packing, gaskets etc., of Control Valve as offered for this project for PGMA 42-200 for check list no.01 for customer nos.1832 & 1833. One set means 10 % of each type / model/ rating of control valve released for this project under material code L183214220001001. Diaphragms (10% or 02 Nos which ever is more).	1	SET
41	137954356	40	Package A (MEL MAHAN)	BHEL Trichy stores	L1832S4299702004	AIR FILTER REGULATOR	This pneumatic air filter regulator shall be exactly same as the pneumatic air filter regulator of Control Valve as offered for this project for PGMA 42-200 for check list no.01 for customer nos.1832 & 1833. One set means 5 % of each type / model/ rating of air filter regulator of control valve released for this project under material code L183214220001001	1	SET
42	137954356	50	Package A (MEL MAHAN)	BHEL Trichy stores	L1832S4299702005	POSITIONER UNIT	This positioner unit shall be exactly same as the positioner unit of Control Valve as offered for this project for PGMA 42-200 for check list no.01 for customer nos.1832 & 1833. One set means 10 % of each type (If position feedback unit is separate, 10% of each type to be considered) of positioner unit of control valve released for this project under material code L183214220001001	1	SET
43	137954356	60	Package A (MEL MAHAN)	BHEL Trichy stores	L1832S4299702006	AIR LOCK RELAY	This air lock relay shall be exactly same as the air lock relay of the control Valve as offered for this project for PGMA 42-200 for check list no.01 for customer nos.1832 & 1833. One set means 10 Nos each type of air lock relay of control valve released for this project under material code L183214220001001	1	SET
44	137954356	70	Package A (MEL MAHAN)	BHEL Trichy stores	L1832S4299702007	SIGNAL AIR BOOSTER UNIT	This signal air booster unit shall be exactly same as the signal air booster unit of the control Valve as offered for this project for PGMA 42-200 for check list no.01 for customer nos.1832 & 1833. One set means 02 Nos each type of signal air booster unit of control valve released for this project under material code L183214220001001	1	SET
45	137954356	80	Package A (MEL MAHAN)	BHEL Trichy stores	L1832S4299702008	COMMUNICATION MODULE	This communication module shall be exactly same as the communication module of the control Valve as offered for this project for PGMA 42-200 for check list no.01 for customer nos.1832 & 1833. One set means 01 No communication module of control valve released for this project under material code L183214220001001	1	NO
46	137954356	90	Package A (MEL MAHAN)	BHEL Trichy stores	L1832S4299702009	HART INTERFACE MODULE	This hart interface module shall be exactly same as the hart interface module of the control Valve as offered for this project for PGMA 42-200 for check list no.01 for customer nos.1832 & 1833. One set means 10% of total nos. used in the system or minimum 1(one) no. whichever is more of control valve released for this project under material code L183214220001001	1	SET
47	137954356	100	Package A (MEL MAHAN)	BHEL Trichy stores	L1832S4299702010	POWER SUPPLY MODULE	This power supply module shall be exactly same as the power supply module of the control Valve as offered for this project for PGMA 42-200 for check list no.01 for customer nos.1832 & 1833. One set means 01 no of power supply module of control valve released for this project under material code L183214220001001	1	NO
48	137954356	110	Package A (MEL MAHAN)	BHEL Trichy stores	L1832S4299702011	ANY OTHER CRITICAL SPARE	this is any other critical spare of the hart management system of the control Valve as offered for this project for PGMA 42-200 for check list no.01 for customer nos.1832 & 1833. One set means 1 (One) No. of each type & model used in the system of control valve released for this project under material code L183214220001001	1	NO
49	137954356	120	Package A (MEL MAHAN)	BHEL Trichy stores	L1832S4299702012	POSITION FEEDBACK LIMIT SWITCH	This position feedback limit switch shall be exactly same as the poistion feedback limit switch of Control Valve as offered for this project for PGMA 42-200 for check list no.01 for customer nos.1832 & 1833. One set means 10 Nos. for each type & rating of control valve released for this project under material code L183214220001001	1	SET
50	137954332	10	Package C (Raigarh STPP)	FOR Raigarh STPP Project site	L184284298802001	ACTUATOR DIAPHRAGM FOR FO CONTROL VALVES	Actuator diaphragm suitable for control valves offered against BHEL material code L183214220001001. 1 SET means 50% of total quantity in each variant of actuator diaphragm required for replacement in the control valves supplied against above said BHEL material codes.	1	SET

Annexure B: Item Details: FURL OIL CONTROL & TRIP VALVE & Spares for MEL MAHAN STG II (2X800MW) UNIT-1 & 2, Raigarh STPP Phase-II Unit-1& Unit-2, APL RAIPUR U1 & U2 & MIRZAPUR MTEUPPL U1 & U2 projects

SI No	PR No	PR Item	Package	Delivery Location	Material Code	Material Description	Long Description	QTY	UOM
51	137954332	20	Package C (Raigarh STPP)	FOR Raigarh STPP Project site	L184284298802002	GLAND PACKING FOR FO CONTROL VALVES	Gland packing suitable for control valves offered against BHEL material code L183214220001001. 1 SET means 25% of total quantity in each variant of gland packing required for replacement in the control valves supplied against above said BHEL material codes.	1	SET
52	137954333	10	Package C (Raigarh STPP)	FOR Raigarh STPP Project site	L184284298802001	ACTUATOR DIAPHRAGM FOR FO CONTROL VALVES	Actuator diaphragm suitable for control valves offered against BHEL material code L183214220001001. 1 SET means 50% of total quantity in each variant of actuator diaphragm required for replacement in the control valves supplied against above said BHEL material codes.	1	SET
53	137954333	20	Package C (Raigarh STPP)	FOR Raigarh STPP Project site	L184284298802002	GLAND PACKING FOR FO CONTROL VALVES	Gland packing suitable for control valves offered against BHEL material code L183214220001001. 1 SET means 25% of total quantity in each variant of gland packing required for replacement in the control valves supplied against above said BHEL material codes.	1	SET
54	137954338	10	Package C (Raigarh STPP)	FOR Raigarh STPP Project site	L184214220001001	LDO FLOW CONTROL VALVE NB80	LOFCV:TAG NO:LO33A; NB80 ANSI 300 LBS as per the enclosed Spec.no.TOS:MEL:1360/00.	1	NO
55	137954339	10	Package C (Raigarh STPP)	FOR Raigarh STPP Project site	L184214220001001	LDO FLOW CONTROL VALVE NB80	LOFCV:TAG NO:LO33A; NB80 ANSI 300 LBS as per the enclosed Spec.no.TOS:MEL:1360/00.	1	NO
56	137954340	10	Package D (Raigarh STPP)	FOR Raigarh STPP Project site	L184284298801001	ACTUATOR DIAPHRAGM FOR FO TRIP VALVES	Actuator Diaphragm for Trip valves against BHEL Material Codes: L184214220002001, L184214220002002 & L184214220002006. 1 SET means 50% of total quantity in each variant of Actuator diaphragm required for replacement in the trip valves supplied against above said BHEL material codes.	1	SET
57	137954340	20	Package D (Raigarh STPP)	FOR Raigarh STPP Project site	L184284298801002	GLAND PACKING FOR FO TRIP VALVES	Gland Packing for Trip valves against BHEL Material Codes: L184214220002001, L184214220002002 & L184214220002006. 1 SET means 25% of total quantity in each variant of gland packing required for replacement in the trip valves supplied against above said BHEL material codes.	1	SET
58	137954340	30	Package D (Raigarh STPP)	FOR Raigarh STPP Project site	L184284298801003	ACTUATOR DIAPHRAGM FOR BURNER TRIP VALVE	Actuator Diaphragm for Burner Trip valves against BHEL Material Codes: L184214220002003 to L184214220002005. 1 SET means 15% of total quantity in each variant of Actuator diaphragm required for replacement in the burner trip valves supplied against above said BHEL material codes.	1	SET
59	137954340	40	Package D (Raigarh STPP)	FOR Raigarh STPP Project site	L184284298801004	GLAND PACKING FOR BURNER TRIP VALVES	Gland Packing for Burner Trip valves against BHEL Material Codes: L184214220002003 to L184214220002005. 1 SET means 15% of total quantity in each variant of gland packing required for replacement in the burner trip valves supplied against above said BHEL material codes.	1	SET
60	137954341	10	Package D (Raigarh STPP)	FOR Raigarh STPP Project site	L184284298801001	ACTUATOR DIAPHRAGM FOR FO TRIP VALVES	Actuator Diaphragm for Trip valves against BHEL Material Codes: L184214220002001, L184214220002002 & L184214220002006. 1 SET means 50% of total quantity in each variant of Actuator diaphragm required for replacement in the trip valves supplied against above said BHEL material codes.	1	SET
61	137954341	20	Package D (Raigarh STPP)	FOR Raigarh STPP Project site	L184284298801002	GLAND PACKING FOR FO TRIP VALVES	Gland Packing for Trip valves against BHEL Material Codes: L184214220002001, L184214220002002 & L184214220002006. 1 SET means 25% of total quantity in each variant of gland packing required for replacement in the trip valves supplied against above said BHEL material codes.	1	SET

Annexure B: Item Details: FURL OIL CONTROL & TRIP VALVE & Spares for MEL MAHAN STG II (2X800MW) UNIT-1 & 2, Raigarh STPP Phase-II Unit-1& Unit-2, APL RAIPUR U1 & U2 & MIRZAPUR MTEUPPL U1 & U2 projects

SI No	PR No	PR Item	Package	Delivery Location	Material Code	Material Description	Long Description	QTY	UOM
62	137954341	30	Package D (Raigarh STPP)	FOR Raigarh STPP Project site	L184284298801003	ACTUATOR DIAPHRAGM FOR BURNER TRIP VALVE	Actuator Diaphragm for Burner Trip valves against BHEL Material Codes: L184214220002003 to L184214220002005. 1 SET means 15% of total quantity in each variant of Actuator diaphragm required for replacement in the burner trip valves supplied against above said BHEL material codes.	1	SET
63	137954341	40	Package D (Raigarh STPP)	FOR Raigarh STPP Project site	L184284298801004	GLAND PACKING FOR BURNER TRIP VALVES	Gland Packing for Burner Trip valves against BHEL Material Codes: L184214220002003 to L184214220002005. 1 SET means 15% of total quantity in each variant of gland packing required for replacement in the burner trip valves supplied against above said BHEL material codes.	1	SET
64	137954343	10	Package D (Raigarh STPP)	BHEL Trichy stores	L1842S4299703001	SOLENOID VALVES	This solenoid valve shall be exactly same as the solenoid valve of trip valves as offered for this project for PGMA 42-200 for check list no.02 for customer nos.1842 & 1843. One set means 02 Nos. for each type & rating for trip valves released for this project under material codes L184214220002001 to L184214220002006	1	SET
65	137954343	20	Package D (Raigarh STPP)	BHEL Trichy stores	L1842S4299703002	POSITION FEEDBACK LIMIT SWITCH	This limit switch shall be exactly same as the limit switch of trip valves as offered for this project for PGMA 42-200 for check list no.02 for customer nos.1842 & 1843. One set means 10 Nos. for each type & rating for trip valves released for this project under material codes L184214220002001 to L184214220002006	1	SET
66	137954343	30	Package D (Raigarh STPP)	BHEL Trichy stores	L1842S4299703003	AIR FILTER REGULATORS	This air filter regulator shall be exactly same as the air filter regulator of trip valves as offered for this project for PGMA 42-200 for check list no.02 for customer nos.1842 & 1843. One set means 5 % of each type / model/ rating for trip valves released for this project under material codes L184214220002001 to L184214220002006	1	SET
67	137954343	40	Package D (Raigarh STPP)	BHEL Trichy stores	L1842S4299703004	DIAPHRAGM	This diaphragm shall be exactly same as the diaphragm of actuator of trip valves as offered for this project for PGMA 42-200 for check list no.02 for customer nos.1842 & 1843. One set means 2(two) nos. for each type of actuator for trip valves released for this project under material codes L184214220002001 to L184214220002006	1	SET
68	137954343	50	Package D (Raigarh STPP)	BHEL Trichy stores	L1842S4299703005	GLAND PACKING	This gland packing shall be exactly same as the gland packing of trip valves as offered for this project for PGMA 42-200 for check list no.02 for customer nos.1842 & 1843. One set means 1(one) set for each type of Trip Valve released for this project under material codes L184214220002001 to L184214220002006	1	SET
69	137954343	60	Package D (Raigarh STPP)	BHEL Trichy stores	L1842S4299703006	PLUG, SEAT, CAGE, STEM ETC.	This Plug, Seat, Cage, Stem etc. shall be exactly same as the Plug, Seat, Cage, Stem etc. of trip valves as offered for this project for PGMA 42-200 for check list no.02 for customer nos.1842 & 1843. One set means 1(one) set for each type of Trip Valve released for this project under material codes L184214220002001 to L184214220002006	1	SET
70	137954343	70	Package D (Raigarh STPP)	BHEL Trichy stores	L1842S4299703007	RETAINER RING, SEAL RING ETC.	This Retainer Ring, Seal Ring etc. shall be exactly same as the Retainer Ring, Seal Ring etc. of trip valves as offered for this project for PGMA 42-200 for check list no.02 for customer nos.1842 & 1843. One set means 1(one) set for each type of Trip Valve released for this project under material codes L184214220002001 to L184214220002006	1	SET
71	137954343	80	Package D (Raigarh STPP)	BHEL Trichy stores	L1842S4299703008	GASKET	This gasket shall be exactly same as the gasket of trip valves as offered for this project for PGMA 42-200 for check list no.02 for customer nos.1842 & 1843. One set means 2(two) sets for each type of Trip Valve released for this project under material codes L184214220002001 to L184214220002006	1	SET
72	137954343	90	Package D (Raigarh STPP)	BHEL Trichy stores	L1842S4299703009	SOLENOID COIL FOR PNEU TYPE ON/OFF VLV	This solenoid coil shall be exactly same as the solenoid valve coil of trip valves as offered for this project for PGMA 42-200 for check list no.02 for customer nos.1842 & 1843. One set means 05 Nos. for each type & rating of Trip Valve released for this project under material codes L184214220002001 to L184214220002006	1	SET
73	137954343	100	Package D (Raigarh STPP)	BHEL Trichy stores	L1842S4299703010	AIR LOCK RELAY	This air lock relay shall be exactly same as the air lock relay of trip valves as offered for this project for PGMA 42-200 for check list no.02 for customer nos.1842 & 1843. One set means 10 Nos. for each type of Trip Valve released for this project under material codes L184214220002001 to L184214220002006	1	SET

Annexure B: Item Details: FURL OIL CONTROL & TRIP VALVE & Spares for MEL MAHAN STG II (2X800MW) UNIT-1 & 2, Raigarh STPP Phase-II Unit-1& Unit-2, APL RAIPUR U1 & U2 & MIRZAPUR MTEUPPL U1 & U2 projects

SI No	PR No	PR Item	Package	Delivery Location	Material Code	Material Description	Long Description	QTY	UOM
74	137954343	110	Package D (Raigarh STPP)	BHEL Trichy stores	L184254299703011	SIGNAL AIR BOOSTER UNIT	This signal air booster shall be exactly same as the signal air booster of trip valves as offered for this project for PGMA 42-200 for check list no.02 for customer nos.1842 & 1843. One set means 02 Nos. for each type & rating of Trip Valve released for this project under material codes L184214220002001 to L184214220002006	1	SET
75	137954346	10	Package D (Raigarh STPP)	FOR Raigarh STPP Project site	L184214220002001	LDO MAIN TRIP VALVE NB100	LDO MAIN TRIP VALVE AS PER THE ENCLOSED SPECIFICATION NO TOS:MEL:1350/00 TAG NO. LO30A;NB100.	1	NO
76	137954346	20	Package D (Raigarh STPP)	FOR Raigarh STPP Project site	L184214220002002	LIGHT OIL (3 WAY) RETURN TRIP VALVE NB80	LIGHT OIL (3 WAY) RETURN TRIP VALVE AS PER THE ENCLOSED SPECIFICATION NO TOS:MEL:1350/00 TAG NO. LO45A;NB80.	1	NO
77	137954346	30	Package D (Raigarh STPP)	FOR Raigarh STPP Project site	L184214220002003	BURNER TRIP VALVES- ATOMISING AIR NB25	Burner Trip valves _ Air , NB25 as per the enclosed Spec. no.TOS:MEL:1350;/Rev.00 (TAG NOS. A20A-A20H, A20J-A20N, A20P-R)	16	NO
78	137954346	40	Package D (Raigarh STPP)	FOR Raigarh STPP Project site	L184214220002004	BURNER TRIP VALVES- LFO NB25	Burner Tripvalves _ LFO , NB25 as per the enclosed Spec. no.TOS:MEL:1350;/Rev.00 (TAG NOS. LO40A-LO40H, LO40J-LO40N, LO40P-LO40R)	16	NO
79	137954346	50	Package D (Raigarh STPP)	FOR Raigarh STPP Project site	L184214220002005	BURNER TRIP VALVES- AIR SCAVENGING NB25	Burner Trip valves _ Scavenging air, NB 25 as per the enclosed Spec.no.TOS:MEL:1350;/Rev.00 (TAG NOS. A59A-A59H, A59J-A59N, A59P-A59R)	16	NO
80	137954346	60	Package D (Raigarh STPP)	FOR Raigarh STPP Project site	L184214220002006	LFO RETURN BYPASS VALVE NB80	LFO RETURN BYPASS VALVE -LORBV (NB80; TAG NO.LO80) AS PER TECHNICAL SPECIFICATION TOS:MEL:1350/REV.00	1	NO
81	137954347	10	Package D (Raigarh STPP)	FOR Raigarh STPP Project site	L184214220002001	LDO MAIN TRIP VALVE NB100	LDO MAIN TRIP VALVE AS PER THE ENCLOSED SPECIFICATION NO TOS:MEL:1350/00 TAG NO. LO30A;NB100.	1	NO
82	137954347	20	Package D (Raigarh STPP)	FOR Raigarh STPP Project site	L184214220002002	LIGHT OIL (3 WAY) RETURN TRIP VALVE NB80	LIGHT OIL (3 WAY) RETURN TRIP VALVE AS PER THE ENCLOSED SPECIFICATION NO TOS:MEL:1350/00 TAG NO. LO45A;NB80.	1	NO
83	137954347	30	Package D (Raigarh STPP)	FOR Raigarh STPP Project site	L184214220002003	BURNER TRIP VALVES- ATOMISING AIR NB25	Burner Trip valves _ Air , NB25 as per the enclosed Spec. no.TOS:MEL:1350;/Rev.00 (TAG NOS. A20A-A20H, A20J-A20N, A20P-R)	16	NO
84	137954347	40	Package D (Raigarh STPP)	FOR Raigarh STPP Project site	L184214220002004	BURNER TRIP VALVES- LFO NB25	Burner Tripvalves _ LFO , NB25 as per the enclosed Spec. no.TOS:MEL:1350;/Rev.00 (TAG NOS. LO40A-LO40H, LO40J-LO40N, LO40P-LO40R)	16	NO
85	137954347	50	Package D (Raigarh STPP)	FOR Raigarh STPP Project site	L184214220002005	BURNER TRIP VALVES- AIR SCAVENGING NB25	Burner Trip valves _ Scavenging air, NB 25 as per the enclosed Spec.no.TOS:MEL:1350;/Rev.00 (TAG NOS. A59A-A59H, A59J-A59N, A59P-A59R)	16	NO
86	137954347	60	Package D (Raigarh STPP)	FOR Raigarh STPP Project site	L184214220002006	LFO RETURN BYPASS VALVE NB80	LFO RETURN BYPASS VALVE -LORBV (NB80; TAG NO.LO80) AS PER TECHNICAL SPECIFICATION TOS:MEL:1350/REV.00	1	NO
87	137954357	10	Package C (Raigarh STPP)	BHEL Trichy stores	L184254299702001	VALVE TRIM	This Valve trim (including cage,plug, stem, seat rings, guide bushings etc.) shall be exactly same as the valve trim of Control Valve as offered for this project for PGMA 42-200 for check list no.01 for customer nos.1842 & 1843. One set means 1 set for each type of control valve released for this project under material code L184214220001001	1	SET
88	137954357	20	Package C (Raigarh STPP)	BHEL Trichy stores	L184254299702002	ACTUATOR ASSEMBLY	This pneumatic actuator assembly shall be exactly same as the pneumatic actuator assembly of Control Valve as offered for this project for PGMA 42-200 for check list no.01 for customer nos.1842 & 1843. One set means 10 % of each type / model/ rating of pneumatic actuator assembly of control valve released for this project under material code L184214220001001	1	SET
89	137954357	30	Package C (Raigarh STPP)	BHEL Trichy stores	L184254299702003	DIAPHR,'O' RINGS SEAL,GL PACKIN,GASKET	This diaphragm, 'O' rings seal, gland packing, gaskets etc., shall be exactly same as diaphragm, 'O' rings seal, gland packing, gaskets etc., of Control Valve as offered for this project for PGMA 42-200 for check list no.01 for customer nos.1842 & 1843. One set means 10 % of each type / model/ rating of control valve released for this project under material code L184214220001001. Diaphragms (10% or 02 Nos which ever is more).	1	SET

Annexure B: Item Details: FURL OIL CONTROL & TRIP VALVE & Spares for MEL MAHAN STG II (2X800MW) UNIT-1 & 2, Raigarh STPP Phase-II Unit-1& Unit-2, APL RAIPUR U1 & U2 & MIRZAPUR MTEUPPL U1 & U2 projects

SI No	PR No	PR Item	Package	Delivery Location	Material Code	Material Description	Long Description	QTY	UOM
90	137954357	40	Package C (Raigarh STPP)	BHEL Trichy stores	L1842S4299702004	AIR FILTER REGULATOR	This pneumatic air filter regulator shall be exactly same as the pneumatic air filter regulator of Control Valve as offered for this project for PGMA 42-200 for check list no.01 for customer nos.1842 & 1843. One set means 5 % of each type / model/ rating of air filter regulator of control valve released for this project under material code L184214220001001	1	SET
91	137954357	50	Package C (Raigarh STPP)	BHEL Trichy stores	L1842S4299702005	POSITIONER UNIT	This positioner unit shall be exactly same as the positioner unit of Control Valve as offered for this project for PGMA 42-200 for check list no.01 for customer nos.1842 & 1843. One set means 10 % of each type (If position feedback unit is separate, 10% of each type to be considered) of positioner unit of control valve released for this project under material code L184214220001001	1	SET
92	137954357	60	Package C (Raigarh STPP)	BHEL Trichy stores	L1842S4299702006	AIR LOCK RELAY	This air lock relay shall be exactly same as the air lock relay of the control Valve as offered for this project for PGMA 42-200 for check list no.01 for customer nos.1842 & 1843. One set means 10 Nos each type of air lock relay of control valve released for this project under material code L184214220001001	1	SET
93	137954357	70	Package C (Raigarh STPP)	BHEL Trichy stores	L1842S4299702007	SIGNAL AIR BOOSTER UNIT	This signal air booster unit shall be exactly same as the signal air booster unit of the control Valve as offered for this project for PGMA 42-200 for check list no.01 for customer nos.1842 & 1843. One set means 02 Nos each type of signal air booster unit of control valve released for this project under material code L184214220001001	1	SET
94	137954357	80	Package C (Raigarh STPP)	BHEL Trichy stores	L1842S4299702008	COMMUNICATION MODULE	This communication module shall be exactly same as the communication module of the control Valve as offered for this project for PGMA 42-200 for check list no.01 for customer nos.1842 & 1843. One set means 01 No communication module of control valve released for this project under material code L184214220001001	1	NO
95	137954357	90	Package C (Raigarh STPP)	BHEL Trichy stores	L1842S4299702009	HART INTERFACE MODULE	This hart interface module shall be exactly same as the hart interface module of the control Valve as offered for this project for PGMA 42-200 for check list no.01 for customer nos.1842 & 1843. One set means 10% of total nos. used in the system or minimum 1(one) no. whichever is more of control valve released for this project under material code L184214220001001	1	SET
96	137954357	100	Package C (Raigarh STPP)	BHEL Trichy stores	L1842S4299702010	POWER SUPPLY MODULE	This power supply module shall be exactly same as the power supply module of the control Valve as offered for this project for PGMA 42-200 for check list no.01 for customer nos.1842 & 1843. One set means 01 no of power supply module of control valve released for this project under material code L184214220001001	1	NO
97	137954357	110	Package C (Raigarh STPP)	BHEL Trichy stores	L1842S4299702011	ANY OTHER CRITICAL SPARE	this is any other critical spare of the hart management system of the control Valve as offered for this project for PGMA 42-200 for check list no.01 for customer nos.1842 & 1843. One set means 1 (One) No. of each type & model used in the system of control valve released for this project under material code L184214220001001	1	NO
98	137954357	120	Package C (Raigarh STPP)	BHEL Trichy stores	L1842S4299702012	POSITION FEEDBACK LIMIT SWITCH	This position feedback limit switch shall be exactly same as the position feedback limit switch of Control Valve as offered for this project for PGMA 42-200 for check list no.01 for customer nos.1842 & 1843. One set means 10 Nos. for each type & rating of control valve released for this project under material code L184214220001001	1	SET
99	138981545	10	Package E (APL RAIPUR)	FOR APL RAIPUR Project site	L184414220001001	LDO FLOW CONTROL VALVE NB80	LOFCV:TAG NO:LO33A; NB80 ANSI 300 LBS as per the enclosed Spec.no.TOS:MEL:1360/00.	1	NO
100	138981671	10	Package E (APL RAIPUR)	FOR APL RAIPUR Project site	L184414220001001	LDO FLOW CONTROL VALVE NB80	LOFCV:TAG NO:LO33A; NB80 ANSI 300 LBS as per the enclosed Spec.no.TOS:MEL:1360/00.	1	NO
101	138981675	10	Package F (APL RAIPUR)	FOR APL RAIPUR Project site	L184414220002001	LDO MAIN TRIP VALVE NB100	LDO MAIN TRIP VALVE AS PER THE ENCLOSED SPECIFICATION NO TOS:MEL:1350/00 TAG NO. LO30A;NB100.	1	NO
102	138981675	20	Package F (APL RAIPUR)	FOR APL RAIPUR Project site	L184414220002002	LIGHT OIL (3 WAY) RETURN TRIP VALVE NB80	LIGHT OIL (3 WAY) RETURN TRIP VALVE AS PER THE ENCLOSED SPECIFICATION NO TOS:MEL:1350/00 TAG NO. LO45A;NB80.	1	NO
103	138981675	30	Package F (APL RAIPUR)	FOR APL RAIPUR Project site	L184414220002003	BURNER TRIP VALVES- ATOMISING AIR NB25	Burner Trip valves _ Air , NB25 as per the enclosed Spec. no.TOS:MEL:1350;/Rev.00 (TAG NOS. A20A-A20H, A20J-A20N, A20P-R)	16	NO

Annexure B: Item Details: FURL OIL CONTROL & TRIP VALVE & Spares for MEL MAHAN STG II (2X800MW) UNIT-1 & 2, Raigarh STPP Phase-II Unit-1& Unit-2, APL RAIPUR U1 & U2 & MIRZAPUR MTEUPPL U1 & U2 projects

SI No	PR No	PR Item	Package	Delivery Location	Material Code	Material Description	Long Description	QTY	UOM
104	138981675	40	Package F (APL RAIPUR)	FOR APL RAIPUR Project site	L184414220002004	BURNER TRIP VALVES- LFO NB25	Burner Tripvalves _ LFO , NB25 as per the enclosed Spec. no.TOS:MEL:1350:/Rev.00 (TAG NOS. LO40A-LO40H, LO40J-LO40N, LO40P-LO40R)	16	NO
105	138981675	50	Package F (APL RAIPUR)	FOR APL RAIPUR Project site	L184414220002005	BURNER TRIP VALVES- AIR SCAVENGING NB25	Burner Trip valves _ Scavenging air, NB 25 as per the enclosed Spec.no.TOS:MEL:1350:/Rev.00 (TAG NOS. A59A-A59H, A59J-A59N, A59P-A59R)	16	NO
106	138981675	60	Package F (APL RAIPUR)	FOR APL RAIPUR Project site	L184414220002006	LFO RETURN BYPASS VALVE NB80	LFO RETURN BYPASS VALVE -LORBV (NB80; TAG NO.LO80) AS PER TECHNICAL SPECIFICATION TOS:MEL:1350/REV.00	1	NO
107	138981676	10	Package F (APL RAIPUR)	FOR APL RAIPUR Project site	L184414220002001	LDO MAIN TRIP VALVE NB100	LDO MAIN TRIP VALVE AS PER THE ENCLOSED SPECIFICATION NO TOS:MEL:1350/00 TAG NO. LO30A,NB100.	1	NO
108	138981676	20	Package F (APL RAIPUR)	FOR APL RAIPUR Project site	L184414220002002	LIGHT OIL (3 WAY) RETURN TRIP VALVE NB80	LIGHT OIL (3 WAY) RETURN TRIP VALVE AS PER THE ENCLOSED SPECIFICATION NO TOS:MEL:1350/00 TAG NO. LO45A,NB80.	1	NO
109	138981676	30	Package F (APL RAIPUR)	FOR APL RAIPUR Project site	L184414220002003	BURNER TRIP VALVES- ATOMISING AIR NB25	Burner Trip valves _ Air , NB25 as per the enclosed Spec. no.TOS:MEL:1350:/Rev.00 (TAG NOS. A20A-A20H, A20J-A20N, A20P-R)	16	NO
110	138981676	40	Package F (APL RAIPUR)	FOR APL RAIPUR Project site	L184414220002004	BURNER TRIP VALVES- LFO NB25	Burner Tripvalves _ LFO , NB25 as per the enclosed Spec. no.TOS:MEL:1350:/Rev.00 (TAG NOS. LO40A-LO40H, LO40J-LO40N, LO40P-LO40R)	16	NO
111	138981676	50	Package F (APL RAIPUR)	FOR APL RAIPUR Project site	L184414220002005	BURNER TRIP VALVES- AIR SCAVENGING NB25	Burner Trip valves _ Scavenging air, NB 25 as per the enclosed Spec.no.TOS:MEL:1350:/Rev.00 (TAG NOS. A59A-A59H, A59J-A59N, A59P-A59R)	16	NO
112	138981676	60	Package F (APL RAIPUR)	FOR APL RAIPUR Project site	L184414220002006	LFO RETURN BYPASS VALVE NB80	LFO RETURN BYPASS VALVE -LORBV (NB80; TAG NO.LO80) AS PER TECHNICAL SPECIFICATION TOS:MEL:1350/REV.00	1	NO
113	138981874	10	Package F (APL RAIPUR)	FOR APL RAIPUR Project site	L184484298801001	ACTUATOR DIAPHRAGM FOR FO TRIP VALVES	Actuator Diaphragm for Trip valves against BHEL Material Codes: L184414220002001, L184414220002002 & L184414220002006. 1 SET means 50% of total quantity in each variant of Actuator diaphragm required for replacement in the trip valves supplied against above said BHEL material codes.	1	SET
114	138981874	20	Package F (APL RAIPUR)	FOR APL RAIPUR Project site	L184484298801002	GLAND PACKING FOR FO TRIP VALVES	Gland Packing for Trip valves against BHEL Material Codes: L184414220002001, L184414220002002 & L184414220002006. 1 SET means 25% of total quantity in each variant of gland packing required for replacement in the trip valves supplied against above said BHEL material codes.	1	SET
115	138981874	30	Package F (APL RAIPUR)	FOR APL RAIPUR Project site	L184484298801003	ACTUATOR DIAPHRAGM FOR BURNER TRIP VALVE	Actuator Diaphragm for Burner Trip valves against BHEL Material Codes: L184414220002003 to L184414220002005. 1 SET means 15% of total quantity in each variant of Actuator diaphragm required for replacement in the burner trip valves supplied against above said BHEL material codes.	1	SET
116	138981874	40	Package F (APL RAIPUR)	FOR APL RAIPUR Project site	L184484298801004	GLAND PACKING FOR BURNER TRIP VALVES	Gland Packing for Burner Trip valves against BHEL Material Codes: L184414220002003 to L184414220002005. 1 SET means 15% of total quantity in each variant of gland packing required for replacement in the burner trip valves supplied against above said BHEL material codes.	1	SET
117	138981875	10	Package F (APL RAIPUR)	FOR APL RAIPUR Project site	L184484298801001	ACTUATOR DIAPHRAGM FOR FO TRIP VALVES	Actuator Diaphragm for Trip valves against BHEL Material Codes: L184414220002001, L184414220002002 & L184414220002006. 1 SET means 50% of total quantity in each variant of Actuator diaphragm required for replacement in the trip valves supplied against above said BHEL material codes.	1	SET
118	138981875	20	Package F (APL RAIPUR)	FOR APL RAIPUR Project site	L184484298801002	GLAND PACKING FOR FO TRIP VALVES	Gland Packing for Trip valves against BHEL Material Codes: L184414220002001, L184414220002002 & L184414220002006. 1 SET means 25% of total quantity in each variant of gland packing required for replacement in the trip valves supplied against above said BHEL material codes.	1	SET

Annexure B: Item Details: FURL OIL CONTROL & TRIP VALVE & Spares for MEL MAHAN STG II (2X800MW) UNIT-1 & 2, Raigarh STPP Phase-II Unit-1& Unit-2, APL RAIPUR U1 & U2 & MIRZAPUR MTEUPPL U1 & U2 projects

Sl No	PR No	PR Item	Package	Delivery Location	Material Code	Material Description	Long Description	QTY	UOM
119	138981875	30	Package F (APL RAIPUR)	FOR APL RAIPUR Project site	L184484298801003	ACTUATOR DIAPHRAGM FOR BURNER TRIP VALVE	Actuator Diaphragm for Burner Trip valves against BHEL Material Codes: L184414220002003 to L184414220002005. 1 SET means 15% of total quantity in each variant of Actuator diaphragm required for replacement in the burner trip valves supplied against above said BHEL material codes.	1	SET
120	138981875	40	Package F (APL RAIPUR)	FOR APL RAIPUR Project site	L184484298801004	GLAND PACKING FOR BURNER TRIP VALVES	Gland Packing for Burner Trip valves against BHEL Material Codes: L184414220002003 to L184414220002005. 1 SET means 15% of total quantity in each variant of gland packing required for replacement in the burner trip valves supplied against above said BHEL material codes.	1	SET
121	138981951	10	Package E (APL RAIPUR)	FOR APL RAIPUR Project site	L184484298802001	ACTUATOR DIAPHRAGM FOR FO CONTROL VALVES	Actuator diaphragm suitable for control valves offered against BHEL material code L184414220001001. 1 SET means 50% of total quantity in each variant of actuator diaphragm required for replacement in the control valves supplied against above said BHEL material codes.	1	SET
122	138981951	20	Package E (APL RAIPUR)	FOR APL RAIPUR Project site	L184484298802002	GLAND PACKING FOR FO CONTROL VALVES	Gland packing suitable for control valves offered against BHEL material code L184414220001001. 1 SET means 25% of total quantity in each variant of gland packing required for replacement in the control valves supplied against above said BHEL material codes.	1	SET
123	138981952	10	Package E (APL RAIPUR)	FOR APL RAIPUR Project site	L184484298802001	ACTUATOR DIAPHRAGM FOR FO CONTROL VALVES	Actuator diaphragm suitable for control valves offered against BHEL material code L184414220001001. 1 SET means 50% of total quantity in each variant of actuator diaphragm required for replacement in the control valves supplied against above said BHEL material codes.	1	SET
124	138981952	20	Package E (APL RAIPUR)	FOR APL RAIPUR Project site	L184484298802002	GLAND PACKING FOR FO CONTROL VALVES	Gland packing suitable for control valves offered against BHEL material code L184414220001001. 1 SET means 25% of total quantity in each variant of gland packing required for replacement in the control valves supplied against above said BHEL material codes.	1	SET
125	138981955	10	Package E (APL RAIPUR)	BHEL Trichy stores	L1844S4299702001	VALVE TRIM	This Valve trim (including cage,plug, stem, seat rings, guide bushings etc.) shall be exactly same as the valve trim of Control Valve as offered for this project for PGMA 42-200 for check list no.01 for customer nos.1844 & 1845. One set means 1 set for each type of control valve released for this project under material code L184414220001001	1	SET
126	138981955	20	Package E (APL RAIPUR)	BHEL Trichy stores	L1844S4299702002	ACTUATOR ASSEMBLY	This pneumatic actuator assembly shall be exactly same as the pneumatic actuator assembly of Control Valve as offered for this project for PGMA 42-200 for check list no.01 for customer nos.1844 & 1845. One set means 10 % of each type / model/ rating of pneumatic actuator assembly of control valve released for this project under material code L184414220001001	1	SET
127	138981955	30	Package E (APL RAIPUR)	BHEL Trichy stores	L1844S4299702003	DIAPHR,'O' RINGS SEAL,GL PACKIN,GASKET	This diaphragm, 'O' rings seal, gland packing, gaskets etc., shall be exactly same as diaphragm, 'O' rings seal, gland packing, gaskets etc., of Control Valve as offered for this project for PGMA 42-200 for check list no.01 for customer nos.1844 & 1845. One set means 10 % of each type / model/ rating of control valve released for this project under material code L184414220001001. Diaphragms (10% or 02 Nos which ever is more).	1	SET
128	138981955	40	Package E (APL RAIPUR)	BHEL Trichy stores	L1844S4299702004	AIR FILTER REGULATOR	This pneumatic air filter regulator shall be exactly same as the pneumatic air filter regulator of Control Valve as offered for this project for PGMA 42-200 for check list no.01 for customer nos.1844 & 1845. One set means 5 % of each type / model/ rating of air filter regulator of control valve released for this project under material code L184414220001001	1	SET

Annexure B: Item Details: FURL OIL CONTROL & TRIP VALVE & Spares for MEL MAHAN STG II (2X800MW) UNIT-1 & 2, Raigarh STPP Phase-II Unit-1& Unit-2, APL RAIPUR U1 & U2 & MIRZAPUR MTEUPPL U1 & U2 projects

SI No	PR No	PR Item	Package	Delivery Location	Material Code	Material Description	Long Description	QTY	UOM
129	138981955	50	Package E (APL RAIPUR)	BHEL Trichy stores	L1844S4299702005	POSITIONER UNIT	This positioner unit shall be exactly same as the positioner unit of Control Valve as offered for this project for PGMA 42-200 for check list no.01 for customer nos.1844 & 1845. One set means 10 % of each type (If position feedback unit is separate, 10% of each type to be considered) of positioner unit of control valve released for this project under material code L184414220001001	1	SET
130	138981955	60	Package E (APL RAIPUR)	BHEL Trichy stores	L1844S4299702006	AIR LOCK RELAY	This air lock relay shall be exactly same as the air lock relay of the control Valve as offered for this project for PGMA 42-200 for check list no.01 for customer nos.1844 & 1845. One set means 10 Nos each type of air lock relay of control valve released for this project under material code L184414220001001	1	SET
131	138981955	70	Package E (APL RAIPUR)	BHEL Trichy stores	L1844S4299702007	SIGNAL AIR BOOSTER UNIT	This signal air booster unit shall be exactly same as the signal air booster unit of the control Valve as offered for this project for PGMA 42-200 for check list no.01 for customer nos.1844 & 1845. One set means 02 Nos each type of signal air booster unit of control valve released for this project under material code L184414220001001	1	SET
132	138981955	80	Package E (APL RAIPUR)	BHEL Trichy stores	L1844S4299702008	COMMUNICATION MODULE	This communication module shall be exactly same as the communication module of the control Valve as offered for this project for PGMA 42-200 for check list no.01 for customer nos.1844 & 1845. One set means 01 No communication module of control valve released for this project under material code L184414220001001	1	NO
133	138981955	90	Package E (APL RAIPUR)	BHEL Trichy stores	L1844S4299702009	HART INTERFACE MODULE	This hart interface module shall be exactly same as the hart interface module of the control Valve as offered for this project for PGMA 42-200 for check list no.01 for customer nos.1844 & 1845. One set means 10% of total nos. used in the system or minimum 1(one) no. whichever is more of control valve released for this project under material code L184414220001001	1	SET
134	138981955	100	Package E (APL RAIPUR)	BHEL Trichy stores	L1844S4299702010	POWER SUPPLY MODULE	This power supply module shall be exactly same as the power supply module of the control Valve as offered for this project for PGMA 42-200 for check list no.01 for customer nos.1844 & 1845. One set means 01 no of power supply module of control valve released for this project under material code L184414220001001	1	NO
135	138981955	110	Package E (APL RAIPUR)	BHEL Trichy stores	L1844S4299702011	ANY OTHER CRITICAL SPARE	this is any other critical spare of the hart management system of the control Valve as offered for this project for PGMA 42-200 for check list no.01 for customer nos.1844 & 1845. One set means 1 (One) No. of each type & model used in the system of control valve released for this project under material code L184414220001001	1	NO
136	138981955	120	Package E (APL RAIPUR)	BHEL Trichy stores	L1844S4299702012	POSITION FEEDBACK LIMIT SWITCH	This position feedback limit switch shall be exactly same as the position feedback limit switch of Control Valve as offered for this project for PGMA 42-200 for check list no.01 for customer nos.1844 & 1845. One set means 10 Nos. for each type & rating of control valve released for this project under material code L184414220001001	1	SET
137	138981958	10	Package F (APL RAIPUR)	BHEL Trichy stores	L1844S4299703008	GASKET	This gasket shall be exactly same as the gasket of trip valves as offered for this project for PGMA 42-200 for check list no.02 for customer nos.1844 & 1845. One set means 2(two) sets for each type of Trip Valve released for this project under material codes L184414220002001 to L184414220002006	1	SET
138	138981958	20	Package F (APL RAIPUR)	BHEL Trichy stores	L1844S4299703009	SOLENOID COIL FOR PNEU TYPE ON/OFF VLV	This solenoid coil shall be exactly same as the solenoid valve coil of trip valves as offered for this project for PGMA 42-200 for check list no.02 for customer nos.1844 & 1845. One set means 05 Nos. for each type & rating of Trip Valve released for this project under material codes L184414220002001 to L184414220002006	1	SET
139	138981958	30	Package F (APL RAIPUR)	BHEL Trichy stores	L1844S4299703010	AIR LOCK RELAY	This air lock relay shall be exactly same as the air lock relay of trip valves as offered for this project for PGMA 42-200 for check list no.02 for customer nos.1844 & 1845. One set means 10 Nos. for each type of Trip Valve released for this project under material codes L184414220002001 to L184414220002006	1	SET
140	138981958	40	Package F (APL RAIPUR)	BHEL Trichy stores	L1844S4299703011	SIGNAL AIR BOOSTER UNIT	This signal air booster shall be exactly same as the signal air booster of trip valves as offered for this project for PGMA 42-200 for check list no.02 for customer nos.1844 & 1845. One set means 02 Nos. for each type & rating of Trip Valve released for this project under material codes L184414220002001 to L184414220002006	1	SET

Annexure B: Item Details: FURL OIL CONTROL & TRIP VALVE & Spares for MEL MAHAN STG II (2X800MW) UNIT-1 & 2, Raigarh STPP Phase-II Unit-1& Unit-2, APL RAIPUR U1 & U2 & MIRZAPUR MTEUPPL U1 & U2 projects

Sl No	PR No	PR Item	Package	Delivery Location	Material Code	Material Description	Long Description	QTY	UOM
141	138981958	50	Package F (APL RAIPUR)	BHEL Trichy stores	L1844S4299703001	SOLENOID VALVES	This solenoid valve shall be exactly same as the solenoid valve of trip valves as offered for this project for PGMA 42-200 for check list no.02 for customer nos.1844 & 1845. One set means 02 Nos. for each type & rating for trip valves released for this project under material codes L184414220002001 to L184414220002006	1	SET
142	138981958	60	Package F (APL RAIPUR)	BHEL Trichy stores	L1844S4299703002	POSITION FEEDBACK LIMIT SWITCH	This limit switch shall be exactly same as the limit switch of trip valves as offered for this project for PGMA 42-200 for check list no.02 for customer nos.1844 & 1845. One set means 10 Nos. for each type & rating for trip valves released for this project under material codes L184414220002001 to L184414220002006	1	SET
143	138981958	70	Package F (APL RAIPUR)	BHEL Trichy stores	L1844S4299703003	AIR FILTER REGULATORS	This air filter regulator shall be exactly same as the air filter regulator of trip valves as offered for this project for PGMA 42-200 for check list no.02 for customer nos.1844 & 1845. One set means 5 % of each type / model/ rating for trip valves released for this project under material codes L184414220002001 to L184414220002006	1	SET
144	138981958	80	Package F (APL RAIPUR)	BHEL Trichy stores	L1844S4299703004	DIAPHRAGM	This diaphragm shall be exactly same as the diaphragm of actuator of trip valves as offered for this project for PGMA 42-200 for check list no.02 for customer nos.1844 & 1845. One set means 2(two) nos. for each type of actuator for trip valves released for this project under material codes L184414220002001 to L184414220002006	1	SET
145	138981958	90	Package F (APL RAIPUR)	BHEL Trichy stores	L1844S4299703005	GLAND PACKING	This gland packing shall be exactly same as the gland packing of trip valves as offered for this project for PGMA 42-200 for check list no.02 for customer nos.1844 & 1845. One set means 1(one) set for each type of Trip Valve released for this project under material codes L184414220002001 to L184414220002006	1	SET
146	138981958	100	Package F (APL RAIPUR)	BHEL Trichy stores	L1844S4299703006	PLUG, SEAT, CAGE, STEM ETC.	This Plug, Seat, Cage, Stem etc. shall be exactly same as the Plug, Seat, Cage, Stem etc. of trip valves as offered for this project for PGMA 42-200 for check list no.02 for customer nos.1844 & 1845. One set means 1(one) set for each type of Trip Valve released for this project under material codes L184414220002001 to L184414220002006	1	SET
147	138981958	110	Package F (APL RAIPUR)	BHEL Trichy stores	L1844S4299703007	RETAINER RING, SEAL RING ETC.	This Retainer Ring, Seal Ring etc. shall be exactly same as the Retainer Ring, Seal Ring etc. of trip valves as offered for this project for PGMA 42-200 for check list no.02 for customer nos.1844 & 1845. One set means 1(one) set for each type of Trip Valve released for this project under material codes L184414220002001 to L184414220002006	1	SET
148	138981672	10	Package G (MIRZAPUR MTEUPPL)	FOR MIRZAPUR MTEUPPL Project site	L184614220001001	LDO FLOW CONTROL VALVE NB80	LOFCV:TAG NO:LO33A; NB80 ANSI 300 LBS as per the enclosed Spec.no.TOS:MEL:1360/00.	1	NO
149	138981673	10	Package G (MIRZAPUR MTEUPPL)	FOR MIRZAPUR MTEUPPL Project site	L184614220001001	LDO FLOW CONTROL VALVE NB80	LOFCV:TAG NO:LO33A; NB80 ANSI 300 LBS as per the enclosed Spec.no.TOS:MEL:1360/00.	1	NO
150	138981862	10	Package H (MIRZAPUR MTEUPPL)	FOR MIRZAPUR MTEUPPL Project site	L184614220002005	BURNER TRIP VALVES- AIR SCAVENGING NB25	Burner Trip valves _ Scavenging air, NB 25 as per the enclosed Spec.no.TOS:MEL:1350-/Rev.00 (TAG NOS. A59A-A59H, A59J-A59N, A59P-A59R)	16	NO
151	138981862	20	Package H (MIRZAPUR MTEUPPL)	FOR MIRZAPUR MTEUPPL Project site	L184614220002006	LFO RETURN BYPASS VALVE NB80	LFO RETURN BYPASS VALVE -LORBV (NB80; TAG NO.LO80) AS PER TECHNICAL SPECIFICATION TOS:MEL:1350/REV.00	1	NO
152	138981862	30	Package H (MIRZAPUR MTEUPPL)	FOR MIRZAPUR MTEUPPL Project site	L184614220002001	LDO MAIN TRIP VALVE NB100	LDO MAIN TRIP VALVE AS PER THE ENCLOSED SPECIFICATION NO TOS:MEL:1350/00 TAG NO. LO30A;NB100.	1	NO
153	138981862	40	Package H (MIRZAPUR MTEUPPL)	FOR MIRZAPUR MTEUPPL Project site	L184614220002002	LIGHT OIL (3 WAY) RETURN TRIP VALVE NB80	LIGHT OIL (3 WAY) RETURN TRIP VALVE AS PER THE ENCLOSED SPECIFICATION NO TOS:MEL:1350/00 TAG NO. LO45A;NB80.	1	NO
154	138981862	50	Package H (MIRZAPUR MTEUPPL)	FOR MIRZAPUR MTEUPPL Project site	L184614220002003	BURNER TRIP VALVES- ATOMISING AIR NB25	Burner Trip valves _ Air , NB25 as per the enclosed Spec. no.TOS:MEL:1350-/Rev.00 (TAG NOS. A20A-A20H, A20J-A20N, A20P-R)	16	NO
155	138981862	60	Package H (MIRZAPUR MTEUPPL)	FOR MIRZAPUR MTEUPPL Project site	L184614220002004	BURNER TRIP VALVES- LFO NB25	Burner Tripvalves _ LFO , NB25 as per the enclosed Spec. no.TOS:MEL:1350-/Rev.00 (TAG NOS. LO40A-LO40H, LO40J-LO40N, LO40P-LO40R)	16	NO
156	138981863	10	Package H (MIRZAPUR MTEUPPL)	FOR MIRZAPUR MTEUPPL Project site	L184614220002001	LDO MAIN TRIP VALVE NB100	LDO MAIN TRIP VALVE AS PER THE ENCLOSED SPECIFICATION NO TOS:MEL:1350/00 TAG NO. LO30A;NB100.	1	NO

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SI No	PR No	PR Item	Package	Delivery Location	Material Code	Material Description	Long Description	QTY	UOM
157	138981863	20	Package H (MIRZAPUR MTEUPPL)	FOR MIRZAPUR MTEUPPL Project site	L184614220002002	LIGHT OIL (3 WAY) RETURN TRIP VALVE NB80	LIGHT OIL (3 WAY) RETURN TRIP VALVE AS PER THE ENCLOSED SPECIFICATION NO TOS:MEL:1350/00 TAG NO. LO45A;NB80. SPECIFICATION NO TOS:MEL:1350/00 TAG NO. LO30A;NB100.	1	NO
158	138981863	30	Package H (MIRZAPUR MTEUPPL)	FOR MIRZAPUR MTEUPPL Project site	L184614220002003	BURNER TRIP VALVES- ATOMISING AIR NB25	Burner Trip valves _ Air , NB25 as per the enclosed Spec. no.TOS:MEL:1350;/Rev.00 (TAG NOS. A20A-A20H, A20J-A20N, A20P-R) SPECIFICATION NO TOS:MEL:1350/00 TAG NO. LO30A;NB100.	16	NO
159	138981863	40	Package H (MIRZAPUR MTEUPPL)	FOR MIRZAPUR MTEUPPL Project site	L184614220002004	BURNER TRIP VALVES- LFO NB25	Burner Tripvalves _ LFO , NB25 as per the enclosed Spec. no.TOS:MEL:1350;/Rev.00 (TAG NOS. LO40A-LO40H, LO40J-LO40N, LO40P-LO40R) SPECIFICATION NO TOS:MEL:1350/00 TAG NO. LO30A;NB100.	16	NO
160	138981863	50	Package H (MIRZAPUR MTEUPPL)	FOR MIRZAPUR MTEUPPL Project site	L184614220002005	BURNER TRIP VALVES- AIR SCAVENGING NB25	Burner Trip valves _ Scavenging air, NB 25 as per the enclosed Spec.no.TOS:MEL:1350;/Rev.00 (TAG NOS. A59A-A59H, A59J-A59N, A59P-A59R) SPECIFICATION NO TOS:MEL:1350/00 TAG NO. LO30A;NB100.	16	NO
161	138981863	60	Package H (MIRZAPUR MTEUPPL)	FOR MIRZAPUR MTEUPPL Project site	L184614220002006	LFO RETURN BYPASS VALVE NB80	LFO RETURN BYPASS VALVE -LORBV (NB80; TAG NO.LO80) AS PER TECHNICAL SPECIFICATION TOS:MEL:1350/REV.00 SPECIFICATION NO TOS:MEL:1350/00 TAG NO. LO30A;NB100.	1	NO
162	138981872	10	Package H (MIRZAPUR MTEUPPL)	FOR MIRZAPUR MTEUPPL Project site	L184684298801001	ACTUATOR DIAPHRAGM FOR FO TRIP VALVES	Actuator Diaphragm for Trip valves against BHEL Material Codes: L184614220002001, L184614220002002 & L184614220002006. 1 SET means 50% of total quantity in each variant of Actuator diaphragm required for replacement in the trip valves supplied against above said BHEL material codes.	1	SET
163	138981872	20	Package H (MIRZAPUR MTEUPPL)	FOR MIRZAPUR MTEUPPL Project site	L184684298801002	GLAND PACKING FOR FO TRIP VALVES	Gland Packing for Trip valves against BHEL Material Codes: L184614220002001, L184614220002002 & L184614220002006. 1 SET means 25% of total quantity in each variant of gland packing required for replacement in the trip valves supplied against above said BHEL material codes. 1 SET means 50% of total quantity in each variant of Actuator diaphragm required for replacement in the trip valves supplied against above said BHEL material codes.	1	SET
164	138981872	30	Package H (MIRZAPUR MTEUPPL)	FOR MIRZAPUR MTEUPPL Project site	L184684298801003	ACTUATOR DIAPHRAGM FOR BURNER TRIP VALVE	Actuator Diaphragm for Burner Trip valves against BHEL Material Codes: L184614220002003 to L184614220002005. 1 SET means 15% of total quantity in each variant of Actuator diaphragm required for replacement in the burner trip valves supplied against above said BHEL material codes. 1 SET means 50% of total quantity in each variant of Actuator diaphragm required for replacement in the trip valves supplied against above said BHEL material codes.	1	SET

Annexure B: Item Details: FURL OIL CONTROL & TRIP VALVE & Spares for MEL MAHAN STG II (2X800MW) UNIT-1 & 2, Raigarh STPP Phase-II Unit-1& Unit-2, APL RAIPUR U1 & U2 & MIRZAPUR MTEUPPL U1 & U2 projects

SI No	PR No	PR Item	Package	Delivery Location	Material Code	Material Description	Long Description	QTY	UOM
165	138981872	40	Package H (MIRZAPUR MTEUPPL)	FOR MIRZAPUR MTEUPPL Project site	L184684298801004	GLAND PACKING FOR BURNER TRIP VALVES	Gland Packing for Burner Trip valves against BHEL Material Codes: L184614220002003 to L184614220002005. 1 SET means 15% of total quantity in each variant of gland packing required for replacement in the burner trip valves supplied against above said BHEL material codes. 1 SET means 50% of total quantity in each variant of Actuator diaphragm required for replacement in the trip valves supplied against above said BHEL material codes.	1	SET
166	138981873	10	Package H (MIRZAPUR MTEUPPL)	FOR MIRZAPUR MTEUPPL Project site	L184684298801001	ACTUATOR DIAPHRAGM FOR FO TRIP VALVES	Actuator Diaphragm for Trip valves against BHEL Material Codes: L184614220002001, L184614220002002 & L184614220002006. 1 SET means 50% of total quantity in each variant of Actuator diaphragm required for replacement in the trip valves supplied against above said BHEL material codes. 1 SET means 50% of total quantity in each variant of Actuator diaphragm required for replacement in the trip valves supplied against above said BHEL material codes.	1	SET
167	138981873	20	Package H (MIRZAPUR MTEUPPL)	FOR MIRZAPUR MTEUPPL Project site	L184684298801002	GLAND PACKING FOR FO TRIP VALVES	Gland Packing for Trip valves against BHEL Material Codes: L184614220002001, L184614220002002 & L184614220002006. 1 SET means 25% of total quantity in each variant of gland packing required for replacement in the trip valves supplied against above said BHEL material codes. 1 SET means 50% of total quantity in each variant of Actuator diaphragm required for replacement in the trip valves supplied against above said BHEL material codes.	1	SET
168	138981873	30	Package H (MIRZAPUR MTEUPPL)	FOR MIRZAPUR MTEUPPL Project site	L184684298801003	ACTUATOR DIAPHRAGM FOR BURNER TRIP VALVE	Actuator Diaphragm for Burner Trip valves against BHEL Material Codes: L184614220002003 to L184614220002005. 1 SET means 15% of total quantity in each variant of Actuator diaphragm required for replacement in the burner trip valves supplied against above said BHEL material codes. 1 SET means 50% of total quantity in each variant of Actuator diaphragm required for replacement in the trip valves supplied against above said BHEL material codes.	1	SET
169	138981873	40	Package H (MIRZAPUR MTEUPPL)	FOR MIRZAPUR MTEUPPL Project site	L184684298801004	GLAND PACKING FOR BURNER TRIP VALVES	Gland Packing for Burner Trip valves against BHEL Material Codes: L184614220002003 to L184614220002005. 1 SET means 15% of total quantity in each variant of gland packing required for replacement in the burner trip valves supplied against above said BHEL material codes. 1 SET means 50% of total quantity in each variant of Actuator diaphragm required for replacement in the trip valves supplied against above said BHEL material codes.	1	SET
170	138981953	10	Package G (MIRZAPUR MTEUPPL)	FOR MIRZAPUR MTEUPPL Project site	L184684298802001	ACTUATOR DIAPHRAGM FOR FO CONTROL VALVES	Actuator diaphragm suitable for control valves offered against BHEL material code L184614220001001. 1 SET means 50% of total quantity in each variant of actuator diaphragm required for replacement in the control valves supplied against above said BHEL material codes.	1	SET

Annexure B: Item Details: FURL OIL CONTROL & TRIP VALVE & Spares for MEL MAHAN STG II (2X800MW) UNIT-1 & 2, Raigarh STPP Phase-II Unit-1& Unit-2, APL RAIPUR U1 & U2 & MIRZAPUR MTEUPPL U1 & U2 projects

SI No	PR No	PR Item	Package	Delivery Location	Material Code	Material Description	Long Description	QTY	UOM
171	138981953	20	Package G (MIRZAPUR MTEUPPL)	FOR MIRZAPUR MTEUPPL Project site	L184684298802002	GLAND PACKING FOR FO CONTROL VALVES	Gland packing suitable for control valves offered against BHEL material code L184614220001001. 1 SET means 25% of total quantity in each variant of gland packing required for replacement in the control valves supplied against above said BHEL material codes.	1	SET
172	138981954	10	Package G (MIRZAPUR MTEUPPL)	FOR MIRZAPUR MTEUPPL Project site	L184684298802001	ACTUATOR DIAPHRAGM FOR FO CONTROL VALVES	Actuator diaphragm suitable for control valves offered against BHEL material code L184614220001001. 1 SET means 50% of total quantity in each variant of actuator diaphragm required for replacement in the control valves supplied against above said BHEL material codes.	1	SET
173	138981954	20	Package G (MIRZAPUR MTEUPPL)	FOR MIRZAPUR MTEUPPL Project site	L184684298802002	GLAND PACKING FOR FO CONTROL VALVES	Gland packing suitable for control valves offered against BHEL material code L184614220001001. 1 SET means 25% of total quantity in each variant of gland packing required for replacement in the control valves supplied against above said BHEL material codes.	1	SET
174	138981956	10	Package G (MIRZAPUR MTEUPPL)	BHEL Trichy stores	L1846S4299702001	VALVE TRIM	This Valve trim (including cage,plug, stem, seat rings, guide bushings etc.) shall be exactly same as the valve trim of Control Valve as offered for this project for PGMA 42-200 for check list no.01 for customer nos.1846 & 1847. One set means 1 set for each type of control valve released for this project under material code L184614220001001	1	SET
175	138981956	20	Package G (MIRZAPUR MTEUPPL)	BHEL Trichy stores	L1846S4299702002	ACTUATOR ASSEMBLY	This pneumatic actuator assembly shall be exactly same as the pneumatic actuator assembly of Control Valve as offered for this project for PGMA 42-200 for check list no.01 for customer nos.1846 & 1847. One set means 10 % of each type / model/ rating of pneumatic actuator assembly of control valve released for this project under material code L184614220001001	1	SET
176	138981956	30	Package G (MIRZAPUR MTEUPPL)	BHEL Trichy stores	L1846S4299702003	DIAPHR,'O' RINGS SEAL,GL PACKIN,GASKET	This diaphragm, 'O' rings seal, gland packing, gaskets etc., shall be exactly same as diaphragm, 'O' rings seal, gland packing, gaskets etc., of Control Valve as offered for this project for PGMA 42-200 for check list no.01 for customer nos.1846 & 1847. One set means 10 % of each type / model/ rating of control valve released for this project under material code L184614220001001. Diaphragms (10% or 02 Nos which ever is more).	1	SET
177	138981956	40	Package G (MIRZAPUR MTEUPPL)	BHEL Trichy stores	L1846S4299702004	AIR FILTER REGULATOR	This pneumatic air filter regulator shall be exactly same as the pneumatic air filter regulator of Control Valve as offered for this project for PGMA 42-200 for check list no.01 for customer nos.1846 & 1847. One set means 5 % of each type / model/ rating of air filter regulator of control valve released for this project under material code L184614220001001	1	SET
178	138981956	50	Package G (MIRZAPUR MTEUPPL)	BHEL Trichy stores	L1846S4299702005	POSITIONER UNIT	This positioner unit shall be exactly same as the positioner unit of Control Valve as offered for this project for PGMA 42-200 for check list no.01 for customer nos.1846 & 1847. One set means 10 % of each type (If position feedback unit is separate, 10% of each type to be considered) of positioner unit of control valve released for this project under material code L184614220001001	1	SET
179	138981956	60	Package G (MIRZAPUR MTEUPPL)	BHEL Trichy stores	L1846S4299702006	AIR LOCK RELAY	This air lock relay shall be exactly same as the air lock relay of the control Valve as offered for this project for PGMA 42-200 for check list no.01 for customer nos.1846 & 1847. One set means 10 Nos each type of air lock relay of control valve released for this project under material code L184614220001001	1	SET
180	138981956	70	Package G (MIRZAPUR MTEUPPL)	BHEL Trichy stores	L1846S4299702007	SIGNAL AIR BOOSTER UNIT	This signal air booster unit shall be exactly same as the signal air booster unit of the control Valve as offered for this project for PGMA 42-200 for check list no.01 for customer nos.1846 & 1847. One set means 02 Nos each type of signal air booster unit of control valve released for this project under material code L184614220001001	1	SET
181	138981956	80	Package G (MIRZAPUR MTEUPPL)	BHEL Trichy stores	L1846S4299702008	COMMUNICATION MODULE	This communication module shall be exactly same as the communication module of the control Valve as offered for this project for PGMA 42-200 for check list no.01 for customer nos.1846 & 1847. One set means 01 No communication module of control valve released for this project under material code L184614220001001	1	NO

Annexure B: Item Details: FURL OIL CONTROL & TRIP VALVE & Spares for MEL MAHAN STG II (2X800MW) UNIT-1 & 2, Raigarh STPP Phase-II Unit-1& Unit-2, APL RAIPUR U1 & U2 & MIRZAPUR MTEUPPL U1 & U2 projects

SI No	PR No	PR Item	Package	Delivery Location	Material Code	Material Description	Long Description	QTY	UOM
182	138981956	90	Package G (MIRZAPUR MTEUPPL)	BHEL Trichy stores	L1846S4299702009	HART INTERFACE MODULE	This hart interface module shall be exactly same as the hart interface module of the control Valve as offered for this project for PGMA 42-200 for check list no.01 for customer nos.1846 & 1847. One set means 10% of total nos. used in the system or minimum 1(one) no. whichever is more of control valve released for this project under material code L184614220001001	1	SET
183	138981956	100	Package G (MIRZAPUR MTEUPPL)	BHEL Trichy stores	L1846S4299702010	POWER SUPPLY MODULE	This power supply module shall be exactly same as the power supply module of the control Valve as offered for this project for PGMA 42-200 for check list no.01 for customer nos.1846 & 1847. One set means 01 no of power supply module of control valve released for this project under material code L184614220001001	1	NO
184	138981956	110	Package G (MIRZAPUR MTEUPPL)	BHEL Trichy stores	L1846S4299702011	ANY OTHER CRITICAL SPARE	this is any other critical spare of the hart management system of the control Valve as offered for this project for PGMA 42-200 for check list no.01 for customer nos.1846 & 1847. One set means 1 (One) No. of each type & model used in the system of control valve released for this project under material code L184614220001001	1	NO
185	138981956	120	Package G (MIRZAPUR MTEUPPL)	BHEL Trichy stores	L1846S4299702012	POSITION FEEDBACK LIMIT SWITCH	This position feedback limit switch shall be exactly same as the position feedback limit switch of Control Valve as offered for this project for PGMA 42-200 for check list no.01 for customer nos.1846 & 1847. One set means 10 Nos. for each type & rating of control valve released for this project under material code L184614220001001	1	SET
186	138981959	10	Package H (MIRZAPUR MTEUPPL)	BHEL Trichy stores	L1846S4299703010	AIR LOCK RELAY	This air lock relay shall be exactly same as the air lock relay of trip valves as offered for this project for PGMA 42-200 for check list no.02 for customer nos.1846 & 1847. One set means 10 Nos. for each type of Trip Valve released for this project under material codes L184614220002001 to L184614220002006	1	SET
187	138981959	20	Package H (MIRZAPUR MTEUPPL)	BHEL Trichy stores	L1846S4299703011	SIGNAL AIR BOOSTER UNIT	This signal air booster shall be exactly same as the signal air booster of trip valves as offered for this project for PGMA 42-200 for check list no.02 for customer nos.1846 & 1847. One set means 02 Nos. for each type & rating of Trip Valve released for this project under material codes L184614220002001 to L184614220002006	1	SET
188	138981959	30	Package H (MIRZAPUR MTEUPPL)	BHEL Trichy stores	L1846S4299703001	SOLENOID VALVES	This solenoid valve shall be exactly same as the solenoid valve of trip valves as offered for this project for PGMA 42-200 for check list no.02 for customer nos.1846 & 1847. One set means 02 Nos. for each type & rating for trip valves released for this project under material codes L184614220002001 to L184614220002006	1	SET
189	138981959	40	Package H (MIRZAPUR MTEUPPL)	BHEL Trichy stores	L1846S4299703002	POSITION FEEDBACK LIMIT SWITCH	This limit switch shall be exactly same as the limit switch of trip valves as offered for this project for PGMA 42-200 for check list no.02 for customer nos.1846 & 1847. One set means 10 Nos. for each type & rating for trip valves released for this project under material codes L184614220002001 to L184614220002006	1	SET
190	138981959	50	Package H (MIRZAPUR MTEUPPL)	BHEL Trichy stores	L1846S4299703003	AIR FILTER REGULATORS	This air filter regulator shall be exactly same as the air filter regulator of trip valves as offered for this project for PGMA 42-200 for check list no.02 for customer nos.1846 & 1847. One set means 5 % of each type / model/ rating for trip valves released for this project under material codes L184614220002001 to L184614220002006	1	SET
191	138981959	60	Package H (MIRZAPUR MTEUPPL)	BHEL Trichy stores	L1846S4299703004	DIAPHRAGM	This diaphragm shall be exactly same as the diaphragm of actuator of trip valves as offered for this project for PGMA 42-200 for check list no.02 for customer nos.1846 & 1847. One set means 2(two) nos. for each type of actuator for trip valves released for this project under material codes L184614220002001 to L184614220002006	1	SET
192	138981959	70	Package H (MIRZAPUR MTEUPPL)	BHEL Trichy stores	L1846S4299703005	GLAND PACKING	This gland packing shall be exactly same as the gland packing of of trip valves as offered for this project for PGMA 42-200 for check list no.02 for customer nos.1846 & 1847. One set means 1(one) set for each type of Trip Valve released for this project under material codes L184614220002001 to L184614220002006	1	SET
193	138981959	80	Package H (MIRZAPUR MTEUPPL)	BHEL Trichy stores	L1846S4299703006	PLUG, SEAT, CAGE, STEM ETC.	This Plug, Seat, Cage, Stem etc. shall be exactly same as the Plug, Seat, Cage, Stem etc. of trip valves as offered for this project for PGMA 42-200 for check list no.02 for customer nos.1846 & 1847. One set means 1(one) set for each type of Trip Valve released for this project under material codes L184614220002001 to L184614220002006	1	SET

Annexure B: Item Details: FURL OIL CONTROL & TRIP VALVE & Spares for MEL MAHAN STG II (2X800MW) UNIT-1 & 2, Raigarh STPP Phase-II Unit-1& Unit-2, APL RAIPUR U1 & U2 & MIRZAPUR MTEUPPL U1 & U2 projects

SI No	PR No	PR Item	Package	Delivery Location	Material Code	Material Description	Long Description	QTY	UOM
194	138981959	90	Package H (MIRZAPUR MTEUPPL)	BHEL Trichy stores	L1846S4299703007	RETAINER RING, SEAL RING ETC.	This Retainer Ring, Seal Ring etc. shall be exactly same as the Retainer Ring, Seal Ring etc. of trip valves as offered for this project for PGMA 42-200 for check list no.02 for customer nos.1846 & 1847. One set means 1(one) set for each type of Trip Valve released for this project under material codes L184614220002001 to L184614220002006	1	SET
195	138981959	100	Package H (MIRZAPUR MTEUPPL)	BHEL Trichy stores	L1846S4299703008	GASKET	This gasket shall be exactly same as the gasket of trip valves as offered for this project for PGMA 42-200 for check list no.02 for customer nos.1846 & 1847. One set means 2(two) sets for each type of Trip Valve released for this project under material codes L184614220002001 to L184614220002006	1	SET
196	138981959	110	Package H (MIRZAPUR MTEUPPL)	BHEL Trichy stores	L1846S4299703009	SOLENOID COIL FOR PNEU TYPE ON/OFF VLV	This solenoid coil shall be exactly same as the solenoid valve coil of trip valves as offered for this project for PGMA 42-200 for check list no.02 for customer nos.1846 & 1847. One set means 05 Nos. for each type & rating of Trip Valve released for this project under material codes L184614220002001 to L184614220002006	1	SET

**BHARAT HEAVY ELECTRICALS LIMITED
TIRUCHIRAPPALLI-620 014.**

Buyer Added Bid Specific Additional Terms & Conditions (ATC)

GEM ENQUIRY NO:

Note: This Annexure has to be mandatorily filled & signed by the manufacturer (or) mill and submitted along with Technical bid.

Any deviation to the below mentioned terms shall be stated specifically in the comments column for each term and also in case of acceptance to our terms, it will be construed that the whole term is understood and agreed in totality without any deviation. (If otherwise mentioned).

SI No	BHEL Requirements	Supplier Comments
01	Pre-Qualification Criteria: 1.1 Technical Supply shall be as per Annexure B - Item details <u>A) CONTROL VALVE FOR FUEL OIL SYSTEM</u> AS PER THE ENCLOSED ANNEXURE AND SPECIFICATION TOS: MEL : 1360/00. ENCLOSURE: 1.SPECIFICATION AND DATA SHEET:TOS: MEL : 1360/00 2.SPECIFICATION FOR SMART POSITIONER SPECIFICATION NO.TCI:317/rev08. 3.E, C&I Input - CI:MAHAN:ECI:CV/REV.01 REMARKS: 1. VENDOR SHALL FURNISH UNIT WEIGHT AND DIMENSIONAL DRAWINGS OF THE VALVES AT THE TIME OF OFFER ITSELF. 2. VENDOR SHALL FOLLOW APPLICABLE PAINTING SCHEDULE FOR THIS PROJECT. 3. VENDOR SHALL OFFER GUARANTEE FOR THE PRODUCTS SUPPLIED FOR A PERIOD OF 18 MONTHS FROM THE DATE OF COMMISSIONING OR 24 MONTHS FROM THE DATE OF SUPPLY WHICHEVER IS EARLIER. COMMISSIONING SPARES FOR FUEL OIL SYSTEM CONTROL VALVES. REMARKS 1. While calculating the Quantity of Items for Commissioning spares, vendor shall round the number to the nearest higher whole number. MANDATORY SPARES FOR CONTROL VALVES PROCURED FOR OIL SYSTEM. GUARANTEE & WARRANTY: - 1. ALL MATERIALS SHALL BE DEFECT FREE AND SHALL BE REPLACEABLE FREE OF COST DURING GUARANTEE PERIOD. THE PERFORMANCE OF THE ITEMS SHALL BE GUARANTEED FOR A PERIOD OF 24 MONTHS FROM THE DATE OF SUPPLY OF 18 MONTHS FROM THE DATE OF COMMISSIONING, WHICHEVER IS EARLIER. PACKING REQ: - 1. ALL OPENINGS (FLUID, PNEUMATIC & ELECTRIC) SHALL BE FIRMLY CAPPED. 2. ITEM SHALL BE PACKED IN WOODEN BOXES WITH WATER PROOF UNDER COVER. 3. PACKING AND STRUTS SHALL BE USED TO ARREST ROLLING OF ITEMS AND TO AVOID TRANSIT DAMAGE. 4. LIMIT SWITCHES AND SUCH COMPONENTS SHALL BE ENCAPSULATED PROPERLY WITH THERMOCOLE. <u>B) TRIP VALVE FOR FUEL OIL SYSTEM</u> AS PER THE SPECIFICATION No.TOS:MEL:1350/00 ENCLOSURES:	

1.SPECIFICATION NO:TOS:MEL:1350/00.

REMARKS:

- 1.VENDOR TO FURNISH DIMENSIONAL DRAWING,FILLED IN DATA SHEETS Cv CALCULATION,HOOK UP & JB DIAGRAM ALONG WITH THE OFFER ITSELF.
- 2.VENDOR SHALL CONFIRM GUARANTEE FOR THE PRODUCTS SUPPLIED FOR A PERIOD OF 24 MONTHS FROM THE DATE OF SUPPLY OR 18 MONTHS FROM THE DATE OF COMMISSIONING WHICHEVER IS EARLIER.
- 3.VENDOR SHALL FOLLOW PAINTING SCHEDULE AS APPLICABLE

COMMISSIONING SPARES FOR FUEL OIL SYSTEM TRIP VALVES AND BURNER TRIP VALVES.

REMARKS

1. While calculating the quantity of Items for Commissioning spares, vendor shall round the number to the nearest higher whole number.

MANDATORY SPARES FOR TRIP VALVES PROCURED FOR OIL SYSTEM

REMARKS:

GUARANTEE & WARRANTY: -

1. ALL MATERIALS SHALL BE DEFECT FREE AND SHALL BE REPLACEABLE FREE OF COST DURING GUARANTEE PERIOD. THE PERFORMANCE OF THE ITEMS SHALL BE GUARANTEED FOR A PERIOD OF 24 MONTHS FROM THE DATE OF SUPPLY OF 18 MONTHS FROM THE DATE OF COMMISSIONING, WHICHEVER IS EARLIER

PACKING REQ: -

1. ALL OPENINGS (FLUID, PNEUMATIC & ELECTRIC) SHALL BE FIRMLY CAPPED.
2. ITEM SHALL BE PACKED IN WOODEN BOXES WITH WATER PROOF UNDER COVER.
3. PACKING AND STRUTS SHALL BE USED TO ARREST ROLLING OF ITEMS AND TO AVOID TRANSIT DAMAGE.
4. LIMIT SWITCHES AND SUCH COMPONENTS SHALL BE ENCAPSULATED PROPERLY WITH THERMOCOLE.

BHEL Quality Plan SQP:SD:07 Rev 00 to be followed

1.2 Financial: As per **Annexure C (Financial Soundness)**

1.3 Integrity Pact: **Applicable**

1.4 Bidder must not be admitted under Corporate Insolvency Resolution Process or Liquidation as on date, by NCLT or any adjudicating authority/authorities, and shall submit undertaking (Annexure-4) to this effect.

1.5 Customer Approval : **Applicable**

Explanatory Notes for the PQR:

- i. 'Supplied' in **PQR – 1.1** means, bidder should have delivered the tendered item. Bidder shall submit the relevant documents against the above PQRs inclusive of Purchase order (wherein PO no., date, etc. is legible) along with proof of supply (i.e. - Completion Certificate/ Copy of Invoices / LR Copies/ Store Receipt Vouchers/ Payment Advice etc.) in the respective attachments in their offer in support of PQR. The "Contract" referred in Technical PQR may be Rate Contract/ Framework Agreement/ Purchase Order/ Work Order.
- ii. Bidder to submit Audited Balance Sheet and Profit and Loss Account for the respective years as indicated against Financial Turnover **PQR – 1.2** above along with all annexures.
- iii. In case of audited Financial Statements have not been submitted for all the three years as indicated against Financial Turnover PQR above, then the applicable audited statements submitted by the bidders against the requisite three years, will be averaged for three years i.e. total divided by three.
- iv. If Financial Statements are not required to be audited statutorily, then instead of audited Financial Statements, Financial Statements are required to be certified by Chartered Accountant.
- v. Credentials furnished by the bidder against "PRE-QUALIFYING CRITERIA" shall be verified from the issuing authority for its authenticity. In case, any credential (s) is/are found to be spurious, offer of the bidder is liable to be rejected. BHEL reserves the right to initiate any further action as per extant guidelines for Suspension of Business Dealings as applicable in BHEL.

	vi. Price Bids of only those bidders shall be opened who stand qualified after compliance of QR – 1.1 to 1.5	
02	Scope of Supply: Supply of FUEL OIL CONTROL & TRIP VALVES & ACCESSORIES to Various project locations as per Annexure B on F.O.R. Destination Basis. Unloading of materials at Destination / Site shall be in BHEL's scope.	
03	PRICE BASIS: Price in INR should be quoted for F.O.R. DESTINATION SITE delivery to Various project locations as per Annexure B GSTIN : 33AAACB4146P2ZL	
04	TAXES & DUTIES: 4.1 The Supplier/Vendor shall pay all (save the specific exclusions as enumerated in this clause) taxes, fees, license, charges, deposits, duties, tools, royalty, commissions, other charges, etc. which may be levied on the input goods & services consumed and output goods & services delivered in course of his operations in executing the contract. In case BHEL is forced to pay any of such taxes/duties, BHEL shall have the right to recover the same from his bills or otherwise as deemed fit along with the applicable overheads @5% and interest on the total value (i.e. amount paid by BHEL + overhead). However, provisions regarding GST on output supply (goods/service) and TDS/TCS as per Income Tax Act shall be as per following clauses. 4.2 GST (Goods and Services Tax) 4.2.1 GST as applicable on output supply (goods/services) are excluded from Supplier/Vendor's scope; therefore, contractor's price/rates shall be exclusive of GST. Reimbursement of GST is subject to compliance of following terms and conditions. BHEL shall have the right to deny payment of GST and to recover any loss to BHEL on account of tax, interest, penalty etc. for non-compliance of any of the following condition. 4.2.2 The admissibility of GST, taxes and duties referred in this chapter or elsewhere in the contract shall be limited to direct transactions between BHEL & its Supplier/Vendor. BHEL shall not consider GST on any transaction other than the direct transaction between BHEL & its Supplier/Vendor. 4.2.3 Supplier/Vendor shall obtain prior written consent of BHEL before billing the amount towards such taxes. Where the GST laws permit more than one option or methodology for discharging the liability of tax/levy/duty, BHEL shall have the right to adopt the appropriate one considering the amount of tax liability on BHEL/Client as well as procedural simplicity with regard to assessment of the liability. The option chosen by BHEL shall be binding on the Contractor for discharging the obligation of BHEL in respect of the tax liability to the Supplier/Vendor. 4.2.4 Supplier/Vendor has to submit GST registration certificate of the concerned state. Supplier/Vendor also needs to ensure that the submitted GST registration certificate should be in active status during the entire contract period. 4.2.5 Supplier/Vendor has to issue Invoice/Debit Note/Credit Note indicating HSN/SAC code, Description, Value, Rate, applicable tax and other particulars in compliance with the provisions of relevant GST Act and Rules made thereunder. 4.2.6 Supplier/Vendor has to submit GST compliant invoice within the due date of invoice as per GST Law. In case of delay, BHEL reserves the right of denial of GST payment if there occurs any hardship to BHEL in claiming the input thereof. In case of goods, Supplier/Vendor has to provide scan copy of invoice & GR/LR/RR to BHEL before movement of goods starts to enable BHEL to meet its GST related compliances. Special care should be taken in case of month end transactions. 4.2.7 Supplier/Vendor has to ensure that invoice in respect of such services which have been provided/completed on or before end of the month should not bear the date later than last working day of the month in which services are performed. 4.2.8 Subject to other provisions of the contract, GST amount claimed in the invoice shall be released on fulfilment of all the following conditions by the Supplier/Vendor: -	

- a) Supply of goods and/or services have been received by BHEL.
- b) Original Tax Invoice has been submitted to BHEL.
- c) Supplier/Vendor has submitted all the documents required for processing of bill as per contract/ purchase order/ work order.
- d) In cases where e-invoicing provision is applicable, Supplier/Vendor is required to submit invoice in compliance with e-invoicing provisions of GST Act and Rules made thereunder.
- e) Supplier/Vendor has filed all the relevant GST return (e.g. GSTR-1, GSTR-3B, etc.) pertaining to the invoice submitted and submit the proof of such return along with immediate subsequent invoice. In case of final invoice/ bill, contractor has to submit proof of such return within fifteen days from the due date of relevant return.
- f) Respective invoice has appeared in BHEL's GSTR - 2A for the month corresponding to the month of invoice and in GSTR-2B of the month in which such invoices has been reported by the contractor along with status of ITC availability as "YES" in GSTR-2B. Alternatively, BG of appropriate value may be furnished which shall be valid at least one month beyond the due date of confirmation of relevant payment of GST on GSTN portal or sufficient security is available to adjust the financial impact in case of any default by the Supplier/Vendor.
- g) Supplier/Vendor has to submit an undertaking confirming the payment of all due GST in respect of invoices pertaining to BHEL.

4.2.9 Any financial loss arises to BHEL on account of failure or delay in submission of any document as per contract/purchase order/work order at the time of submission of Tax invoice to BHEL, shall be deducted from Supplier/Vendor's bill or otherwise as deemed fit.

4.2.10 TDS as applicable under GST law shall be deducted from Supplier/Vendor's bill.

4.2.11 Supplier/Vendor shall comply with the provisions of e-way bill wherever applicable. Further wherever provisions of GST Act permits, all the e-way bills, road permits etc. required for transportation of goods needs to be arranged by the contractor.

4.2.12 Supplier/Vendor shall be solely responsible for discharging his GST liability according to the provisions of GST Law and BHEL will not entertain any claim of GST/interest/penalty or any other liability on account of failure of Supplier/Vendor in complying the provisions of GST Law or discharging the GST liability in a manner laid down thereunder.

4.2.13 In case declaration of any invoice is delayed by the vendor in his GST return or any invoice is subsequently amended/alterd/deleted on GSTN portal which results in any adverse financial implication on BHEL, the financial impact thereof including interest/penalty shall be recovered from the Supplier/Vendor's due payment.

4.2.14 Any denial of input credit to BHEL or arising of any tax liability on BHEL due to non-compliance of GST Law by the Supplier/Vendor in any manner, will be recovered along with liability on account of interest and penalty (if any) from the payments due to the Supplier/Vendor.

4.2.15 In the event of any ambiguity in GST law with respect to availability of input credit of GST charged on the invoice raised by the contractor or with respect to any other matter having impact on BHEL, BHEL's decision shall be final and binding on the Supplier/Vendor.

4.2.16 Variation in Taxes & Duties:

Any upward variation in GST shall be considered for reimbursement provided supply of goods and services are made within schedule date stipulated in the contract or approved extended schedule for the reason solely attributable to BHEL. However downward variation shall be subject to adjustment as per actual GST applicability.

In case the Government imposes any new levy/tax on the output service/goods after price bid opening, the same shall be reimbursed by BHEL at actual. The reimbursement under this clause is restricted to the direct transaction between BHEL and its Supplier/Vendor only and within the contractual delivery period only.

In case any new tax/levy/duty etc. becomes applicable after the date of Bidder's offer but before opening of the price Bid, the Bidder/ Supplier/Vendor must convey its impact on his price duly substantiated by documentary evidence in support of the same before opening of price bid. Claim for any such impact after opening the price bid will not be considered by BHEL for reimbursement of tax or reassessment of offer.

4.3 Income Tax:

	TDS/TCS as applicable under Income Tax Act, 1961 or rules made thereunder shall be deducted/collected from Supplier/Vendor's bill. 4.4 Supplier HSN Code & Applicable GST % (To be filled by Supplier) _____	
05	MATERIAL DISPATCH CLEARANCE CERTIFICATE (MDCC): MDCC shall be issued by BHEL. No material shall be dispatched by supplier unless and until Material Dispatch Clearance Certificate (MDCC) issued by BHEL Site. In case any material is dispatched without MDCC and any loss is incurred by Supplier/Vendor for any reason whatsoever, BHEL shall not be responsible in any manner to compensate the supplier in this regard.	
06	INSPECTION / INSPECTION & TESTING AT SUPPLIERS WORKS: 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. BHEL reserves the right to inspect the material during manufacturing and also to get tested the material under dispatch from third party. The test results of third party test shall be final and binding on the Supplier/Vendor. BHEL will reserve the right to inspect/test the material during/after manufacturing at suppliers' works, and/or at BHEL Site. In case of rejection at any stage, Supplier/Vendor shall be liable to replace the materials at his own cost.	
07	DELIVERY: Delivery shall be as follows 1.MEL MAHAN: 120 days from Manufacturing clearance 2.Raigarh STPP: 150 days from Manufacturing clearance 3.APL RAIPUR: 180 days from Manufacturing clearance 4.MIRZAPUR MTEUPPL: 210 Days from Manufacturing clearance Package Details as per Annexure B . (including Manufacturing, Inspection, Packing, Forwarding and delivery at project site/Trichy stores). Note: Delivery period mentioned elsewhere in the GeM Bid document shall be ignored and the delivery period shall be as per this clause. NOTE: a) If the delivery of supply as detailed above gets delayed beyond the delivery period, the Supplier/Vendor shall request for a delivery extension and BHEL at its discretion may extend the Contract. However, if any 'Delivery extension' is granted to the Supplier/Vendor for completion of supply, due to backlog attributable to the Supplier/Vendor, then it shall be without prejudice to the rights of BHEL to impose LD for the delays attributable to the Supplier/Vendor. b) In case BHEL increase the quantity during currency of the contract in line with quantity variation clause (sl.no. of GeM bid), delivery extension shall be given for supply of these additional quantity.	
08	TRANSIT INSURANCE: Transit Insurance of material is in BHEL scope. BHEL shall insure the material at their cost for transportation.	
09	PAYMENT TERMS: Payment term shall be as below For Direct to Site despatch	

	1.For Non MSME suppliers, Payment term is 100% direct EFT payment after 90 days from the date of Site Acknowledgement (Against submission of GST invoice, Packing List, GeM invoice, copy of Site Acknowledged LR) with 5% PBG. 2.For MSE suppliers, Payment term is 100% direct EFT payment on 45th day from the date of Site Acknowledgement (Against submission of GST invoice, Packing List, GeM invoice, copy of Site Acknowledged LR) with 5% PBG. 3.For Medium Suppliers, Payment term is 100% direct EFT payment after 60 days from the date of Site Acknowledgement (Against submission of GST invoice, Packing List, GeM invoice, copy of Site Acknowledged LR) with 5% PBG. For BHEL Trichy stores Despatch 1. For Non MSME suppliers, Payment term is 100% direct EFT payment after 90 days from the Material Acceptance Date (Against submission of GST invoice, GeM invoice, LR copy, Last Movement e-Way Bill) with 5% PBG. 2. For MSE suppliers, Payment term is 100% direct EFT payment on 45th day from the Material Acceptance Date (Against submission of GST invoice, GeM invoice, LR copy, Last Movement e-Way Bill) with 5% PBG. 3. For Medium Suppliers, Payment term is 100% direct EFT payment after 60 days from the Material Acceptance Date (Against submission of GST invoice, GeM invoice, LR copy, Last Movement e-Way Bill)with 5% PBG.. However, GST amount shall be reimbursed in line with compliance to Cl. No. 4 (Taxes & Duties) above. b) NO INTEREST PAYABLE TO CONTRACTOR No interest shall be payable on the security deposit or any other money due to the Supplier.	
10	DOCUMENTS REQUIRED FOR BILL PROCESSING: The following documents are required to be sent with Material Dispatch/Billing Documents: • Original Tax Invoice (As per Cl. No. 4 above). • Copy of LR • Warranty Certificate • Duplicate for Transporter • Original Consignee copy of LR • Site acknowledged copy of LR • E Way bill • Bank Guarantee • GeM Invoice	
11	BANK DETAILS FOR EMD & PERFORMANCE SECURITY SUBMISSION: For Electronic Fund Transfer the details are as below: a) Name of the Beneficiary: Bharat Heavy Electricals Limited b) Bank Particulars : Name of the Company : BHARAT HEAVY ELECTRICALS LTD Address of the company : TRICHY Name of the bank :STATE BANK OF INDIA Bank : HEAVY ELECTRICALS, KAILASAPURAM BRANCH City : TRICHY Branch code :01363 Account Number : 10891588977 Account type :CC IFSC code - :SBIN0001363	

	MICR code : 620002004	
12	EARNEST MONEY DEPOSIT: Applicable / Not Applicable. 12.1 Every tender must be accompanied by the prescribed amount of Earnest Money Deposit (EMD) in the manner described herein- i. EMD shall be furnished before tender opening / along with the offer in full as per the amount indicated in the NIT. ii. The EMD up to an amount of Rs. is to be paid only in the following forms: a) Electronic Fund Transfer credited in BHEL account (before tender opening). b) Banker's cheque/ Pay order/ Demand draft, in favour of 'Bharat Heavy Electricals Limited' and payable at Regional HQ issuing the tender (along with offer). c) Fixed Deposit Receipt (FDR) issued by Scheduled Banks/ Public Financial Institutions as defined in the Companies Act (FDR should be in the name of the Contractor, a/c BHEL marking lien in favour of BHEL) (along with offer). The Fixed Deposit in such cases shall be valid for a period of 45 (forty-five) days beyond the final bid validity period. d) Bank Guarantee from any of the Scheduled Banks. In such cases shall be valid for a period of 45 (forty-five) days beyond the final bid validity period. e) Insurance Surety Bonds. In case the EMD is more than Rs. Two lakh and in case of foreign bidders, it may be in the form of a bank guarantee (in equivalent Foreign Exchange amount, in case of foreign bidders) issued/ confirmed from any of the scheduled commercial bank in India in the prescribed format. The EMD shall remain valid for a period of 45 (forty-five) days beyond the final bid validity period. iii. No other form of EMD remittance shall be acceptable to BHEL. 12.2 EMD by the Bidder will be forfeited as per NIT conditions, if: i. The bidder withdraws or amends its/his tender or impairs or derogates from the tender in any respect within the period of validity of the tender or if the successful bidder fails to furnish the required performance security within the specified period mentioned in the Tender. ii. EMD by the Bidder shall be withheld in case any action on the tenderer is envisaged under the provisions of extant "Guidelines on Suspension of business dealings with suppliers/ contractors" and shall be forfeited in case of suspension 12.3 Subject to Clause 12.2 above, EMD of the unsuccessful bidders shall be returned at the earliest after expiry of the final bid validity period and latest by the 30th day after the award of the contract. However, in case of two packet or two stage bidding, EMD of unsuccessful bidders during first stage i.e., technical evaluation etc. shall be returned within 30 days of declaration of result of first stage i.e. technical evaluation etc. 12.4 EMD of successful Bidder shall be refunded on conclusion of the order/ receipt of a performance security as mentioned in NIT. 12.5 EMD shall not carry any interest. 12.6 MSE / KVIC / ACASH / WDO / Coir Board / TRIFED / Kendriya Bhandar / Turnover above 500 Cr / BIS License holders / Central PSU / State PSU / Startups as recognized by Department for Promotion of Industry and Internal Trade (DPIIT) shall be exempted from payment of EMD.	
13	PERFORMANCE SECURITY: Applicable / Not Applicable 13.1 Successful bidder awarded the contract should deposit 5 % of the contract value as performance security towards fulfilment of all contractual obligations, including warranty obligations. 13.2 Performance Security is to be furnished within 14 days after issuance of Contract/PO and should remain valid for a period of 60 (sixty) days beyond the date of completion of all contractual obligations of the Supplier/Vendor, including warranty obligations. 13.3 Modes of deposit: a) Performance security may be furnished in the following forms:	

	i. Local cheques of Scheduled Banks (subject to realization)/ Pay Order/Demand Draft/ Electronic Fund Transfer in favour of 'Bharat Heavy Electricals Limited' and payable at Regional HQ ii. Bank Guarantee from Scheduled Banks / Public Financial Institutions as defined in the Companies Act. The Bank Guarantee should be in the prescribed format of BHEL. iii. Fixed Deposit Receipt (FDR) issued by Scheduled Banks / Public Financial Institutions as defined in the Companies Act (FDR should be in the name of the Contractor, a/c BHEL). iv. Securities available from Indian Post offices such as National Savings Certificates, Kisan Vikas Patras etc. (held in the name of Contractor furnishing the security and duly endorsed/ hypothecated/ pledged, as applicable, in favour of BHEL). v. Insurance Surety Bond. Note: BHEL will not be liable or responsible in any manner for the collection of interest or renewal of the documents or in any other matter connected therewith. b) In case of GTE tenders, the performance security should be in the same currency as the contract and must conform to Uniform Rules for Demand Guarantees (URDG 758) - an international convention regulating international securities. 13.4 The performance security will be forfeited and credited to BHEL's account in the event of a breach of contract by the Supplier/Vendor as provided herein or elsewhere in the Contract/PO. 13.5 Performance Security shall be refunded to the Supplier/Vendor without interest, after the Supplier/Vendor duly performs and completes the contract in all respects but not later than 60(sixty) days of completion of all such obligations including the warranty under the contract. 13.6 The Performance Security shall not carry any interest. 13.7 There is no exemption of Performance security deposit submission for MSE Vendors.	
14	BREACH OF CONTRACT, REMEDIES AND TERMINATION: 14.1 The following shall amount to breach of contract: I. Non-supply of material/ non-completion of work by the Supplier/Vendor within scheduled delivery/ completion period as per contract or as extended from time to time. II. The Supplier/Vendor fails to perform as per the activity schedule and there are sufficient reasons even before expiry of the delivery/ completion period to justify that supplies shall be inordinately delayed beyond contractual delivery/ completion period III. The Supplier/Vendor delivers equipment/ material not of the contracted quality. IV. The Supplier/Vendor fails to replace the defective equipment/ material/ component as per guarantee clause. V. Withdrawal from or abandonment of the work by the Supplier/Vendor before completion as per contract. VI. Assignment, transfer, subletting of Contract by the Supplier/Vendor without BHEL's written permission resulting in termination of Contract or part thereof by BHEL. VII. Non-compliance to any contractual condition or any other default attributable to Supplier/Vendor. VIII. Any other reason(s) attributable to Vendor towards failure of performance of contract. In case of breach of contract, BHEL shall have the right to terminate the Purchase Order/ Contract either in whole or in part thereof without any compensation to the Supplier/Vendor. IX. Any of the declarations furnished by the contractor at the time of bidding and/ or entering into the contract for supply are found untruthful and such declarations were of a nature that could have resulted in non-award of contract to the contractor or could expose BHEL and/ or Owner to adverse consequences, financial or otherwise. X. Supplier/Vendor is convicted of any offence involving corrupt business practices, antinational activities or any such offence that compromises the business ethics of BHEL, in violation of the Integrity Pact entered into with BHEL has the potential to harm the overall business of BHEL/ Owner. Note- Once BHEL considers that a breach of contract has occurred on the part of Supplier/Vendor, BHEL shall notify the Supplier/Vendor by way of notice in this regard. Contractor shall be given an opportunity to rectify the reasons causing the breach of contract within a period of 14 days.	

In case the contractor fails to remedy the breach, as mentioned in the notice, to the satisfaction of BHEL, BHEL shall have the right to take recourse to any of the remedial actions available to it under the relevant provisions of contract.

14.2 Remedies in case of Breach of Contract.

- i. Wherein the period as stipulated in the notice issued under clause 14.1 has expired and Supplier/Vendor has failed to remedy the breach, BHEL will have the right to terminate the contract on the ground of "Breach of Contract" without any further notice to contractor.
- ii. Upon termination of contract, BHEL shall be entitled to recover an amount equivalent to 10% of the Contract Value for the damages on account of breach of contract committed by the Supplier/Vendor. This amount shall be recovered by way of encashing the security instruments like performance bank guarantee etc available with BHEL against the said contract. In case the value of the security instruments available is less than 10% of the contract value, the balance amount shall be recovered from other financial remedies (i.e. available bills of the Supplier/Vendor, retention amount, from the money due to the Supplier/Vendor etc. with BHEL) or the other legal remedies shall be pursued.
- iii. wherever the value of security instruments like performance bank guarantee available with BHEL against the said contract is 10% of the contract value or more, such security instruments to the extent of 10% contract value will be encashed. In case no security instruments are available or the value of the security instruments available is less than 10% of the contract value, the 10% of the contract value or the balance amount, as the case may be, will be recovered in all or any of the following manners:
- iv. In case the amount recovered under sub clause (a) above is not sufficient to fulfil the amount recoverable then; a demand notice to deposit the balance amount within 30 days shall be issued to Supplier/Vendor.
- v. If Supplier/Vendor fails to deposit the balance amount within the period as prescribed in demand notice, following action shall be taken for recovery of the balance amount:
 - a) from dues available in the form of Bills payable to defaulted Supplier/Vendor against the same contract.
 - b) If it is not possible to recover the dues available from the same contract or dues are insufficient to meet the recoverable amount, balance amount shall be recovered from any money(s) payable to Supplier/Vendor under any contract with other Units of BHEL including recovery from security deposits or any other deposit available in the form of security instruments of any kind against Security deposit or EMD.
- vi. In-case recoveries are not possible with any of the above available options, Legal action shall be initiated for recovery against defaulted supplier/Vendor.
- vii. It is an agreed term of contract that this amount shall be a genuine pre-estimate of damages that BHEL would incur in completion of balance contractual obligation of the contract through any other agency and BHEL will not be required to furnish any other evidence to the Supplier/Vendor for the purpose of estimation of damages.
- viii. In addition to the above, imposition of liquidated damages, debarment, termination, de-scoping, short-closure, etc., shall be applied as per provisions of the contract.

Note:

1) The defaulting Supplier/Vendor shall not be eligible for participation in any of the future enquiries floated by BHEL to complete the balance work. The defaulting contractor shall mean and include:

- (a) In case defaulted Supplier/Vendor is the Sole Proprietorship Firm, any Sole Proprietorship Firm owned by same Sole Proprietor.
- (b) In case defaulted Supplier/Vendor is The Partnership Firm, any firm comprising of same partners/ some of the same partners; or sole proprietorship firm owned by any partner(s) as a sole proprietor.

LD against delay in executed supply in case of Termination of Contract:

LD against delay in executed supply shall be calculated in line with LD clause no. 18.0 below, for the delay attributable to Supplier/Vendor. For limiting the maximum value of LD, contract value shall be taken as Executed Value of supply till termination of contract.

Method for calculation of "LD against delay in executed supply in case of termination of contract" is given below.

- i. Let the time period from scheduled date of start of supply till termination of contract excluding the period of Hold (if any) not attributable to contractor = T1

	ii. Let the value of executed supply till the time of termination of contract= X iii. Let the Total Executable Value of supply for which inputs/fronTS were made available to Supplier/Vendor and were planned for execution till termination of contract = Y iv. Delay in executed supply attributable to Supplier/Vendor i.e. $T2=[1-(X/Y)] \times T1$ v. LD shall be calculated in line with LD clause (clause 18.0) of the Contract for the delay attributable to Supplier/Vendor taking "X" as Contract Value and "T2" as period of delay attributable to Supplier/Vendor.																
15	BILL TO ADDRESS: BHARAT HEAVY ELECTRICALS LIMITED HIGH PRESSURE BOILER PLANT,TIRUCHIRAPALLI - 620 014 TAMIL NADU - INDIA. GST: 33AAACB4146P2ZL SHIP TO ADDRESS: To be intimated Later																
16	GUARANTEE/WARRANTY: Guarantee period for supply of materials covered in the enquiry shall be for a period of 24 months from the date of supply (calendar months from the date of last dispatch) or 18 months from the date of commissioning, whichever is earlier. No Deviation is permitted. If still vendor offered any deviation on the Guarantee / warranty period, it may lead to rejection of offer.																
17	MICRO AND SMALL ENTERPRISES (MSE): Any Bidder falling under MSE category shall furnish the following details & submit documentary evidence/ Govt. Certificate etc. in support of the same along with their techno-commercial offer. <table><tr><td>Type under MSE</td><td>UDYAM No</td><td>SC/ST Owned</td><td>Women Owned</td><td>Others (Excluding SC/ST/Women)</td></tr><tr><td>Micro</td><td></td><td></td><td></td><td></td></tr><tr><td>Small</td><td></td><td></td><td></td><td></td></tr></table> Note: If the bidder does not furnish the above, offer shall be processed construing that the bidder is not falling under MSE category. a) MSE suppliers can avail the intended benefits in respect of the procurements related to the Goods and Services only (Definition of Goods and Services as enumerated by Govt. of India vide Office Memorandum F. No. 21(8)/2011-MA dtd. 09/11/2016 office of AS & DC, MSME) only if they submit along with the offer, attested copies of either Udyam Registration. Date to be reckoned for determining the deemed validity will be the last date of Technical Bid submission. Non-submission of supporting document in GeM portal will lead to consideration of their bids at par with other bidders. No benefits shall be applicable for this enquiry if the above required documents are not uploaded at the time of bid submission. Documents submitted by the bidder shall be verified by BHEL for rendering the applicable benefits.	Type under MSE	UDYAM No	SC/ST Owned	Women Owned	Others (Excluding SC/ST/Women)	Micro					Small					
Type under MSE	UDYAM No	SC/ST Owned	Women Owned	Others (Excluding SC/ST/Women)													
Micro																	
Small																	
18	LIQUIDATED DAMAGE: Liquidated Damages, wherever referred under this Tender/Agreement, shall mean and refer to the damages, not in the nature of penalty, which the contractor agrees to pay in the event of delay in delivery of supplies, breach of contract etc. as the case may be. Liquidated Damages leviable upon the Supplier/Vendor is a sum which is agreed by the parties as a reasonable and genuine pre-estimate of damages which will be suffered by BHEL on account of delay/breach on the part of the Supplier/Vendor. If the Seller/Service Provider fails to deliver any or all of the Goods/Services within the original/re-fixed delivery period(s) specified in the contract/PO, the Buyer/BHEL will be entitled to deduct/recover the Liquidated Damages for the delay, unless covered under Force Majeure conditions aforesaid, @ 0.5% of the contract value of delayed quantity per week or part of the week of delayed period as pre-estimated damages not exceeding 10% of the contract value of delayed quantity without any controversy/dispute of any sort whatsoever. LD shall be reckoned from the Contract delivery date to material receipt date. Material receipt date means the following																

	Direct to Site (DTS)- Site Acknowledgement date Dispatch to BHEL Trichy Stores- Vehicle Entry date													
19	INTEGRITY PACT (IP): Applicable / Not Applicable a) IP is a tool to ensure that activities and transactions between the Company and its Bidders/ Supplier/Vendor are handled in a fair, transparent and corruption free manner. Following Independent External Monitors (IEMs) on the present panel have been appointed by BHEL with the approval of CVC to oversee implementation of IP in BHEL. <table border="1"> <tr> <th>Sl No</th><th>IEM</th><th>E Mail</th></tr> <tr> <td>1</td><td>Shri Otem Dai, IAS (Retd.)</td><td>iem1@bhel.in</td></tr> <tr> <td>2</td><td>Shri Bishwamitra Pandey, IRAS (Retd.)</td><td>iem2@bhel.in</td></tr> <tr> <td>3</td><td>Shri Mukesh Mittal, IRS (Retd.)</td><td>iem3@bhel.in</td></tr> </table> b) The IP as enclosed with the tender is to be submitted (duly signed by authorized signatory) along with techno-commercial bid (Part-I, in case of two/ three part bid). Only those bidders who have entered into such an IP with BHEL would be competent to participate in the bidding. In other words, entering into this Pact would be a preliminary qualification. c) Please refer Section-8 of IP for Role and Responsibilities of IEMs. In case of any complaint arising out of the tendering process, the matter may be referred to any of the above IEM(s). All correspondence with the IEMs shall be done through email only. Note: <i>No routine correspondence shall be addressed to the IEM (phone/ post/ email) regarding the clarifications, time extensions or any other administrative queries, etc. on the tender issued. All such clarification/ issues shall be addressed directly to the tender issuing (procurement) department's officials whose contact details are as per Clause no. 21 below.</i>	Sl No	IEM	E Mail	1	Shri Otem Dai, IAS (Retd.)	iem1@bhel.in	2	Shri Bishwamitra Pandey, IRAS (Retd.)	iem2@bhel.in	3	Shri Mukesh Mittal, IRS (Retd.)	iem3@bhel.in	
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2	Shri Bishwamitra Pandey, IRAS (Retd.)	iem2@bhel.in												
3	Shri Mukesh Mittal, IRS (Retd.)	iem3@bhel.in												
20	PREFERENCE TO MAKE IN INDIA: For this procurement, the local content to categorize a Supplier/Vendor as a Class I local supplier/ Class II local Supplier/Non-Local Supplier and purchase preferences 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 GeM Bid, the same shall be applicable even if issued after issue of this GeM Bid, but before opening of Part-II bids against this GeM Bid. 23.1 Compliance to Restrictions under Rule 144 (xi) of GFR 2017: I. Any bidder from a country which shares a land border with India will be eligible to bid in this tender only if the bidder is registered with the Competent Authority. The Competent Authority for the purpose of this Clause shall be the Registration Committee constituted by the Department for Promotion of Industry and Internal Trade (DPIIT). II. "Bidder" (including the term 'tenderer', 'consultant' or 'service provider' in certain contexts) means any person or firm or company, including any member of a consortium or joint venture (that is an association of several persons, or firms or companies), every artificial juridical person not falling in any of the descriptions of bidders stated hereinbefore, including any agency branch or office controlled by such person, participating in a procurement process. III. "Bidder from a country which shares a land border with India" for the purpose of this Clause means: - - An entity incorporated established or registered in such a country; or - A subsidiary of an entity incorporated established or registered in such a country; or - An entity substantially controlled through entities incorporated, established or registered in such a country; or - An entity whose beneficial owner is situated in such a country; or - An Indian (or other) agent of such an entity; or - A natural person who is a citizen of such a country; or - A consortium or joint venture where any member of the consortium or joint venture falls under any of the above.													

	IV. The beneficial owner for the purpose of (III) above will be as under: 1. In case of a company or Limited Liability Partnership, the beneficial owner is the natural person(s), who, whether acting alone or together or through one or more juridical person, has a controlling ownership interest or who exercises control through other means. Explanation a. "Controlling ownership interest" means ownership of or entitlement to more than twenty-five per cent of shares or capital or profits of the company. b. "Control" shall include the right to appoint majority of the directors or to control the management or policy decisions including by virtue of their shareholding or management rights or shareholders agreements or voting agreements. 2. In case of a partnership firm, the beneficial owner is the natural person(s) who, whether acting alone or together, or through one or more juridical person, has ownership of entitlement to more than fifteen percent of capital or profits of the partnership. 3. In case of an unincorporated association or body of individuals, the beneficial owner is the natural person(s), who, whether acting alone or together, or through one or more juridical person has ownership of or entitlement to more than fifteen percent of the property or capital or profits of the such association or body of individuals. 4. Where no natural person is identified under (1) or (2) or (3) above, the beneficial owner is the relevant natural person who holds the position of senior managing official; 5. In case of a trust, the identification of beneficial owner(s) shall include identification of the author of the trust, the trustee, the beneficiaries with fifteen percent or more interest in the trust and any other natural person exercising ultimate effective control over the trust through a chain of control or ownership. (i) The bidder shall provide undertaking for their compliance to this Clause, in the format provided in Annexure-13. (ii) Registration of the bidder with Competent Authority should be valid at the time of submission of bids and at the time of acceptance of the bids	
21	Settlement of Dispute: If any dispute or difference of any kind whatsoever shall arise between BHEL and the Supplier/Vendor, arising out of the contract for the performance of the work whether during the progress of contract termination, abandonment or breach of the contract, it shall in the first place referred to Designated Engineer for amicable resolution by the parties. Designated Engineer (to be nominated by BHEL for settlement of disputes arising out of the contract) who within 60 days after being requested shall give written notice of his decision to the contractor. Save as hereinafter provided, such decision in respect of every matter so referred shall forthwith be given effect to by the Supplier/Vendor who shall proceed with the work with all due diligence, whether he or BHEL desires to resolve the dispute as hereinafter provided or not. If after the Designated Engineer has given written notice of this decision to the party and no intention to pursue the dispute has been communicated to him by the affected party within 30 days from the receipt of such notice, the said decision shall become final and binding on the parties. In the event the Supplier/Vendor being dissatisfied with any such decision or if amicable settlement cannot be reached then all such disputed issues shall be resolved through conciliation in terms of the BHEL Conciliation Scheme 2018 as per Clause 21.1 21.1 Conciliation: Any dispute, difference or controversy of whatever nature howsoever arising under or out of or in relation to this Agreement (including its interpretation) between the Parties, and so notified in writing by either Party to the other Party (the "Dispute") shall, in the first instance, be attempted to be resolved amicably in accordance with the conciliation procedure as per BHEL Conciliation Scheme 2018. The proceedings of Conciliation shall broadly be governed by Part-III of the Arbitration and Conciliation Act 1996 or any statutory modification thereof and as provided in - "Procedure for conduct of conciliation proceedings" (as available in www.bhel.com)). Note: Ministry of Finance has issued OM reference No. 1/2/24 dated 03.06.2024 regarding "Guidelines for Arbitration and Mediation in Contracts of Domestic Public Procurement. In the said OM it has been recommended that Government departments/ Entities/agencies are to encourage mediation under the	

Mediation Act, 2023. The said Act has not yet been notified by the Government. Therefore, the clause "Settlement of Disputes" shall be modified accordingly as and when the Mediation Act 2023 gets notified.

21.2 ARBITRATION:

21.2.1 Except as provided elsewhere in this Contract, in case Parties are unable to reach amicable settlement (whether by Conciliation to be conducted as provided in Clause 14.1 herein above or otherwise) in respect of any dispute or difference; arising out of the formation, breach, termination, validity or execution of the Contract; or, the respective rights and liabilities of the Parties; or, in relation to interpretation of any provision of the Contract; or, in any manner touching upon the Contract (hereinafter referred to as the 'Dispute'), then, either Party may, refer the disputes to **Madras High Court, Arbitration Centre (MHCAC)** and such dispute to be adjudicated by Sole Arbitrator appointed in accordance with the Rules of said Arbitral Institution.

21.2.2 A party willing to commence arbitration proceeding shall invoke Arbitration Clause by giving notice to the other party in terms of section 21 of the Arbitration & Conciliation Act, 1996 (hereinafter referred to as the 'Notice') before referring the matter to arbitral institution. The Notice shall be addressed to the Head of the Unit, BHEL, executing the Contract and shall contain the particulars of all claims to be referred to arbitration with sufficient detail and shall also indicate the monetary amount of such claim including interest, if any.

21.2.3 After expiry of 30 days from the date of receipt of aforesaid notice, the party invoking the Arbitration shall submit that dispute to the Arbitral Institution- **Madras High Court, Arbitration Centre (MHCAC)**- and that dispute shall be adjudicated in accordance with their respective Arbitration Rules. The matter shall be adjudicated by a Sole Arbitrator who shall necessarily be a Retd Judge having considerable experience in commercial matters to be appointed/nominated by the respective institution. The cost/expenses pertaining to the said Arbitration shall also be governed in accordance with the Rules of the respective Arbitral Institution. The decision of the party invoking the Arbitration for reference of dispute to **Madras High Court, Arbitration Centre (MHCAC)**- for adjudication of that dispute shall be final and binding on both the parties and shall not be subject to any change thereafter. The institution once selected at the time of invocation of dispute shall remain unchanged.

21.2.4 The fee and expenses shall be borne by the parties as per the Arbitral Institutional rules.

21.2.5 The Arbitration proceedings shall be in English language and the seat of Arbitration shall be **Trichy**.

21.2.6 Subject to the above, the provisions of Arbitration & Conciliation Act 1996 and any amendment thereof shall be applicable. All matters relating to this Contract and arising out of invocation of Arbitration clause are subject to the exclusive jurisdiction of the Court(s) situated at **Trichy**.

21.2.7 Notwithstanding any reference to the Designated Engineer or Conciliation or Arbitration herein, a. the parties shall continue to perform their respective obligations under the Contract unless they otherwise agree. Settlement of Dispute clause cannot be invoked by the Contractor, if the Contract has been mutually closed or 'No Demand Certificate' has been furnished by the Contractor or any Settlement Agreement has been signed between the Employer and the Contractor.

21.2.8 It is agreed that Mechanism of resolution of disputes through arbitration shall be available only in the cases where the value of the dispute is less than Rs. 10 Crores.

21.2.9 In case the disputed amount Claim, Counter claim including interest is Rs. 10 crores and above, the parties shall be within their rights to take recourse to remedies other than Arbitration, as may be available to them under the applicable laws after prior intimation to the other party. Subject to the aforesaid conditions, provisions of the Arbitration and Conciliation Act, 1996 and any statutory modifications or re-enactment thereof as amended from time to time, shall apply to the arbitration proceedings under this clause.

21.2.10 In case, multiple arbitrations are invoked (whether sub-judice or arbitral award passed) by any party to under this contract, then the cumulative value of claims (including interest claimed or awarded) in all such arbitrations shall be taken in account while arriving at the total claim in dispute for the subject contract for the purpose of clause 14.2.9. Disputes having cumulative value of less than 10 crores shall be resolved through arbitration and any additional dispute shall be adjudicated by the court of competent jurisdiction.

21.3 In case of Contract with Public Sector Enterprise (PSE) or a Government Department, the following shall be applicable:

	In the event of any dispute or difference relating to the interpretation and application of the provisions of commercial contract(s) between Central Public Sector Enterprises (CPSEs)/ Port Trusts inter se and also between CPSEs and Government Departments/Organizations (excluding disputes concerning Railways, Income Tax, Customs & Excise Departments), such dispute or difference shall be taken up by either party for resolution through AMRCD (Administrative Mechanism for Resolution)	
22	JURISDICTION Subject to clause 21 of this contract, the Civil Court having original Civil Jurisdiction at Tiruchirappalli, Tamilnadu shall alone have exclusive jurisdiction in regard to all matters in respect of the Contract. GOVERNING LAWS The contract shall be governed by the Law for the time being in force in the Republic of India.	
23	FORCE MAJEURE 23.1 "Force Majeure" shall mean circumstance which is: - beyond control of either of the parties to contract, - either of the parties could not reasonably have provided against the event before entering into the contract, - having arisen, either of the parties could not reasonably have avoided or overcome, and - not substantially attributable to either of the parties and Prevents the performance of the contract, such circumstances include but shall not be limited to: - War, hostilities, invasion, act of foreign enemies. - Rebellion, terrorism, revolution, insurrection, military or usurped power, or civil war. - Riot, commotion or disorder by persons other than the contractor's personnel and other employees of the contractor and sub-contractors. - Strike or lockout not solely involving the contractor's personnel and other employees of the contractor and sub-contractors. - Encountering munitions of war, explosive materials, ionizing radiation or contamination by radio-activity, except as may be attributable to the contractor's use of such munitions, explosives, radiation or radio- activity. - Natural catastrophes such as earthquake, tsunami, volcanic activity, hurricane or typhoon, flood, fire, cyclones etc. - Epidemic, pandemic etc. 23.2 The following events are explicitly excluded from Force Majeure and are solely the responsibilities of the non-performing party: a) any strike, work-to-rule action, go-slow or similar labour difficulty (b) late delivery of equipment or material (unless caused by Force Majeure event) and (c) economic hardship. 23.3 If either party is prevented, hindered or delayed from or in performing any of its obligations under the Contract by an event of Force Majeure, then it shall notify the other in writing of the occurrence of such event and the circumstances thereof within 15 (fifteen) days after the occurrence of such event. 23.4 The party who has given such notice shall be excused from the performance or punctual performance of its obligations under the Contract for so long as the relevant event of Force Majeure continues and to the extent that such party's performance is prevented, hindered or delayed. The Time for Completion shall be extended by a period of time equal to period of delay caused due to such Force Majeure event. 23.5 Delay or non-performance by either party hereto caused by the occurrence of any event of Force Majeure shall not - Constitute a default or breach of the Contract. - Give rise to any claim for damages or additional cost expense occasioned thereby, if and to the extent that such delay or non-performance is caused by the occurrence of an event of Force Majeure. 23.6 BHEL at its discretion may consider short closure of contract after 1 year of imposition of Force Majeure in line with extant guidelines. In any case, Supplier/Vendor cannot consider deemed short-closure after 1 year of imposition of Force Majeure.	
24	Non-Disclosure Agreement: The bidders shall enter into the Non-disclosure agreement separately. (Annexure 7 attached).	

25	Cartel Formation The Bidder declares that they will not enter into any illegal or undisclosed agreement or understanding, whether formal or informal with other Bidder(s). This applies in particular to prices, specifications, certifications, subsidiary contracts, submission or non-submission of bids or any other actions to restrict competitiveness or to introduce cartelization in the bidding process. In case, the Bidder is found having indulged in above activities, suitable action shall be taken by BHEL as per extant policies/ guidelines.							
26	Fraud Prevention Policy 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.							
27	Suspension of Business Dealings with Suppliers / Contractors: The offers of the bidders who are under suspension as also the offers of the bidders, who engage the services of the banned firms / principal / agents, shall be rejected. The list of banned firms is available on BHEL website www.bhel.com . If any bidder / supplier / contractor during pre-tendering / tendering / post tendering / award /execution / post-execution stage indulges in any act, including but not limited to, mal-practices, cheating, bribery, fraud or and other misconduct or formation of cartel so as to influence the bidding process or influence the price or tampers the tendering process or acts or omits in any manner which tantamount to an offence punishable under any provision of the Indian Penal Code, 1860(Bhartiya Nyaya Samhita 2023) or any other law in force in India, or does anything which is actionable under the Guidelines for Suspension of Business dealings, action may be taken against such bidder / supplier / contractor as per extant guidelines of the company available on www.bhel.com and / or under applicable legal provisions. Guidelines for suspension of business dealings is available in the webpage: http://www.bhel.com/vender_registration/vender.php .							
28	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 else bid shall be liable for rejection. In the event of any Technical or Commercial queries, the same may please be addressed to the following BHEL concerned before Part I opening- <table><tr><td>Akhil K Das (Manager/MM/BOI)</td><td>M Ramya (Senior Manager/MM/BOI)</td></tr><tr><td>Email : akhildas@bhel.in</td><td>Email: mramya@bhel.in</td></tr><tr><td>Phone: 04312574553</td><td>Phone: 04312571265</td></tr></table>	Akhil K Das (Manager/MM/BOI)	M Ramya (Senior Manager/MM/BOI)	Email : akhildas@bhel.in	Email: mramya@bhel.in	Phone: 04312574553	Phone: 04312571265	
Akhil K Das (Manager/MM/BOI)	M Ramya (Senior Manager/MM/BOI)							
Email : akhildas@bhel.in	Email: mramya@bhel.in							
Phone: 04312574553	Phone: 04312571265							
29	Order of Precedence: In the event of any ambiguity or conflict between the Tender Documents, the order of precedence shall be in the order below: a. Amendments/Clarifications/Corrigenda/Errata etc. issued in respect of the tender documents by BHEL. b. Buyer Added Bid Specific ATC c. GeM Bid Technical Conditions of Contract (TCC) d. GeM GTC							
30	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 even after negotiation. Any deviation from the conditions specified in TECHNO-COMMERCIAL TERMS AND CONDITIONS - Annexure-A, will lead to rejection of offer. 3. Any change in applicable rates of Tax or any other statutory levies (Direct / Indirect) or any new introduction of any levy by means of statute and its corresponding liability for the deliveries beyond the agreed delivery date for reasons not attributable to BHEL will be to vendors account. BHEL will not reimburse the same and any subsequent claim in this respect will be summarily rejected. 4. BHEL reserves its right to reject an offer due to unsatisfactory past performance by the respective Vendor in the execution of any contract to any BHEL project / Unit. 5. The offers of the bidders who are under suspension and also the offers of the bidders, who engage the services of the banned firms /principal/agents, shall be rejected. The list of banned firms is available on BHEL web site www.bhel.com .							

	6. Recovery / deduction as applicable as per Direct and Indirect taxes as notified by Govt. Of India from time to time will be made and information/certificate for such deduction/recoveries shall be provided by BHEL to the vendor.	
31	Enclosure: Annexure-1: Check List. Annexure-2: Offer forwarding letter / tender submission letter Annexure-3: No Deviation Certificate Annexure-4: Declaration regarding Insolvency/ Liquidation/ Bankruptcy Proceedings Annexure-5: Declaration by Authorized Signatory Annexure-6: Declaration by Authorized Signatory regarding Authenticity of submitted Documents Annexure-7: Non-Disclosure Certificate Annexure-8: Integrity Pact Annexure-9: Declaration confirming knowledge about Site Conditions Annexure-10: Declaration reg. Related Firms & their areas of Activities Annexure-11: Declaration for relation in BHEL Annexure-12: Declaration reg. minimum local content in line with revised public procurement Annexure-13: Declaration regarding compliance to Restrictions under Rule 144 (xi) of GFR 2017 Annexure-14: Bank Account Details for E-Payment Annexure-15: Power of Attorney for submission of tender. Annexure-16: Proforma of Bank Guarantee for Earnest Money. Annexure-17: Proforma of Bank Guarantee for Performance Security. Annexure-18: List of Consortium Bank.	
Signature and seal		

 429-024	PURCHASE / MM / FB ANNEXURE- 3: CERTIFICATE OF NO DEVIATION	
	Page	OF
	DATE	
DESCRIPTION	FUEL OIL CONTROL & TRIP VALVES & ACCESSORIES (GEM ENQUIRY:.....)	
SPECIFICATION	1.SPECIFICATION AND DATA SHEET:TOS: MEL : 1360/00 2.SPECIFICATION FOR SMART POSITIONER SPECIFICATION NO.TCI:317/rev08. 3.E, C&I Input - CI:MAHAN:ECI:CV/REV.01 4. SPECIFICATION NO:TOS:MEL:1350/00. 5. Annexure B- Item details	
QUALITY PLAN	<i>BHEL Quality Plan SQP:SD:07 Rev 00</i>	
DOC. REFERENCE	BHEL ENQ. CALLED FOR	FIRM'S ALTERNATE OFFER

1. We hereby confirm that we have not changed/ modified/materially altered any of the tender documents as downloaded from the website/ issued by BHEL and in case of such observance at any stage, it shall be treated as null and void.
2. We also hereby confirm that we have neither set any Terms and Conditions and nor have we taken any deviation from the Tender conditions together with other references applicable for the above referred GeM Bid.
3. We further confirm our unqualified acceptance to all Terms and Conditions, unqualified compliance to Tender Conditions.
4. We confirm to have submitted offer in accordance with tender instructions and as per aforesaid references.

STATION:

DATE:

SIGNATURE OF FIRMS REPRESENTATIVE

FIRM SEAL

NOTE:

1. Deviations should be taken only in the extreme case.
2. If necessary, use additional sheets with page control number

ANNEXURE- 4**UNDERTAKING**

(To be typed and submitted in the Letter Head of the Company/Firm of Bidder)

To,

(Write Name & Address of Officer of BHEL inviting the Tender)

Dear Sir/Madam,

Sub: DECLARATION REGARDING INSOLVENCY/ LIQUIDATION/ BANKRUPTCY PROCEEDINGS

Ref: GeM Bid Specification No:

I/We, _____ declare that,

I/We am/are not admitted under insolvency resolution process or liquidation under Insolvency and Bankruptcy Code, 2016, as amended from time to time or under any other law as on date, by NCLT or any adjudicating authority/authorities.

**Sign. of the AUTHORISED SIGNATORY
(With Name, Designation and Company seal)**

Place:

Date:

ANNEXURE – 6**DECLARATION BY AUTHORISED SIGNATORY OF BIDDER**

(To be typed and submitted in the Letter Head of the Company/Firm of Bidder)

To,

(Write Name & Address of Officer of BHEL inviting the Tender)

Dear Sir,

Sub : **Declaration by Authorised Signatory regarding Authenticity of submitted documents.**

Ref : 1) GeM Bid No. & Date:

2) All other pertinent issues till date

I/We, hereby certify that all the documents submitted by us in support of possession of "Qualifying Requirements" are true copies of the original and are fully compliant required for qualifying / applying in the bid and shall produce the original of same as and when required by Bharat Heavy Electricals Limited.

I / We hereby further confirm that no tampering is done with documents submitted in support of our qualification as bidder. I / We understand that at any stage (during bidding process or while executing the awarded contract) if it is found that fake / false / forged bid qualifying / supporting documents / certificates were submitted, it would lead to summarily rejection of our bid / termination of contract. BHEL shall be at liberty to initiate other appropriate actions as per the terms of the Bid / Contract and other extant policies of Bharat Heavy Electricals Limited.

Yours faithfully,

**(Signature, Date & Seal of Authorized
Signatory of the Bidder)**

Date:

ANNEXURE- 7**NON-DISCLOSURE CERTIFICATE**

(To be Typed & submitted in the Letter Head of the Company/Firm of Bidder)

I/We understand that BHEL **TRICHY** is committed to Information Security Management System as per their Information Security Policy.

Hence, I/We M/s

.....
who are submitting offer for providing services to BHEL **TRICHY** against GeM Bid No..... hereby undertake to comply with the following in line with Information Security Policy of **BHEL TRICHY**

- To maintain confidentiality of documents & information which shall be used during the execution of the Contract.
- The documents & information shall not be revealed to or shared with third party which shall not be in the business interest of BHEL **TRICHY**

**(Signature, date & seal of Authorized
Signatory of the bidder)**

Date:

ANNEXURE – 8**INTEGRITY PACT****Between**

Bharat Heavy Electricals Ltd. (BHEL), a company registered under the Companies Act 1956 and having its registered office at "BHEL House", Siri Fort, New Delhi - 110049 (India) hereinafter referred to as "The Principal", which expression unless repugnant to the context or meaning hereof shall include its successors or assigns of the ONE PART

and

_____, (description of the party along with address), hereinafter referred to as "The Bidder/ Contractor" which expression unless repugnant to the context or meaning hereof shall include its successors or assigns of the OTHER PART

Preamble

The Principal intends to award, under laid-down organizational procedures, contract/s for

_____. The Principal values full compliance with all relevant laws of the land, rules and regulations, and the principles of economic use of resources, and of fairness and transparency in its relations with its Bidder(s)/ Contractor(s).

In order to achieve these goals, the Principal will appoint Independent External Monitor(s), who will monitor the tender process and the execution of the contract for compliance with the principles mentioned above.

Section 1- Commitments of the Principal

1.1 The Principal commits itself to take all measures necessary to prevent corruption and to observe the following principles:-

- 1.1.1 No employee of the Principal, personally or through family members, will in connection with the tender for, or the execution of a contract, demand, take a promise for or accept, for self or third person, any material or immaterial benefit which the person is not legally entitled to.
- 1.1.2 The Principal will, during the tender process treat all Bidder(s) with equity and reason. The Principal will in particular, before and during the tender process, provide to all Bidder(s) the same information and will not provide to any Bidder(s) confidential/ additional information through

which the Bidder(s) could obtain an advantage in relation to the tender process or the contract execution.

1.1.3 The Principal will exclude from the process all known prejudiced persons.

1.2 If the Principal obtains information on the conduct of any of its employees which is a penal offence under the Indian Penal Code 1860 and Prevention of Corruption Act 1988 or any other statutory penal enactment, or if there be a substantive suspicion in this regard, the Principal will inform its Vigilance Office and in addition can initiate disciplinary actions.

Section 2 - Commitments of the Bidder(s)/ Contractor(s)

2.1 The Bidder(s)/ Contractor(s) commit himself to take all measures necessary to prevent corruption. He commits himself to observe the following principles during his participation in the tender process and during the contract execution.

2.1.1 The Bidder(s)/ Contractor(s) will not, directly or through any other person or firm, offer, promise or give to the Principal or to any of the Principal's employees involved in the tender process or the execution of the contract or to any third person any material, immaterial or any other benefit which he/ she is not legally entitled to, in order to obtain in exchange any advantage of any kind whatsoever during the tender process or during the execution of the contract.

2.1.2 The Bidder(s)/ Contractor(s) will not enter with other Bidder(s) into any illegal or undisclosed agreement or understanding, whether formal or informal. This applies in particular to prices, specifications, certifications, subsidiary contracts, submission or non-submission of bids or any other actions to restrict competitiveness or to introduce cartelization in the bidding process.

2.1.3 The Bidder(s)/ Contractor(s) will not commit any penal offence under the relevant Indian Penal Code (IPC) and Prevention of Corruption Act; further the Bidder(s)/ Contractor(s) will not use improperly, for purposes of competition or personal gain, or pass on to others, any information or document provided by the Principal as part of the business relationship, regarding plans, technical proposals and business details, including information contained or transmitted electronically.

2.1.4 Foreign Bidder(s)/ Contractor(s) shall disclose the name and address of agents and representatives in India and Indian Bidder(s)/ Contractor(s) to disclose their foreign principals or associates. The Bidder(s)/ Contractor(s) will, when presenting his bid, disclose any and all payments he has made, and is committed to or intends to make to agents, brokers or any other intermediaries in connection with the award of the contract.

2.2 The Bidder(s)/ Contractor(s) will not instigate third persons to commit offences outlined above or be an accessory to such offences.

2.3 The Bidder(s)/ Contractor(s) shall not approach the Courts while representing the matters to IEMs and will await their decision in the matter.

Section 3 - Disqualification from tender process and exclusion from future contracts

If the Bidder(s)/ Contractor(s), before award or during execution has committed a transgression through a violation of Section 2 above, or acts in any other manner such as to put his reliability or credibility in question, the Principal is entitled to disqualify the Bidder(s)/ Contractor(s) from the tender process or take action as per the separate "Guidelines on Banning of Business dealings with Suppliers/ Contractors", framed by the Principal.

Section 4 - Compensation for Damages

4.1 If the Principal has disqualified the Bidder from the tender process prior to the award according to Section 3, the Principal is entitled to demand and recover the damages equivalent Earnest Money Deposit/ Bid Security.

4.2 If the Principal has terminated the contract according to Section 3, or if the Principal is entitled to terminate the contract according to section 3, the Principal shall be entitled to demand and recover from the Contractor liquidated damages equivalent to 5% of the contract value or the amount equivalent to Security Deposit/ Performance Bank Guarantee, whichever is higher.

Section 5 - Previous Transgression

5.1 The Bidder declares that no previous transgressions occurred in the last 3 years with any other company in any country conforming to the anti-corruption approach or with any other Public Sector Enterprise in India that could justify his exclusion from the tender process.

5.2 If the Bidder makes incorrect statement on this subject, he can be disqualified from the tender process or the contract, if already awarded, can be terminated for such reason.

Section 6 - Equal treatment of all Bidders/ Contractors / Sub-contractors

6.1 The Principal will enter into agreements with identical conditions as this one with all Bidders and Contractors. In case of sub-contracting, the Principal contractor shall be responsible for the adoption of IP by his sub-contractors and shall continue to remain responsible for any default by his sub-contractors.

6.2 The Principal will disqualify from the tender process all bidders who do not sign this pact or violate its provisions.

Section 7 - Criminal Charges against violating Bidders/ Contractors /Subcontractors

If the Principal obtains knowledge of conduct of a Bidder, Contractor or Subcontractor, or of an employee or a representative or an associate of a Bidder, Contractor or Subcontractor which constitutes corruption, or if the Principal has substantive suspicion in this regard, the Principal will inform the Vigilance Office.

Section 8 -Independent External Monitor(s)

- 8.1 The Principal appoints competent and credible Independent External Monitor for this Pact. The task of the Monitor is to review independently and objectively, whether and to what extent the parties comply with the obligations under this agreement.
- 8.2 The Monitor is not subject to instructions by the representatives of the parties and performs his functions neutrally and independently. He reports to the CMD, BHEL.
- 8.3 The Bidder(s)/ Contractor(s) accepts that the Monitor has the right to access without restriction to all contract documentation of the Principal including that provided by the Bidder(s)/ Contractor(s). The Bidder(s)/ Contractor(s) will grant the monitor, upon his request and demonstration of a valid interest, unrestricted and unconditional access to his contract documentation. The same is applicable to Sub-contractor(s). The Monitor is under contractual obligation to treat the information and documents of the Bidder(s)/ Contractor(s) / Sub-contractor(s) with confidentiality in line with Non- disclosure agreement.
- 8.4 The Principal will provide to the Monitor sufficient information about all meetings among the parties related to the contract provided such meetings could have an impact on the contractual relations between the Principal and the Contractor. The parties offer to the Monitor the option to participate in such meetings.
- 8.5 The role of IEMs is advisory, would not be legally binding and it is restricted to resolving issues raised by an intending bidder regarding any aspect of the tender which allegedly restricts competition or bias towards some bidders. At the same time, it must be understood that IEMs are not consultants to the Management. Their role is independent in nature and the advice once tendered would not be subject to review at the request of the organization.
- 8.6 For ensuring the desired transparency and objectivity in dealing with the complaints arising out of any tendering process, the matter should be examined by the full panel of IEMs jointly as far as possible, who would look into the records, conduct an investigation, and submit their joint recommendations to the Management.
- 8.7 The IEMs would examine all complaints received by them and give their recommendations/ views to CMD, BHEL, at the earliest. They may also send their report directly to the CVO and the Commission,

in case of suspicion of serious irregularities requiring legal/ administrative action. IEMs will tender their advice on the complaints within 10 days as far as possible.

- 8.8 The CMD, BHEL shall decide the compensation to be paid to the Monitor and its terms and conditions.
- 8.9 IEM should examine the process integrity; they are not expected to concern themselves with fixing of responsibility of officers. Complaints alleging mala fide on the part of any officer of the organization should be looked into by the CVO of the concerned organisation.
- 8.10 If the Monitor has reported to the CMD, BHEL, a substantiated suspicion of an offence under relevant Indian Penal Code/ Prevention of Corruption Act, and the CMD, BHEL has not, within reasonable time, taken visible action to proceed against such offence or reported it to the Vigilance Office, the Monitor may also transmit this information directly to the Central Vigilance Commissioner, Government of India.
- 8.11 The number of Independent External Monitor(s) shall be decided by the CMD, BHEL.
- 8.12 The word 'Monitor' would include both singular and plural.

Section 9 - Pact Duration

- 9.1 This Pact shall be operative from the date IP is signed by both the parties till the final completion of contract for successful bidder and for all other bidders 6 months after the contract has been awarded. Issues like warranty / guarantee etc. should be outside the purview of IEMs.
- 9.2 If any claim is made/ lodged during currency of IP, the same shall be binding and continue to be valid despite the lapse of this pact as specified above, unless it is discharged/ determined by the CMD, BHEL.

Section 10 - Other Provisions

- 10.1 This agreement is subject to Indian Laws and jurisdiction shall be registered office of the Principal, i.e. New Delhi.
- 10.2 Changes and supplements as well as termination notices need to be made in writing. Side agreements have not been made.
- 10.3 If the Contractor is a partnership or a consortium, this agreement must be signed by all partners or consortium members.

- 10.4 Should one or several provisions of this agreement turn out to be invalid, the remainder of this agreement remains valid. In this case, the parties will strive to come to an agreement to their original intentions.
- 10.5 Only those bidders / contractors who have entered into this agreement with the Principal would be competent to participate in the bidding. In other words, entering into this agreement would be a preliminary qualification.

AKHIL
KIZHAKOODAN
DAS

Digitally signed by AKHIL
KIZHAKOODAN DAS
Date: 2025.01.17 14:57:51 +05'30'

For & On behalf of the Principal

(Office Seal)

Place-----

Date-----

Witness: **RAMYA**
M

Digitally signed
by RAMYA M
Date: 2025.01.17
15:15:59 +05'30'

(Name & Address) _____

For & On behalf of the Bidder/ Contractor

(Office Seal)

Witness: _____
(Name & Address) _____

ANNEXURE – 10**DECLARATION**

Date: _____

To,

(Write Name & Address of Officer of BHEL inviting the Tender)

Dear Sir/ Madam,

Sub: **Details of related firms and their area of activities**

Please find below details of firms owned by our family members that are doing business/ registered for same item with BHEL, _____ (NA, if not applicable)

1	Material Category/ Work Description	
	Name of Firm	
	Address of Firm	
	Nature of Business	
	Name of Family Member	
	Relationship	
2	Material Category/ Work Description	
	Name of Firm	
	Address of Firm	
	Nature of Business	
	Name of Family Member	
	Relationship	
...		

Note: I certify that the above information is true and I agree for penal action from BHEL in case any of the above information furnished is found to be false.

Regards,

(_____)

From: M/s _____

Supplier Code: _____

ANNEXURE – 11**DECLARATION FOR RELATION IN BHEL**

(To be typed and submitted in the Letter Head of the Company/Firm of Bidder failing which the offer of Bidder is liable to be summarily rejected)

To,

(Write Name & Address of Officer of BHEL inviting the Tender)

Dear Sir,

Sub: Declaration for relation in BHEL

Ref: 1) GeM Bid Specification No:

I/We hereby submit the following information pertaining to relation/relatives of Proprieter/Partner(s)/ Director(s) employed in BHEL

Tick (√) any one as applicable:

1. The Proprieter, Partner(s), Director(s) of our Company/Firm DO NOT have any relation or relatives employed in BHEL

OR

2. The Proprieter, Partner(s), or Director(s) of our Company/Firm HAVE relation/relatives employed in BHEL and their particulars are as below:

i.

ii.

**(Signature, Date & Seal of Authorized
Signatory of the Bidder)**

Note:

1. Attach separate sheet, if necessary.
2. If BHEL Management comes to know at a later date that the information furnished by the Bidder is false, BHEL reserves the right to take suitable against the Bidder/Contractor.

ANNEXURE – 12

**DECLARATION REGARDING MINIMUM LOCAL CONTENT IN LINE WITH
REVISED PUBLIC PROCUREMENT (PREFERENCE TO MAKE IN INDIA), ORDER 2017 DATED 04TH
JUNE, 2020 AND SUBSEQUENT ORDER(S)**

(To be typed and submitted in the Letter Head of the Entity/Firm providing certificate as applicable)

To,

(Write Name & Address of Officer of BHEL inviting the Tender)

Dear Sir,

Sub: Declaration reg. minimum local content in line with Public Procurement (Preference to Make in India), Order 2017-Revision, dated 04th June, 2020 and subsequent order(s).

Ref: 1) GeM Bid Specification No:
2) All other pertinent issues till date

We hereby certify that the items/works/services offered by..... *(specify the name of the organization here)* has a local content of _____ % and this meets the local content requirement for '**Class-I local supplier**' / '**Class II local supplier**' ** as defined in Public Procurement (Preference to Make in India), Order 2017-Revision dated 04.06.2020 issued by DPIIT and subsequent order(s).

The details of the location(s) at which the local value addition is made are as follows:

- | | |
|----------|----------|
| 1. _____ | 2. _____ |
| 3. _____ | 4. _____ |
| ... | |

Thanking you,
Yours faithfully,

**(Signature, Date & Seal of
Authorized Signatory of the Bidder)**

** - Strike out whichever is not applicable.

Note:

1. Bidders to note that above format, duly filled & signed by authorized signatory, shall be submitted along with the techno-commercial offer.
2. In case the bidder's quoted value is in excess of Rs. 10 crores, the authorized signatory for this declaration shall necessarily be the statutory auditor or cost auditor of the company (in the case of companies) or a practising cost accountant or practicing chartered accountant (in respect of suppliers other than companies).
3. In the event of false declaration, actions as per the above order and as per BHEL Guidelines shall be initiated against the bidder.

BANK GUARANTEE FOR PERFORMANCE SECURITY

Bank Guarantee No:

Date:

To

NAME

& ADDRESSES OF THE BENEFICIARY

Dear Sirs,

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 _____ through its Unit at.....(name of the Unit) having awarded to (Name of the Vendor / Contractor / Supplier) with its registered office at _____ 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.....dated valued at Rs..... (Rupees -----)/FC.....(in words.....) for (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,

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 ----- (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.

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. _____.

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.

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.

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.

WeBANK 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.

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.

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

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.

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

This Bank Guarantee shall be governed, construed and interpreted in accordance with the laws of India.

Courts at shall alone have exclusive jurisdiction over any matter arising out of or in connection with this Bank Guarantee

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.....
- b) This Guarantee shall be valid up to
- c) Unless the Bank is served a written claim or demand on or before _____ 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.

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.....

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

Note:

1. Units are advised that expiry of claim period may be kept 3-6 months after validity date. It may be ensured that the same is in line with the agreement/ contract entered with the Vendor.
2. The BG should be on Non-Judicial Stamp paper/e-stamp paper of appropriate value as per Stamp Act prevailing in the State(s) where the BG is submitted or is to be acted upon or the rate prevailing in the State where the BG was executed, whichever is higher. The Stamp Paper/e-stamp paper shall be purchased in the name of Vendor/Contractor/Supplier /Bank issuing the guarantee.

3. In line with the GCC, SCC or contractual terms, Unit may carry out minor modifications in the Standard BG Formats. If required, such modifications may be carried out after taking up appropriately with the Unit/Region's Law Deptt.
4. **In Case of Bank Guarantees submitted by Foreign Vendors-**
 - a. **From Nationalized/Public Sector / Private Sector/ Foreign Banks (BG issued by Branches in India)** can be accepted subject to the condition that the Bank Guarantee should be enforceable in the town/city or at nearest branch where the Unit is located i.e. Demand can be presented at the Branch located in the town/city or at nearest branch where the Unit is located.
 - b. **From Foreign Banks (wherein Foreign Vendors intend to provide BG from local branch of the Vendor country's Bank)**
 - b.1 In such cases, in the Tender Enquiry/ Contract itself, it may be clearly specified that Bank Guarantee issued by **any of the Consortium Banks only** will be accepted by BHEL. As such, Foreign Vendor needs to make necessary arrangements for issuance of Counter-Guarantee by Foreign Bank in favour of the Indian Bank's (BHEL's Consortium Bank) branch in India. It is advisable that all charges for issuance of Bank Guarantee/ counter-Guarantee should be borne by the Foreign Vendor. The tender stipulation should clearly specify these requirements.
 - b.2 **In case, Foreign Vendors intend to provide BG from Overseas Branch of our Consortium Bank** (e.g. if a BG is to be issued by SBI Frankfurt), the same is acceptable. However, the procedure at **sl.no. b.1** will required to be followed.
 - b.3 The BG issued may preferably be subject to Uniform Rules for Demand Guarantees (URDG) 758 (as amended from time to time). The BG Format provided to them should clearly specify the same.

ANNEXURE – 18**LIST OF CONSORTIUM BANK**

Sl. No.	NAME OF THE BANK
1	State Bank of India
2	Canara Bank
3	IDBI Bank Limited
4	ICICI Bank Limited
5	HDFC Bank Limited
6	Axis Bank
7	IndusInd Bank Limited
8	Bank of Baroda
9	Exim Bank
10	Indian Bank
11	Punjab National Bank
12	Union Bank of India
13	Yes Bank Limited
14	RBL Bank Ltd.
15	Standard Chartered Bank
16	Indian Overseas Bank
17	Kotak Mahindra Bank Limited
18	Federal Bank Limited
19	Hongkong and Shanghai Banking Corporation Ltd

ANNEXURE-C

Financial Soundness:

1. Indigenous suppliers shall submit Audited copies of annual reports (Balance Sheets), Profit & Loss statement for the last three years (or from date of incorporation whichever is less) and GST certificate.

Vendor signature and seal with Date