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CERTIFIED
ORGANISATION

वैज्ञानिक तथा औद्योगिक अनुसंधान परिषद्
राष्ट्रीय वांतरिक्ष प्रयोगशालाएं
Council of Scientific & Industrial Research
National Aerospace Laboratories

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Invitation for e-Bids / Notice Inviting e-Tender

Tender No. NAL/PUR/PR/069/2024

Date: 06-08-2024

CSIR - National Aerospace Laboratories (NAL), Bengaluru, Republic of India, is one of the premier research laboratories under aegis of Council of Scientific and Industrial Research (CSIR), an autonomous body under the Department of Scientific and Industrial Research, Government of India, New Delhi. CSIR-NAL is a Science and Knowledge based Research, Development and Consulting Organisation. It is internationally known for its excellence in Scientific Research in Aerospace Engineering.

The Director, CSIR-NAL invites e-bids from the Manufacturers, their distributors and Indian Agent of Foreign Principals, if any, for the procurement of the following Goods/Services for its day-to-day research

Sr. No.	Tender No.	Brief Description of material (s)	Qty.	Type of Bid	Mode of Procure.
1	NAL/PUR/PR/069/2024	01 Supply of 2 Inch Monel Control Valve for Oxygen Service (As per Specifications Attached)	1 (Nos)	Two Bid	Limited Tender Enquiry

1. E-Bids are invited through the electronic tendering process and the Tender Document can be downloaded from the e-Tender Central Public Procurement Portal (CPPP) of Government of India, <https://etenders.gov.in> **The submission of e-Bids will be only through the e-Tender portal <https://etenders.gov.in>. Bids will not be accepted in any other form.**
2. Interested bidders may obtain further information from the office of the:
Stores & Purchase Officer
Purchase Section
CSIR- National Aerospace Laboratories
NWTC-Belur, Bengaluru – 560037
Karnataka-India
Tel #: 080 25051548 / 1636
Email : mahesh_r@nal.res.in, sauravkumar@nal.res.in
3. The prospective bidders should adhere to deadlines specified in Tender Details Screen corresponding to this Tender on E-Tender portal <https://etenders.gov.in>.
4. **The Schedule for Submission of e-Bids and Opening of e-Bids is as follows:**

Date & Time of Submission of e-Bid		Date and Time of Opening of e-Bid	
Date	Time (IST)	Date	Time (IST)
26-08-2024	10.00 Hrs.	27-08-2024	11.00 Hrs.

shk



5. **Bid Security (BS) / Earnest Money Deposit (EMD):**

The bidders have to furnish/submit BID SECURING DECLARATION as per the FORMAT, in the name of "The Director, National Aerospace Laboratories, Bengaluru", without which the bid is liable to be rejected.

6. **Performance Security (PS)**

6.1 Performance Security shall be submitted by the successful bidder within 21 days of receipt of the notification of award / Purchase Order for the amount specified in the Purchase Order, valid for 60 days beyond the fulfilment of all contractual obligations including warranty.

6.2 The Performance security shall be in the form of a Bank guarantee (format shall be provided along with the Purchase Order) or stand-by Letter of Credit issued by a Nationalized / Scheduled bank located in India or a bank located abroad.

6.3 The performance security will be discharged by the Purchaser and returned to the Supplier not later than 60 days following the date of completion of the Supplier's performance obligations, including any warranty obligations. In the event of any contract amendment, the supplier shall, within 21 days of receipt of such amendment, furnish the amendment to the Performance Security, rendering the same valid for the duration of the contract, as amended for further period of 60 days thereafter.

7. **Open Tender enquiry:**

Only Local suppliers with prescribed local content as detailed in DIPPT Order No. P-45021/2/2017-PP (BE-II) dated 16th Sep, 2020 and subsequent orders issued by Ministry of Finance, Government of India from time to time, are eligible for bidding. Bidders must enclose the certificate declaring the local content of supplies as per the format.

8. **Global Tender Enquiry:**

Either the Indian Agent on behalf of the Foreign Principal or the Foreign Principal can bid directly in a tender but **not** both. However, the offer of the Indian Agent should also accompany the authorisation letter from their principal. To maintain sanctity of tendering system, one Indian Agent **cannot** represent **two** different foreign principals in one tender.

(a) In case of agents quoting in offshore procurements, on behalf of their principal manufacturers, one agent cannot represent two manufacturers or quote on their behalf in a particular tender enquiry.

One manufacturer can also authorize only one agent/ dealer. There can be only one bid from the following:

i)	The Principal manufacturer directly or through one Indian agent on his behalf; and
ii)	Indian/foreign agent on behalf of only one principal.

(b) Foreign bidders' must disclose the name and address of agent and representative in India and Indian bidders' must disclose their foreign principal or associates.

(c) If bidders' is Indian Agent of Foreign Principal, the following instruction shall be complied and as amended from time to time as on the date of issue of Tender:

i)	Bidders must necessarily comply with conditions of "Make in India" Order No. F-45021/2/2017-PP (BE-II) dated 16-Sep-2020 of Ministry of Commerce and Industry, Government of India, as amended from time to time on the date of issue of Tender.
ii)	The bidders shall comply with restrictions under Rule 144(xi) of the GFR 2017 related to restrictions on participation of Foreign bidders' and their Authorised Indian Agent/Dealer in terms of Order No.P-45021/112/2020-PP(BE-II) (E-43780) dated 24-Aug-2020 of the Ministry of Commerce and Industry, Department for Promotion of Industry and Internal Trade, as amended from time to time as on the date of issue of Order.

Note: Kindly refer to the first page of Notice Inviting Tender for tender type/mode of procurement and submit the bid accordingly

9. Documents comprising Single Bid

9.1 All the documents (**as applicable**) specified in **Annexure A to F** should be submitted in Single E-Bid along with BOQ- Price bid.

10 Documents comprising Two Bid (Technical Bid & Price Bid)

10.1 **Technical bid** should comprise documents (**as applicable**) specified in Annexure A, B, D, E and F along with the technical specification.

10.2 **Price Bid** should comprise of BOQ and Annexure-C.

11. The bids of those bidders failing to comply the following clauses will be summarily rejected.

(a) The bidders proposing to supply finished products directly/indirectly from bidders of Countries sharing the land border with India should submit copy of registration done with the Ministry of Home Affairs and Ministry of External Affairs.

(b) If the products supplied are not from bidders of Countries sharing Land border with India, the bidders should enclose a declaration

(c) The debarment of a bidders in this tender, if any.

Note: Kindly refer to the first page (NIT) for tender type (i.e. Open Tender Enquiry (OTE) / Global Tender Enquiry (GTE)) and submit your bid accordingly.

12. As per Govt. of India procurement policies,

a) The purchaser intends to give purchase/service preference to local supplies (Preference to Make in India) in case the cost of procurement is up to Rs.50.00 (fifty) lakhs.



- b) The procuring entity intends to give purchase/service preference to products/goods manufactured by micro, small and medium enterprises.
13. Bidders are requested to refer to the instructions regarding Procurement Policies for "Make in India", issued by Ministry of Commerce and Industry, Department of Industrial Policy and Promotion dated. 28-May-2018, and 4-Jun-2020 and guidelines as and when issued.
14. Printed conditions, if any, submitted along with the quotation shall not be binding on us.
15. Bidders have to certify that the quoted price is not higher than the price quoted with other Government Institution for similar specifications and quantity during the current financial year.
16. **Terms of Payment:**
- 16.1 The method and conditions of payment to be made to the Supplier under this Contract shall be as specified below:

I	Payment for Goods and Services supplied from abroad
	Payment of foreign currency portion shall be made in currency of the Contract by opening irrevocable Letter of Credit for 100% value of Purchase Order in the following manner:
(a)	On Shipment: Ninety (90%) percent of the Contract Price of the Goods shipped shall be paid through irrevocable letter of credit opened in favour of the Supplier in a bank in its country, upon submission of documents
(b)	On Acceptance: Ten (10%) percent of the Contract Price of Goods received shall be paid within thirty (30) days of receipt of the Goods and successful installation & commissioning, upon submission of claim supported by the acceptance certificate issued by the Purchaser along with the Performance security, if any.
(c)	The LC for 100% value of the contract shall be established after deducting the agency commission payable if any, to the Indian agent from the FOB / FCA value.
(d)	The LC will be confirmed at the suppliers cost, if requested specifically by the supplier. All bank charges abroad shall be to the account of the beneficiary i.e. supplier and all bank charges in India shall be to the account of the opener i.e. Purchaser. If LC is requested to be extended/ reinstated for reasons not attributable to the Purchaser, the charges thereof would be to the supplier's account. Payment of local currency portion shall be made in Indian Rupees within thirty (30) days of presentation of claim supported by a certificate from the Purchaser declaring that the Goods have been delivered and that all other contracted Services have been performed.
II	Payment for Goods and Services supplied from India
	The payment shall be made in Indian Rupees, as follows:
(a)	In case of supplies where installation & commissioning is not required 100% payment will be made within 30 days from receipt of items by purchaser as per purchase order contract.
(b)	In case of supplies where installation & commissioning is required
	On shipment : Eighty (80%) percent of the Contract Price shall be paid on receipt of the Goods and upon submission of the documents.
	On Acceptance: The remaining twenty (20%) percent of the Contract value shall be paid to the Supplier within thirty (30) days after the date of the acceptance certificate issued by the Purchaser subject to submission of performance

	security, if any.
	On Acceptance: The remaining twenty (20%) percent of the Contract value shall be paid to the Supplier within thirty (30) days after the date of the acceptance certificate issued by the Purchaser subject to submission of performance security, if any.
(c)	Payment of Indian Rupees may also be made by opening irrevocable inland Letter of Credit for 100% value of Purchase Order with stage payments mentioned in (a) or (b) above.
(d)	E-Payment: CSIR-NAL prefers to make Electronic Transfers (RTGS) through State Bank of India, NAL Branch, Bengaluru
III	Payment for Annual Maintenance Contract
The payment shall be made on quarterly basis after completion of the work/services and certification by the Indenting Officer	

Mandatory fields in Tax Invoice and Receipt Vouchers	
Invoice Number and Date	Name, address and GSTIN of the supplier
Shipping and billing Address	Customer Name & GSTIN [CSIR-NAL]
HSN Code/SAC Code	Place of Supply
Taxable value and discounts	Item details i.e. description, quantity (number), unit, the total value
Signature of the Supplier	Rate and amount of taxes i.e. CGST/SGST/IGST
Bank details	

- 16.2 While claiming the payment, the supplier should certify in the bill/invoice that the payment being claimed strictly in terms of the contract and all obligations on the part of the supplier for claiming the payment have been fulfilled as required under the contract.
- 16.3 Payment shall be made in currency as indicated in the contract.
- 16.4 All payments due under the Contract shall be paid after deduction of statutory levies at source (like Income Tax, etc.), wherever applicable.
17. Kindly, note **CSIR-NAL GST No.29AAATC2716R1ZB**. The bidders are requested to furnish their GST no. in their invoice, failing which NAL will not be able to make the timely payment.
18. Delivery Terms:

For Goods and Services supplied from abroad	FOB, FCA, Ex-Works, CIP, etc.
For Goods and Services supplied from abroad	FOR, Destination
Annual Maintenance Contract	On-site

19. Unsolicited / conditional / unsigned Quotations/Quotations received after the due date and time shall be summarily rejected. The bidders shall comply the terms and conditions of the tender, failing which, the offer shall be liable for rejection.
20. The prospective bidders are requested to refer to the Standard Terms and Conditions available on NAL Internet (www.nal.res.in) under the icon Tender-Purchase before formulating and submitting their bids.



21. The list of Commissioning Spare (Form-B) given in the Technical Specification has to be attached along with the price Bid.
22. The Director, CSIR-National Aerospace Laboratories (NAL), Bengaluru, India reserves the right to accept or reject any bids or accept all tenders either in part or in full or to split the order, or to annul the bidding process without assigning any reasons there for.

Thanking you,

Yours faithfully

**PPS / In-Charge (S&P)
For and on behalf of CSIR-NAL**

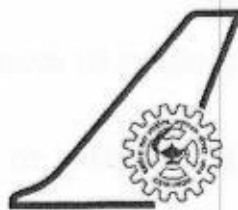
General Instructions to Bidders: -

01. For participation in e-procurement all bidders (including Foreign Bidders) need to enroll themselves on the CPP Portal (<https://www.etenders.gov.in>) Only enrolled/registered bidders in the CPP portal shall be eligible to participate in the e-tendering process.
02. Tender Documents may be downloaded from Central Public Procurement Portal <https://www.etenders.gov.in> Aspiring bidders who have not enrolled/ registered in e-procurement should enroll/ register before participating through the website <https://www.etenders.gov.in> The portal enrolment is free of cost. Bidders are advised to go through the instructions provided at '**Instructions for online Bid Submission**'.
03. Tenderers can access tender documents on the website (For searching in the NIC site <https://www.etenders.gov.in> kindly go to Tender Search option, select tender type and select 'Council of Scientific and Industrial Research' in organization tab and select NAL-Bengaluru-CSIR' in department type Thereafter, click on "Search" button to view all CSIR-NAL, Bengaluru tenders). Select the appropriate tender and fill them with all relevant information and submit the completed tender document online on the website <https://www.etenders.gov.in> as per the schedule.
04. The bidders should have Java 8 update 231 version-32 bit for uploading the bid in the CPP Portal.
05. Purchase Section, CSIR-NAL neither operates nor manages the CPP Portal where online bids are submitted and. Therefore, will not be responsible for any technical issues related to bid submission (viz., not being able to upload bid, blank/missing/part documents etc.). If the bid is incomplete on account of these issues, it will be treated as such and evaluated further. For any technical queries/issues related to online bid submission, the bidders must directly approach support service of CPP Portal as per the details given on the CPP website.



Specification

Specifications for the
Monel Control Valve
for
High Pressure Gaseous Oxygen



Propulsion Division
CSIR-National Aerospace Laboratories
Bengaluru

July - 2024

1.0 INTENT OF SPECIFICATION

This specification is intended to cover the design, manufacture, assembly, testing at vendor's works; delivery including packing, crating in road, freight, insurance, all taxes & duties, and other charges as applicable for the globe type control valve and all accessories specified in the scope of supply and as required for safe and trouble-free operation for the NAL Combustor Test Facilities, NWTC, NAL, Bangalore-560 037, Karnataka, India.

It is not the intent to completely specify all the details of design and construction herein. Nevertheless, the control valve shall conform to high standards of engineering, design, and workmanship in all respects and shall be capable of performing satisfactorily in continuous operation under the specified operating conditions.

2.0 SCOPE OF SUPPLY AND EXCLUSIONS

This specifications enclosed herewith covers the basic requirement of the design and supply of the control valve.

- a. Supply of the control valve with actuator and its accessories such as smart positioner, manual hand wheel, air filter regulator, nuts, bolts, etc. as specified in this specification and any other technical attachment sheet herein.
- b. Engineering and submission of documents as mentioned in clause 10.0
- c. Supply of commissioning spares as per FORM - B.
- d. Installation at the site is excluded.

3.0 CODES AND STANDARDS

The following codes and standards are for design, construction, testing & qualifications

ISA 75.01.01, 75.02, 75.03, 75.08.06, 75.11.01, 75.13, 75.19.01, 75.25.01 and 75.25.02

The ASME SB165 Monel, ASTM F1985-99 (2005)

ANSI B 16.34, B 16.5

BS 6755

OSHA

NEC

IEC

NEMA



4.0 VENDOR'S RESPONSIBILITY

Proper sizing and selection of valves with suitable capacity (C_v) and range ability for the process conditions specified in the data sheets. Sizing calculation shall be submitted with the offer.

Actuator to meet operational and shut-off differential pressure. Calculation, for selection to be given with the offer.

The specification indicates the materials of construction for various items like body, trim, packing, and other parts. However, this does not absolve the vendor of the responsibility for the proper selection of materials for wetted parts and accessories to be compatible with the process fluids and its operating conditions. The reasoning is to be given if deviates from specification.

Checking and proper treatment for noise and ensuring that the body velocity is within the permissible limits.

The control valve and its accessories to be supplied under this specification shall meet the guaranteed performance specified in the enclosed data sheets and specification sheet when operating at rated/specified conditions. The acceptance of the control valve and its accessories shall be subject to satisfying these parameters during the shop test at the vendor's works and /or at site installation in complete assembled condition. The vendor shall give a guarantee and warranty as per the clause 15.0

5.0 VALVE CONSTRUCTION

5.1 GENERAL

The control valve shall be supplied complete with an actuator and accessories (such as a smart positioner with position feedback, position transmitter, air filter regulator with pressure gauges, hand wheel, etc.) in assembled condition. Accessories shall be securely mounted and easily removable for maintenance works.

The control valve shall be provided with a valve stem travel indicator (0-100% graduation with open and close marking). The control valve on failure will move to a safe end position as per process requirements.

5.2 BODY

The valve body rating should be equal to or better than the flange rating specified in the datasheet. Castings shall be free from injurious blowholes, porosity shrinkage faults, cracks, and other faults. Repairs of any nature on such defects are not acceptable. Bonnets shall be of the same material as the valve body and integral or bolted-type construction. Threaded bonnets are not acceptable.

The flow direction shall be marked on the valve body.

The line size on which the valve is to be mounted is 2"

End connections

- a) Flanged end connections shall be as per ANSI B16.5
- b) Flanged face finish be serrated concentric to ANSI B 16.5

5.3 TRIM

The valve is sized based on being installed "flow tending to open". (Preferred).

The trim shall be of pressure-balanced

Guide bushing shall be of a sufficiently hard material to resist side thrust on the plug.

5.4 ACTUATOR

Linear actuator, piston/ diaphragm type, single or double acting, spring return, fail-safe to close position shall be used. The actuator shall be normally closed which will open on actuation.

Actuator sizing shall be such that it must be capable of generating power to stroke the valve through its full travel at 125% of maximum pressure drop condition within specified stroke time. The response time shall be ≤ 2 seconds for 2" valves from zero position to a specified position including 100% opening.

Nylon-reinforced neoprene shall be used as diaphragm material. The piston rod shall be of SS. Valve actuators shall be capable of operating at 50 C ambient continuously. Castings shall be of the type to suit individual area environments. The vendor shall guarantee that the size of the actuator is adequate to meet the operating thrust requirement for the control valve under extreme conditions. Calculations for the selection of actuator size shall be submitted along with the offer.

SS304L/ SS316L tubes of size $\frac{1}{4}$ " OD shall be used for pneumatic tubing. All the fittings shall be made of SS304L/ SS316L and double compression type.

The actuator shall be sized for maximum differential pressure. Actuator casting shall be of SS construction

In general, spring opposed diaphragm type actuator is preferred. The actuator casing and diaphragm shall be designed for a minimum, of twice the maximum pneumatic operating pressure.

The actuator shall be of a removable type for maintenance work.



6.0 Specifications for Electro-Pneumatic Control Valve

	Item	Details
1.	Type	Globe (With linear Characteristics)
2.	Operating	
	Medium	Gaseous Oxygen.
	Pressure inlet	30 – 145 bar (Operating), 150 bar (Max)
	Pressure Outlet	10 – 50 bar (Operating), 55 bar max
	Temperature	15 C (Min); 30 C (Nominal); 45 C (max)
3.	Flow rate:	Nominal: 4 kg/s for an inlet pressure of 40 bar and outlet pressure of 25 bar at a Valve opening of 90 % . The Cv calculation shall be done for the above flow and valve opening conditions
4.	Size	2"
5.	Actuation	Electro-pneumatically operated (Smart Positioner with Position feedback)
6.	Application	Control
7.	Leakage class	Class VI
8.	End Connections	Flanged end Connection to ANSI B16.5
9.	Bonnet (globe valve)	Bolted or screwed to the body with spring-energized seals (Helicoflex, Enerseal, etc.)
10.	Stem	Rising stem with outside screw and yoke (OS & Y) pattern for hand-operated globe valves
11.	Plug	Renewable (replaceable) from stem
12.	Seat	Renewable from the body with seat insert
13.	Flow Direction	Flow to open (for globe valves)

14.	Material of construction <ul style="list-style-type: none"> • Body & Bonnet • Stem, plug and seat Gland Packing Plug, Seat sealing Bolts Nuts	<ul style="list-style-type: none"> • Monel 400 • Monel 400 PTFE PTFE ASTM A 193 B 8, SS ASTM A 194 8, SS
15.	Cleanliness	Should be cleaned for Oxygen service as per procedure given in the Clause 11.0
16.	Pressure Class	PN150 (Class #900)

7.0 SIZING AND NOISE CALCULATION

Control valve sizing shall be based on ISA S 75.01 or the Vendor's sizing formula. The sizing calculation shall be submitted along with the offer.

8.0 ACCESSORIES

All the electronic accessories shall have an explosion-proof enclosure.

8.1 SMART POSITIONER WITH POSITION FEEDBACK

8.2 HAND WHEEL

A removable/ lockable hand wheel shall be provided for manual operation. This shall be either of continuous connection type (bell crank lever) or the helical gear type in relation to the efforts necessary to operate the valve. Clockwise rotation of the valve will close the valve. A hand-wheel disconnecting system or the possibility of operating manual control shall be provided. A blocking device for the hand wheel in any position shall be provided. Hand wheel diameter shall be appropriately chosen.



8.3 AIR FILTER REGULATOR

The vendor shall provide an air filter regulator with a 2" size outgoing air pressure gauge suitable for reduction in air pressure from 6 – 12 bar to valve spring range for the diaphragm actuator. Regulation shall not be less than 97%.

The body material shall be steel unless otherwise specified and all internals shall be of SS 316. The filter element shall be ≤ 40 microns in size (wire mesh, non-sintered). The filter will have to be assembled in the body of the reduction unit itself, which will have to be either in zinc or Aluminum. The reduction filter must be equipped with a water trap and drain cock. All the supplied reduction filters will have to be identical for all valves. This shall be reputed make. Make shall be indicated in the offer.

9.0 NAMEPLATE

The control valve shall have an SS nameplate attached firmly to it at a visible place furnishing the following information.

- a. Tag No.
- b. Manufacture's name/trademark.
- c. Manufacture's Model No. and serial No.
- d. Pressure and temperature design
- e. CV
- f. Body material and size
- g. Trim material and size
- h. Valve characteristics
- i. Stem Travel J
- j. Valve action on air failure.
- k. Operating signal range.

10.0 INSPECTION AND TESTING

Following tests shall be carried out as a minimum and the test report submitted while calling for inspection at the manufacturer's work.

- Material test reports from the laboratory for casting for body/bonnet, trim material, and radiography reports if applicable. The material certificates, detailing the physical and chemical properties, of the principal pressure-bearing parts shall be provided.
- Visual inspection for quantity, conformity with specification, supply of accessories, etc., and dimensional check as per vendor's drawing.
- Body mount leak test as per vendor's standard
- Actuator leak test – Air at 1.5 times the maximum working pressure
- Seat leakage test as per ANSI
- Calibration test with positioner for stroke linearity, hysteresis, etc.
- Test on accessories for proper operation.
- Radiography:



Radiography of all weld joints present in the control valve shall be carried out.

Material certificates:

The material certificates, detailing the physical and chemical properties, of the principal pressure-bearing parts as well as all the parts shall be provided.

Welding joint test:

Any butt welding joint in the valve shall be subject to a radio-graphic test with X-rays to 2-T sensitivity.

Soundness test for casting:

All the castings shall be subject to soundness tests with radiographic or ultrasonic techniques for flaw detection.

Hydraulic shell pressure test:

The valve, before assembly, in the partially open position, shall be subject to a pressure test with H₂O (with suitable corrosion inhibitor) at 1.1 times the maximum rated working pressure of the particular pressure rating class of the valve. The test procedure and acceptance criterion shall be as per ISA-75.19.01-2001 or BS 6755, Part 1 or equivalent

Pneumatic shell pressure test:

The valve, upon final assembly, in the partially open position, shall be subjected to the pressure test by dry air or GN₂ at 1.1 times the maximum rated working pressure of the particular pressure rating class of the valve. The test procedure and acceptance criterion shall be as per Rate A of BS 6755 Part 1 / Equivalent

Hydraulic seat pressure test:

The valve, in closed position, shall be subject to a pressure test with water (with suitable corrosion inhibitor) at 1.1 times the maximum rated working pressure of the particular pressure rating class of the valve. The test procedure and the acceptance criterion shall be as per ISA-75.19.01-2001 or Rate A of BS 6755 Part 1 / Equivalent

Functional Tests:

The valve with all accessories mounted shall be subject to functional tests to validate the performance.

Marking:

All the valves are assigned tag numbers for the sake of identification. The tag number for each valve, as indicated above besides size, pressure rating class, material of construction, etc., shall be legibly and indelibly engraved on the body of the valves.



The vendor shall complete all tests as above and submit internal inspection/test reports to NAL,

Cleanliness:

All the interior flow surfaces of the valve shall be degreased and cleaned for Oxygen gas service.

11.0 CLEANING PROCEDURE FOR OXYGEN CONTROL VALVE (As Per ASTM G93 STD)

The following cleaning procedure shall be adopted for cleaning of control valve for Oxygen gas service. These are the guide lines only actual procedure shall be followed as per ASTM G93 Std.

1. Chemical cleaning:

Chemical cleaning procedure involves the two steps;

a. Alkaline cleaning:

Alkaline cleaning shall be carried out to remove any oil and grease present in the system. Aqueous mixture of 8-10% sodium hydroxide solution by volume at room temperature minimum immersion time of 30 minutes shall be used for alkaline cleaning.

After cleaning, the components shall be rinsed with DM water (3times) to avoid the risk of stress corrosion.

b. Acid cleaning:

Acid cleaning shall be carried out with aqueous 25-45% HNO₃ by volume at room temperature for minimum immersion time of 30 minutes (SAE AMS 2700F) for the removal oxides, light rust, light soils, fluxes and certain protective coatings. Following pickling, passivation is necessary to prevent flash rusting.

2. DM water cleaning:

After chemical cleaning operation, the components shall be rinsed using DM water (3 times).

3. Drying:

The final step after chemical cleaning procedure purging the system with dry Nitrogen gas free from oil, grease and particulate matter. The dew point of dry N₂ gas employed shall be $\leq -40^{\circ}$ C at 1.013 bar.

12.0 INFORMATION REQUIRED WITH BID

The vendor's quotation shall include a Cv sizing calculation and the detailed specification sheet for the control valve which shall provide all the details regarding the type, the material of construction, range, and accessories, etc. The vendor shall submit a calculation basis for the selection of valve sizing, actuator size, and noise level, relevant to the process condition indicated in the data sheets.

Vendor shall bring out all the deviations, if any, from the specification and shall furnish in the Deviation list. The vendor shall provide a reason for the deviations wherever possible.

Vendor shall furnish catalogs/ literature for all models of valve, actuator, positioner, and all accessories including CV curves, actuator sizing, and lift v/s flow charts.

After placement of the order, the vendor shall submit the following documents

- a. Final specification of control valve and its accessories
- b. Instrument catalogues
- c. Detailed dimensional drawings with bill of material and materials of construction
- d. Valve sizing calculations
- e. QA/QC plan
- f. Test certificate, inspection report, material test reports.
- g. Installation drawing showing end connections, Operation, and maintenance manual.

13.0 DELIVERY

The tenderer shall indicate the delivery schedule along with the offer.

14.0 GENERAL REQUIREMENTS

The vendor shall provide the following ordering information to order consumables and spare parts as required:

- Description of item
- Vendor's reference No.
- Standard quantities recommended for start-up and normal operation.
- Spare parts interchangeability records (SPIR) procedures.

The tenderer shall indicate a list of tools and tackle (if any) that may be required for maintenance, overhaul, and replacement of needle valves.



15.0 GUARANTEE AND WARRANTY

The supplier shall give a warranty for 18 months from the date of commissioning for replacing/ repairing control valves from any kind of defect, material, or workmanship or malfunctioning within 14 days of observing the defect. The supplier shall give a performance guarantee for smooth trouble-free operation of the control valve as per functional requirements for 18 months from the date of supply.

DEVIATION LIST
FORM - A

SL	SPEC./CLAUSE/ TAG NO.	SPECIFICATION REQUIREMENTS	DEVIATION AND REASON FOR DEVIATION AND ITS EFFECT ON PERFORMANCE/ ALTERNATIVE SOLUTION

NOTES:



LIST OF COMMISSIONING SPARES

FORM-B

SL	PART NO	DESCRIPTION	QTY	UNIT RATE

NOTES:

Data Sheet for the Required Pressure & Flow rates

Electro-pneumatic control valve
Size 2"
Pressure Class #900 (PN150)
Leakage Class VI

Sl.	Medium	Type	Line Size	Qty	Pressure (bar)		Flow Rate kg/s
					Inlet	Outlet (regulated)	
1.	Oxygen	Globe	2"	1 No.	150	50 (max)	4
		(With Linear Characteristics)	Sch 80		40	10 (min)	0.5



Tender No.:

BID-SECURING DECLARATION FORM

Date: _____

Bid No. _____

To (insert complete name and address of the purchaser)

I/We. The undersigned, declare that:

I/We understand that, according to your conditions, bids must be supported by a Bid Securing Declaration.

I/We accept that I/We may be disqualified from bidding for any contract with you for a period of one year from the date of notification if I am /We are in a breach of any obligation under the bid conditions, because I/We

(a)	have withdrawn/modified/amended, impairs or derogates from the tender, my/our Bid during the period of bid validity specified in the form of Bid; or
(b)	having been notified of the acceptance of our Bid by the purchaser during the period of bid validity
	(i) fail or reuse to execute the contract, if required, or
	(ii) fail or refuse to furnish the Performance Security, in accordance with the Instructions to Bidders.

I/We understand this Bid Securing Declaration shall cease to be valid if I am/we are not the successful Bidder, upon the earlier of (i) the receipt of your notification of the name of the successful Bidder; or (ii) thirty days after the expiration of the validity of my/our Bid.

Signed: (insert signature of person whose name and capacity are shown) in the capacity of (insert legal capacity of person signing the Bid Securing Declaration).

Name: (insert complete name of person signing the Bid Securing Declaration)

Duly authorized to sign the bid for an on behalf of : (insert complete name of Bidder)

Dated on _____ day of _____ (insert date of signing)

Corporate Seal (where appropriate)

(Note: In case of a Joint Venture, the Bid Securing Declaration must be in the name of all partners to the Joint Venture that submits the bid)

Tender No.:

**Certificate of Local Content
(to be enclosed along with Technical Bid)**

We M/s. _____ (Name of Bidder) hereby certify that we meet the minimum

Local content for the Goods and services offered vide our offer/bid No. _____ dated _____ as specified below:

- Class-I Local Supplier with local content of 50% and above

OR

- Class-II Local Supplier with local content of 20% and above but less than 50%
(Tick appropriate category of Local Supplier)

We are not claiming the services such as transportation, insurance, installation, commissioning, training, after sales service (warranty or AMC/CMC support), consultancy and custom clearance including custom duty as local value addition.

We are aware that the false declarations will be in breach of the Code of Integrity under Rule 175(1)(i)(h) of the General Financial Rules (Govt of India) for which we or our successors can be debarred for up to two years as per Rule 151 (iii) of the General Finance Rules along with such other actions as may be permissible under law.

Signed : [insert signature of person whose name and capacity are shown]
In the capacity of [insert legal capacity of person signing the Bid Submission Form]

Name : [insert complete name of person signing the Bid Submission Form]

Duly authorized to sign the bid for and on behalf of: [insert complete name of Bidder]

Dated on _____ day of _____, _____ [insert date of signing]



ANNEXURE - C

Tender No.:

**Certificate of Price break up of Local Content
(to be enclosed along with Price Bid)**

Ref: Clause 1.30.9 and Chapter-9(Part-A) of the Tender No. _____

We, M/s. _____ (Name of Bidder) hereby certify that we meet the minimum

Local content for the Goods and services offered vide our offer/bid No. _____ dated _____ as specified below:

- Class-I Local Supplier with local content of 50% and above
- OR
- Class-II Local Supplier with local content of 20% and above but less than 50%
(Tick appropriate category of Local Supplier)

Minimum Local content is _____ % as per Price break up given below:

Component of Cost	Imported Product		Domestic value addition to product	
	In Foreign Currency US% or specify	In Rupees Exchanged Rate 1 US\$ - Rs.	In Rupees	Location of value addition
Goods				
i) Material				
ii) Equipment				
iii)				
Total Quoted Price = [X + Y]		X=	Y=	

$$\% \text{ Local Content} = \left[\frac{Y}{X + Y} \times 100 \right]$$

We are not claiming the services such as transportation, insurance, installation, commissioning, training, after sales service (warranty or AMC/CMC support), consultancy and custom clearance including custom duty as Local value addition.



We are aware that the false declarations will be in breach of the Code of Integrity under Rule 175(1)(i)(h) of the General Financial Rules (Govt of India) for which we or our successors can be debarred for up to two years as per Rule 151 (iii) of the General Finance Rules along with such other actions as may be permissible under law.

Signed : [insert signature of person whose name and capacity are shown]

In the capacity of [insert legal capacity of person signing the Bid Submission Form]

Name : [insert complete name of person signing the Bid Submission Form]

Duly authorized to sign the bid for and on behalf of: [insert complete name of Bidder]

Dated on _____ day of _____,

Sl. No.	Name of the Bidder	Address	Signature of the Bidder	Date



ANNEXURE - D

TERMS & CONDITIONS

Tender No.		
Sr. No.	Approximate weight of the Consignment	Approximate dimensions of the consignment
1		
2	Indian Customs Tariff No. and HSN No. (ICT & HSN No.)	
3	Country of Origin	
4	Percentage of Local Content	
5	Annual Turnover	
6	Type of Supplier	
7	Mode of Shipment By Air / SEA / Road / e-download	
8	Port of Destination	Final Destination
9	Delivery Term (INCO Term), as the case may be	
10	Delivery Schedule including Supply, Installation, Commissioning, Training & Acceptance	
a)	Delivery of the Item BoQ/NIT [In weeks / Days / Months] from the date of PO / LC / ILC / Advance [Mention the appropriate term]	
b)	Installation & Commissioning from the date of Delivery of item [In weeks/Days/Months]	

Tender No.		
Sr. No.	Approximate weight of the Consignment	Approximate dimensions of the consignment
c)	Training from the date of Installation & Commissioning of item [In weeks/Days/Months]	
d)	Acceptance from the date of Training [In weeks/Days/Months]	
11	Installation & Commissioning (if any) Quoted Price inclusive or exclusive	
12	Training (if any) Quoted Price inclusive or exclusive	
13	Partial Shipment [If partial shipment required, the charges incurred towards partial shipment to be borne by Bidder]	
14.	Payment Term	
15	Currency of Bid/Quotation	
16	Statutory Levies [GST/IGST or any other taxes, duties] % of tax to be mentioned.	
17	Bidder GST No.	
18	Bidder Bank Details along with Cancelled cheque	
19	Insurance Coverage	
20	Warranty	
21	Agree to submit Performance Security, if any	
22	Validity of offer	
23	Order to be placed [Full address, Tel #, Fax #, Email Id, Contact Person]	



Tender No.			
Sr. No.	Approximate weight of the Consignment	Approximate dimensions of the consignment	
24	Nature of the item [to be specified] Hazardous/Radio Active/ Perishable/ Dangerous/ Shelf-life or any other		
25	Bidder to mention in the quote, any special carrier requirement is necessary for transport viz., Special License, ODC etc.,		
26	Total Price quoted as per BoQ/Price Schedule/List of Deliverables exclusive of tax		
27	Total Price quoted as per BoQ/Price Schedule/List of Deliverables inclusive of tax		
Note:	Unit Price indicating currency FOB (named port of shipment or FCA (named place of delivery))		

ANNEXURE - E

Tender No.:

Format for declaration by the Bidder for Code of Integrity & Conflict of Interest (This declaration should be furnished on the Bidders Letter Head)

Ref. No: _____

Date _____

To,

(Name & address of the Purchaser)

Sir/Madam,

With reference to your Tender No. _____ dated _____ I/We hereby declare that we shall abide by the Code of Integrity for Public Procurement as mentioned under Para 1.3.0 of ITB of your Tender document and have no Conflict of Interest.

The details of any previous transgressions of the Code of Integrity with any entity in any country during the last three years or of being debarred by any other Procuring Entity are as under:

- a)
- b)
- c)

We undertake that we shall be liable for any punitive action in case of transgression/contravention of this code.

Thanking you,

Yours Sincerely,

Signature
(Name of the Authorised Signatory)
Company Seal



ANNEXURE - F

Tender No.:

SELF CERTIFICATION

With reference to Clause No. 1.1.3, of this tender and GoI, Ministry of Finance Order No.: F. No. 6/18/2019-PPD, dated 23rd July, 2020, on "Restrictions under Rule 144 (xi), of the General Financial Rules (GFRs)", & OM No. F. No. 18/37/2020-PPD, dated 8th February, 2021, and as amended from time to time on the date of issue of Tender:

It is certified that

- We are not a bidder of a country which shares a land border with India.

OR

- We are a bidder of a country which shares a land border with India, however, we are eligible to bid in any procurement whether of goods or services as we are registered with the Competent Authority as specified in Ministry of Finance (GoI) Order No. 6/18/2019 – PPD, dated 23rd July 2020. Copy of valid registration is attached.
- Tick as applicable

Place:

Date:

Authorised Signatory Name:
Company Seal

**Technical Compliance Sheet for
Supply of Monel Control Valve for Oxygen Service**

File No: NAL/PUR/PR/ 069 /2024

UTN: PR150724P50EQUIPMENT307 (PFMS)

S. No	Description/ Parameter	Details/ Value as per Specification Sheet	Details/ Value to be filled by Vendor
1	Type	Globe (With linear Characteristics)	
2	Operating Medium	Gaseous Oxygen.	
3	Pressure inlet	30 – 145 bar (Operating), 150 bar (Max)	
4	Pressure Outlet	10 – 50 bar (Operating), 55 bar max	
5	Temperature	15 C (Min); 30 C (Nominal); 45 C (max)	
6	Flow rate	Nominal: 4 kg/s for an inlet pressure of 40 bar and outlet pressure of 25 bar at a valve opening of 90%. The Cv calculation shall be done for the above flow and valve opening conditions.	
7	Size	Line size 2 inch	
8	Application	Control	
9	Actuation	Electro-pneumatically operated (Smart Positioner with Position feedback)	
10	Leakage class	Class VI	
11	End Connections	Flanged end Connection to ANSI B16.5	
12	Bonnet (globe)	Bolted or screwed to the	

	valve)	body with spring-energized seals (Helicoflex, Enerseal, etc.)	
13	Material of construction: a) Body & Bonnet b) Stem, plug and seat	a) Monel 400 b) Monel 400	
14	Plug, Seat sealing	PTFE	
15	Cleanliness	Should be cleaned for Oxygen service as per procedure given in the Clause 11.0 of Specification document	
16	Bolts	ASTM A 193 B 8, SS	
17	Nuts	ASTM A 194 8, SS	
18	Pressure Class	PN150 (Class #900)	
19	Warranty	A minimum of 18 months from the date of supply of item	