

Bid Document

| Bid Details | |
|--|---|
| Bid End Date/Time | 12-08-2021 09:00:00 |
| Bid Opening Date/Time | 12-08-2021 09:30:00 |
| Bid Life Cycle (From Publish Date) | 90 (Days) |
| Bid Offer Validity (From End Date) | 65 (Days) |
| Ministry/State Name | Ministry Of Petroleum And Natural Gas |
| Department Name | Oil India Limited |
| Organisation Name | Oil India Limited |
| Office Name | Oil India Limited |
| Total Quantity | 1 |
| Item Category | Pressure and Temperature test & calibration bench |
| MSE Exemption for Years of Experience and Turnover | No |
| Startup Exemption for Years of Experience and Turnover | No |
| Document required from seller | Certificate (Requested in ATC), OEM Authorization Certificate, Additional Doc 1 (Requested in ATC), Additional Doc 2 (Requested in ATC), Additional Doc 3 (Requested in ATC), Additional Doc 4 (Requested in ATC) *In case any bidder is seeking exemption from Experience / Turnover Criteria, the supporting documents to prove his eligibility for exemption must be uploaded for evaluation by the buyer |
| Bid to RA enabled | No |
| Time allowed for Technical Clarifications during technical evaluation | 5 Days |
| Inspection Required (By Empanelled Inspection Authority / Agencies pre-registered with GeM) | Yes |
| Inspection to be carried out by Buyers own empanelled agency | Yes |
| Type Of Inspection | Stage-wise Inspection |
| Name of the Empanelled Inspection Agency/ Authority | Board of Officers |
| Evaluation Method | Total value wise evaluation |

EMD Detail

| | |
|----------|----|
| Required | No |
|----------|----|

ePBG Detail

| | |
|-------------------------------------|-----------|
| Advisory Bank | HDFC Bank |
| ePBG Percentage(%) | 3.00 |
| Duration of ePBG required (Months). | 14 |

(a). EMD & Performance security should be in favour of Beneficiary, wherever it is applicable.

Beneficiary:

SMM

Bank Name :HDFC BANK LIMITED Branch Name :Duliajan Bank Account No.:21182320000016 Type of Account :Current Account IFSC Code :HDFC0002118 MICR Code :786240302 SWIFT Code :HDFCINBBCAL The Bank Guarantee issued by the Bank must be routed through SFMS platform as per following details: (i) MT 760 / MT 760 COV for issuance of Bank Guarantee (ii) MT 760 / MT 767 COV for amendment of Bank Guarantee The above message / intimation shall be sent through SFMS by the BG issuing Bank branch to HDFC Bank, Duliajan Branch, IFS Code - HDFC0002118; SWIFT Code - HDFCINBBCAL. Branch Address: HDFC Bank Limited, Duliajan Branch, Utopia Complex, BOC Gate, Jayanagar, Duliajan, Dibrugarh, PIN - 786602. The vendor shall submit to OIL the copy of the SFMS message as sent by the issuing bank branch along with the original bank guarantee (Amrit Loushon Bora)

Splitting

Bid splitting not applied.

MII Purchase Preference

| | |
|-------------------------|----|
| MII Purchase Preference | No |
|-------------------------|----|

Competent Authority Approval for not opting Make In India Preference : [View Document](#)

MSE Purchase Preference

| | |
|-------------------------|-----|
| MSE Purchase Preference | Yes |
|-------------------------|-----|

1. Purchase preference to Micro and Small Enterprises (MSEs): Purchase preference will be given to MSEs as defined in Public Procurement Policy for Micro and Small Enterprises (MSEs) Order, 2012 dated 23.03.2012 issued by Ministry of Micro, Small and Medium Enterprises and its subsequent Orders/Notifications issued by concerned Ministry. If the bidder wants to avail the Purchase preference, the bidder must be the manufacturer of the offered product in case of bid for supply of goods. Traders are excluded from the purview of Public Procurement Policy for Micro and Small Enterprises. In respect of bid for Services, the bidder must be the Service provider of the offered Service. Relevant documentary evidence in this regard shall be uploaded along with the bid in respect of the offered product or service. If L-1 is not an MSE and MSE Seller (s) has/have quoted price within L-1+ 15% (Selected by Buyer) of margin of purchase preference /price band defined in relevant policy, such Seller shall be given opportunity to match L-1 price and contract will be awarded for 100%(selected by Buyer) percentage of total QUANTITY.

2. Inspection of Stores by Nominated Inspection Authority / Agency of buyer or their authorized representatives

An independent third party Professional Inspection Body can help buyer in mitigating buyer's risk with pre-dispatch/post-dispatch inspection in order to ensure that equipment, components, solutions and documentation conform to contractual requirements. The buyer has a right to inspect goods in reasonable manner and within reasonable time at any reasonable place as indicated in contract. Inspection Fee/ Charges (as pre-greed between

buyer and Inspection Agency) would be borne by the buyer as per their internal arrangement but may be recovered from the seller if the consignment failed to conform to contractual specification and got rejected by the Inspection Officer. If so requested and accepted by the seller, initially seller may pay for inspection charges as applicable and get the same reimbursed from buyer if consignment accepted by the Inspecting Officer. For reimbursement seller has to submit proof of payment to Inspection Agency.

Seller/OEM shall send a notice in writing / e-mail to the Inspecting officer / inspection agency specifying the place of inspection as per contract and the Inspecting officer shall on receipt of such notice notify to the seller the date and time when the stores would be inspected. The seller shall, at his own expenses, afford to the Inspecting officer, all reasonable facilities as may be necessary for satisfying himself that the stores are being and or have been manufactured in accordance with the technical particulars governing the supply. The decision of the purchaser representative / inspection authority regarding acceptance / rejection of consignment shall be final and binding on the seller.

The Seller shall provide, without any extra charge, all materials, tools, labour and assistance of every kind which the Inspecting officer may demand of him for any test, and examination, other than special or independent test, which he shall require to be made on the seller's premises and the seller shall bear and pay all costs attendant thereon.

The seller shall also provide and deliver store / sample from consignment under inspection free of charge at any such place other than his premises as the Inspecting officer may specify for acceptance tests for which seller/OEM does not have the facilities or for special/ independent tests.

In the event of rejection of stores or any part thereof by the Inspecting officer basis testing outside owing to lack of test facility at sellers premises, the seller shall, on demand, pay to the buyer the costs incurred in the inspection and/or test. Cost of test shall be assessed at the rate charged by the Laboratory to private persons for similar work.

Inspector shall have the right to put all the stores or materials forming part of the same or any part thereof to such tests as he may like fit and proper as per QAP/governing specification. The seller shall not be entitled to object on any ground whatsoever to the method of testing adopted by the Inspecting officer.

Unless otherwise provided for in the contract, the quantity of the stores or materials expended in test will be borne by seller.

Inspecting officer is the Final Authority to Certify Performance / accept the consignment. The Inspecting officer's decision as regards the rejection shall be final and binding on the seller.

The seller shall if so required at his own expense shall mark or permit the Inspecting officer to mark all the approved stores with a recognised Government or purchaser's mark.

Pre Bid Detail(s)

| Pre-Bid Date and Time | Pre-Bid Venue |
|------------------------------|--|
| 29-07-2021 09:00:00 | Pre-bid meeting shall be arranged through video conference (VC). Link of the VC will be shared shortly. Interested bidder(s) are requested to submit their pre-bid queries in word format in advance (atleast 3 days ahead of prebid conference) to mail id: amritl_bora@oilindia.in |

Pressure And Temperature Test & Calibration Bench (1 pieces)

| | |
|------------|-----------|
| Brand Type | Unbranded |
|------------|-----------|

Technical Specifications

| | |
|------------------------------|--------------------------|
| Buyer Specification Document | Download |
|------------------------------|--------------------------|

Installation Commissioning and Testing (ICT) details for the above item:

| | |
|---|---------|
| % of Product Cost Payable on Product Delivery | 80% |
| Min Cost Allocation for ICT as a % of product cost | 20% |
| Number of days allowed for ICT after site readiness communication to seller | 56 Days |

Consignees/Reporting Officer and Quantity

| S.No. | Consignee/Reporting Officer | Address | Quantity | Delivery Days |
|-------|-----------------------------|---|----------|---------------|
| 1 | DIPANKAR PATHAK | 786602,Oil India Limited, Duliajan, Assam | 1 | 140 |

Buyer added Bid Specific Additional Scope of Work

| S.No. | Document Title | Description | Applicable i.r.o. Items |
|-------|---|---|--|
| 1 | Bid Evaluation / Rejection Criteria and other notes View | Bid Evaluation / Rejection Criteria and other notes | Pressure And Temperature Test & Calibration Bench(1) |

The uploaded document only contains Buyer specific Additional Scope of Work and / or Drawings for the bid items added with due approval of Buyer's competent authority. Buyer has certified that these additional scope and drawings are generalized and would not lead to any restrictive bidding.

Buyer Added Bid Specific Additional Terms and Conditions

- Bidder financial standing:** The bidder should not be under liquidation, court receivership or similar proceedings, should not be bankrupt. Bidder to upload undertaking to this effect with bid.
- Actual delivery (and Installation & Commissioning (if covered in scope of supply)) is to be done at following address OIL INDIA LIMITED Secondary Tank Farm (STF), Madhuban Duliajan, Dibrugarh Assam India - 786602.
- Bidder shall submit the following documents along with their bid for Vendor Code Creation:
 - Copy of PAN Card.
 - Copy of GSTIN.
 - Copy of Cancelled Cheque.
 - Copy of EFT Mandate duly certified by Bank.
- Installation, Commissioning, Testing, Configuration, Training (if any - which ever is applicable as per scope of supply) is to be carried out by OEM / OEM Certified resource or OEM authorised Reseller.
- OPTION CLAUSE:** The Purchaser reserves the right to increase or decrease the quantity to be ordered up to 25 percent of bid quantity at the time of placement of contract. The purchaser also reserves the right to increase the ordered quantity by up to 25% of the contracted quantity during the currency of the

contract at the contracted rates. Bidders are bound to accept the orders accordingly.

6. Supplier shall ensure that the Invoice is raised in the name of Consignee with GSTIN of Consignee only.
7. The buyer organization is an institution eligible for concessional rates of GST as notified by the Government of India. The goods for which bids have been invited fall under classification of GST concession and the conditions for eligibility of concession are met by the institution. A certificate to this effect will be issued by Buyer to the Seller after award of the Contract. Sellers are requested to submit their bids after accounting for the Concessional rate of GST.
Applicable Concessional rate of GST : 5%
Notification No.and date : 3/2017 dated 28/06/2017
8. **Upload Manufacturer authorization:** Wherever Authorised Distributors are submitting the bid, Manufacturers Authorisation Form (MAF)/Certificate with OEM details such as name, designation, address, e-mail Id and Phone No. required to be furnished along with the bid.
9. Without prejudice to Buyer's right to price adjustment by way of discount or any other right or remedy available to Buyer, Buyer may terminate the Contract or any part thereof by a written notice to the Seller, if:
 - i) The Seller fails to comply with any material term of the Contract.
 - ii) The Seller informs Buyer of its inability to deliver the Material(s) or any part thereof within the stipulated Delivery Period or such inability otherwise becomes apparent.
 - iii) The Seller fails to deliver the Material(s) or any part thereof within the stipulated Delivery Period and/or to replace/rectify any rejected or defective Material(s) promptly.
 - iv) The Seller becomes bankrupt or goes into liquidation.
 - v) The Seller makes a general assignment for the benefit of creditors.
 - vi) A receiver is appointed for any substantial property owned by the Seller.
 - vii) The Seller has misrepresented to Buyer, acting on which misrepresentation Buyer has placed the Purchase Order on the Seller.
10. While generating invoice in GeM portal, the seller must upload scanned copy of GST invoice and the screenshot of GST portal confirming payment of GST.
11. Whereever Essentiality Certificate is applicable (PEL/ML), successful bidder should provide Proforma Invoice for processeing for EC application and material should be dispatche after receiving of EC rom DGH. In view of the same, an ATC may be incorporated in GeM, viz, "BIDDER/OEM must provide Proforma Invoice for processeing for EC application within 95 days from date of issue of GeM Contract and material should be dispatche after receiving of EC rom DGH."
12. Scope of supply (Bid price to include all cost components) : Supply Installation Testing Commissioning of Goods and Training of operators and providing Statutory Clearances required (if any)
13. IMPORTED PRODUCTS: In case of imported products, OEM or Authorized Seller of OEM should have a registered office in India to provide after sales service support in India. The certificate to this effect should be submitted.
14. Purchase preference to Micro and Small Enterprises (MSEs): Purchase preference will be given to MSEs as defined in Public Procurement Policy for Micro and Small Enterprises (MSEs) Order, 2012 dated 23.03.2012 issued by Ministry of Micro, Small and Medium Enterprises and its subsequent Orders/Notifications issued by concerned Ministry. If the bidder wants to avail the Purchase preference, the bidder must be the manufacturer of the offered product in case of bid for supply of goods. Traders are excluded from the purview of Public Procurement Policy for Micro and Small Enterprises. In respect of bid for Services, the bidder must be the Service provider of the offered Service. Relevant documentary evidence in this regard shall be uploaded along with the bid in respect of the offered product or service. If L-1 is not an MSE and MSE Seller (s) has/have quoted price within L-1+ 15% of margin of purchase preference /price band defined in relevant policy, such Seller shall be given opportunity to match L-1 price and contract will be awarded for percentage of 100% of total value.
15. Bidder's offer is liable to be rejected if they don't upload any of the certificates / documents sought in the Bid document, ATC and Corrigendum if any.
16. Warranty period of the supplied products shall be 1 years from the date of final acceptance of goods or after completion of installation, commissioning & testing of goods (if included in the scope of supply), at consignee location. OEM Warranty certificates must be submitted by Successful Bidder at the time of delivery of Goods. The seller should guarantee the rectification of goods in case of any break down during the guarantee period. Seller should have well established Installation, Commissioning, Training, Troubleshooting and Maintenance Service group in INDIA for attending the after sales service. Details of Service Centres near consignee destinations are to be uploaded along with the bid.

Disclaimer

The additional terms and conditions have been incorporated by the Buyer after approval of the Competent Authority in Buyer Organization. Buyer organization is solely responsible for the impact of these clauses on the bidding process, its outcome and consequences thereof including any eccentricity / restriction arising in the bidding process due to these ATCs and due to modification of technical specification and / or terms and conditions governing the bid. Any clause incorporated by the Buyer such as demanding Tender Sample, incorporating any clause against the MSME policy and Preference to make in India Policy, mandating any Brand names or Foreign Certification, changing the default time period for Acceptance of material or payment timeline governed by OM of Department of Expenditure shall be null and void and would not be considered part of bid. Further any reference of conditions published on any external site or reference to external documents / clauses shall also be null and void. If any seller has any objection / grievance against these additional clauses or otherwise on any aspect of this bid, they can raise their representation against the same by using the Representation window provided in the bid details field in Seller dashboard after logging in as a seller within 4 days of bid publication on GeM. Buyer is duty bound to reply to all such representations and would not be allowed to open bids if he fails to reply to such representations.

[This Bid is also governed by the General Terms and Conditions](#)

In terms of GeM GTC clause 26 regarding Restrictions on procurement from a bidder of a country which shares a land border with India, 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. While participating in bid, Bidder has to undertake compliance of this and any false declaration and non-compliance of this would be a ground for immediate termination of the contract and further legal action in accordance with the laws.

---Thank You---

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Note: Bidder(s) are requested to refer to Annexure-II (checklist for special notes) and Annexure -III for Bid Evaluation Criteria and Bid Rejection Criteria

1. INTRODUCTION

1.1 Background

- 1.1.1 OIL INDIA LIMITED (OIL), a Govt. of India "NAVARATNA" category Enterprise, is a premier oil Company engaged in Exploration, Production and Transportation of crude oil & natural gas with its Field Headquarter at Duliajan, Assam. Duliajan is well connected by Air with nearest Airport Dibrugarh, 45 km away. The Secondary Tank Farm (STF) of OIL is having around 3000+ different Electronics & pneumatic process instruments/sensors. To carryout calibration, repairing, testing of these instruments, we intend to procure an **Instrumentation Test & Calibration Bench** for STF with a computerised, automatic instrumentation calibration management system for smooth testing & calibration of these instruments. Therefore, one number **Instrumentation Test & Calibration Bench**, with provision of total calibration management system, tailor made to STF requirement, is to be procured by M/s OIL covering Pressure and Temperature range up-to 1500 psi and 650 DEG C respectively.
- 1.1.2 The proposed state-of-the-art instrumentation test and calibration bench, having calibration management system, multiple input handling facility, auto calibration as well as customized calibration report generation facility, shall help Secondary Tank Farm (STF) to cope up all calibration jobs within the Installation.
- 1.1.3 The bench should have following minimum features:
- Pressure calibration up-to 100 Kg/cm².
 - Temperature calibration up-to 650 DEG C.
 - Auto calibration facility for Pressure and Temperature Instruments.
 - Simulation of Voltage, Current source, Thermocouple, RTD etc.
 - Facilities for testing and repairing of electronics cards.
 - Automatic generation of calibration report.
 - Storage facility for calibration data.

1.2 Intent of the Specification

- 1.2.1 The intent of the specification is to enable the bidder to submit their best offer as per scope of enquiry described in **Chapter 3** of the Tender Specification, which is intended to achieve the requisite design and technological parameters as indicated in **Chapter 4**, realization of performance guarantee as mentioned in **Chapter 21** and as per special instruction to bidders as per **Chapter 22** of this specification.
- 1.2.2 The specification shall be read in conjunction with the Standard Bidding Document (SBD) published by M/s OIL, Notice for Invitation of Tender (NIT) and any other instructions to the bidders issued by M/s OIL enclosed with the tender documents.

2. SITE CONDITIONS / DESIGN DATA:

- 2.1 Owner/ Purchaser : M/s OIL INDIA LIMITED
- 2.2 Location : Duliajan, Assam
- 2.3 Ambient air temperature
a) Maximum : 40.0 Deg. C

| | | |
|---|---|-------------|
| b) Minimum | : | 6.5 Deg. C |
| c) Average | : | 26.5 Deg. C |
| Reference Temperature | : | 50.0 Deg. C |
| For design of electronic Equipment/ Devices | | |

2.4 Relative Humidity %

| | | |
|------------------------|---|-------------------|
| Maximum during Monsoon | : | 100% at 21 Deg. C |
| b) Minimum | : | 70% at 41 Deg. C |
| c) Average | : | 95% at 32 Deg. C |

2.5 Rainfall

| | | |
|------------|---|---------------------|
| a) Maximum | : | 480 mm (in July) |
| b) Minimum | : | 27 mm (in November) |

*It rains throughout the year.

3. SCOPE OF ENQUIRY

3.1. General

- 3.1.1. The above test bench is required for STF Madhuban of OIL INDIA LIMITED, Duliqjan, Assam.
- 3.1.2. The scope of work for supplying and commissioning of **Instrumentation Test & Calibration Bench** in STF Madhuban of M/s OIL shall broadly comprises of design, engineering, manufacturing, assembly, testing, packing, supply, handling, storage at site, erection, testing, integrated commissioning and handling over of complete instrumentation test & calibration bench with integrated computerised calibration management system to M/s OIL. The scope shall also cover supply, laying, termination, testing and commissioning of all the cables power, signal, special / communication networking as necessary for installation for the system including civil work if any necessary for laying of trays cable inserts and also to train M/s OIL personnel on Operation & Maintenance (O&M) of the proposed Instrumentation test & calibration bench for STF Madhuban.
- 3.1.3. All installation work of test bench & its accessories shall be in the scope of bidder.
- 3.1.4. All required erection materials, accessories, earthing system, commissioning spares, tools and tackles shall be in scope of bidder. Mounting stands for pressure & DP transmitters as well as for temperature transmitter shall be supplied & erected by the successful bidder.
- 3.1.5. All commissioning spares like battery, battery charger seal kit, fittings, electrical connectors etc., has to be supplied by the successful bidder.
- 3.1.5. Coloured TB & different colour wire with proper ferrule shall be used for different signal, power in the test bench.
- 3.1.6. Necessary signal, power cable supply, cable laying etc. jobs for 230 V AC, 50 Hz from main feeder to test benches shall be considered. For this requirement power distribution box complete with circuit breakers, lamps, switches & TBs etc. shall be considered by bidder. 20% spare TB, circuit breakers, fuse, lamps, spare core for

cables etc. shall be considered as a part of supply. All power cables inside panel shall be 3 core, 2.5 mm sq. armoured, stranded copper with Heat Resistance PVC as per relevant IS standard. Earthing cable shall be stranded 10 sq mm (for main) cable & 4 sq mm for individual shall be used or as per OEM's standards. At-least one spare core on all type of cables shall be considered.

- 3.1.7. Supply of furniture and chairs (4 nos. cushion chairs having powder coated metal framed with 5 caster legs), one table for printer and communication interface unit and any special cables, computer / printer cables will also be under the successful bidder's scope.
- 3.1.8. Supply & laying of SS tubes for pneumatic supply from existing air compressor facility/ vacuum pump to Test Bench shall be considered by bidder.
- 3.1.9. Necessary fittings, hoses & tubing of required rating (rated value shall be at least 150% of max. operating value) shall be supplied by the successful bidder to hook existing accessories required for this Test Bench. Test certificate of the fittings & piping has to be produced by the bidder during installation and all test certificates should be handed over to M/s OIL. Supply of one set of spares for all type hoses, fittings etc., other than in use is under successful Bidder's scope.
- 3.1.10. Supply of necessary erection hardware, accessories, cabinets, racks etc. as required for completing installation of Test Bench.
- 3.1.11. Vacuum pump has to be installed by the bidder for negative pressure generation and the same shall be hooked up to the Test Bench.
- 3.1.12. Quick push fit type fittings with automatic shut off valve shall be considered & those fittings shall be mounted directly on the front facia of the Test Bench.
- 3.1.13. Bidder has to make separate earth pit for the Instrumentation Test & Calibration Bench. The bidder needs to carry out necessary design including laying of cables. The location will be as per OIL's advice.
- 3.1.14. Site for storing the materials will be allotted to the successful bidder within 100 meters distance from the erection site. Transportation of materials to this store and there from to the erection site shall be the exclusive responsibility of the successful bidder. Before transportation all materials shall be suitably and securely packed and boxed.
- 3.1.15. The successful bidder shall provide necessary erection consumable like oxygen and acetylene gas, welding rods, solder lugs, lubricants, oil, cotton waste etc. at his own cost. The successful bidder shall also mobilise himself with adequate material handling equipment in addition to other erection tools and consumable keeping in view of the erection schedule.
- 3.1.16. Transportation and dumping of all waste on day to day basis arising out of unpacking, construction, fabrication and erection to the area during Installation and Commissioning as directed by the executing authority shall be done by the successful bidder.
- 3.1.17. Visual inspection, cold run tests/ performance guarantee tests and commissioning of the test & calibration equipment at Instrumentation workshop as per the Specifications.
- 3.1.18. Conducting performance guarantee tests will be the responsibility of the successful bidder. The program of tests will be drawn in advance for approval by M/s OIL.

- 3.1.19. Bidder shall submit test certificates for the equipment/components used for the system.
- 3.1.20. Bidder needs to offer complete package as per NIT. Bidder who does not have complete range of products as mentioned in BOM, may arrange that item(s)/equipment from other make(s) as mentioned in "**List of Preferred Make** " as per **Annexure:8-1** to complete their offer.
- 3.1.21. All the major instruments should be supplied with a suitable size of container so that same can be dispatched to third party for calibration in future.
- 3.1.22. The tender document includes the detailed information of the project (**Chapter 1 & 2**), Scope of Supply & Technical Specification (**Chapter 3 and 4**) and Bid Rejection Criteria / Bid Evaluation Criteria (BEC / BRC).
- 3.1.23. Bidders must take cognizance of all the Chapters of this document. The technical check list (**Annexure-1**) will be considered as one of the main basis for carrying out the technical evaluation. Similarly, bidders must submit **Schedule -1** along with their technical offer showing price break up in terms of percentage of Total Price Quoted in GeM. Note: Prices are not to be submitted alongwith technical bid.

4 TECHNICAL SPECIFICATION

4.1 Design Conditions

- 4.1.1 All test & calibration equipment shall be designed for continuous duty operation in industrial environment.
- 4.1.2 System shall be designed with inbuilt safety system for operating and maintenance personnel.
- 4.1.3 Test & Calibration bench shall be of modular design for future expandability / modification.
- 4.1.4 All equipment connected to test bench shall have computer interface supporting software & communication port for data storage & retrieval & can be hooked up with a rugged industrial Computer for bi-directional communication wherever possible.
- 4.1.5 All Master Calibration Instrument/equipment to be installed in the test bench should have calibration certificate as per **Annexure: 19-1 & Annexure: 19-2**.
- 4.1.6 Proposed multi-function calibration test bench with integrated computerized calibration management system will be consisting of:
- Pressure Section (0 to 100 bar)
 - Low Pressure/ Draft Pressure Section (- 350 mbar and + 350 mbar)
 - Temperature Section (Liquid bath & Dry block, Temperature up-to 650 DEG C)
- 4.1.7 The above facility shall be supplied in a console which is designed scientifically with sufficient working space and necessary mounting/installation accessories as required. The Bench shall be supplied with other necessary fittings, connecting hoses, tools and tackles as per actual requirement and specification mentioned herewith.

Following points to be noted by the bidder:

- Connecting Block for connecting both sides Impulse pressure to DP Transmitter/Instrument to be supplied.

4.2 Design Concept & Description of Console Test Bench

- 4.2.1 Test bench should have modular & console type design with all facilities accessible from front for easy operation & arrangement of the modules. In the same test bench there should be **one** standalone setup/sections for pressure, **one** standalone setup/sections temperature, one industrial Computer loaded with necessary software for calibration management system, automatic generation of calibration certificates in customised format.
- 4.2.2 The test bench shall be of systematic and aesthetic design, with provision of sufficient testing space to check and calibrate various types of instruments.
- 4.2.3 The shape of the test bench should be as per Schematic given in **Annexure: 4.2.3-1**. First section will be exclusively for pressure (**up to 100 bar**) and another for temperature application (0-650 deg.C); sufficient support to be provided in each section to place independently, including the Industrial Computer with printer.
- 4.2.4 The Test Bench should be implemented with section with two fully automatic pressure controllers having ranges (**-350 mbar and +350 mbar**), and **0 to 100 bar**. Individual setup/section shall be complete with all attachment, accessories, modules/calibrator cum indicators/multifunction calibrators, controllers, generator etc.
- 4.2.5 For temperature calibration, another setup/section with liquid bath and dry furnaces shall be provided separately. The same shall be integrated to Data Acquisition System (DAQ) as well as the Industrial Computer to complete calibration in all respect.
- 4.2.6 The instruments supplied in the Test Bench should be panel mount type and modular in design.
- 4.2.7 For each pressure range, manifold with 3 ports complete with isolation valve for calibration of transmitters/gauges etc. to be supplied for doing calibration numbers of instruments at a time.
- 4.2.8 All Power/signal connections of the Master instruments should be terminated in the terminal base so that the output/input terminals of Masters are free from regular wear and tear.
- 4.2.9 All the connections from the instruments to the terminal base should be done at the back side of the consoles and dimension of the consoles should be chosen in such a way that sufficient space should be maintained for each type of wiring.
- 4.2.10 Care should be taken so that sufficient space is maintained for accessibility by our maintenance personnel.
- 4.2.11 All the starting switches and mimic panel shall be located on the front portion for ease of accessibility.
- 4.2.12 Each section of Test Bench (i.e. Pressure, Temperature) shall have at least 4 drawers, having minimum size of 500 mm wide x 200 mm height.
- 4.2.13 All equipment as indicated above shall have computer interface, supporting software & communication port for data storage & retrieval and can be hooked up with, an industrial Computer for bi-directional communication wherever possible for which details of the equipment required are mentioned as under:
- Supply & fixing of overhead lamps in each section of the bench for proper lighting.

- Four nos. AC sockets module round Type to be provided for 230V, 16A/5A outlets with individual MCBs in each section of the bench.
 - Blank Module to be provided on the Bench for future expansion in both sides of the bench.
 - Sufficient space to be kept at the back for easy accessibility of the instruments to remove or repair or for some other activities.
- 4.2.14 The stainless steel tubes/pipes used in the Test Bench i.e. from existing compressor to the calibration point should be of tested for **one and half times** of the maximum rated pressure and for the same certificate is to be provided from the OEM.
- 4.2.15 The push fit connectors used in the Test Bench should be of panel type version with inbuilt automatic shutoff valve and the male plugs to be supplied along with the Test Bench and push fit connectors should be fitted in the front facia of the test bench.
- 4.2.16 The electrical sockets installed in the Test Bench should be of complete with shutter proof technology.
- 4.2.17 Programmable DC Power Supply with a range 0 to 32 V DC, 5 Amp and the same should be programmable.
- 4.2.18 Temperature bath should be supplied along with 10 channels **DAQ** for calibration and data logging of multiple transmitters/sensors.
- 4.2.19 A laboratory environmental monitor should be supplied with Relative Humidity (**RH**) as well as temperature module.
- 4.2.20 A separate electrical vacuum pump with the pneumatic section to be provided.
- 4.2.21 Software package should have facilities for storing calibration data at least for 4000 nos. instruments per year.
- 4.2.22 2KVA UPS (minimum 10 minutes' backup) shall have to be considered for power supply to the Test Bench by bidder.
- 4.2.23 For Temperature Bath, Temperature Dry Block, pump, 230 V AC Non UPS power supply shall be used.
- 4.2.24 Suitable transmitters stands & clamps for fixing the flanges, transmitters & gauges to be supplied and the same to be mounted in the Test Bench.
- 4.2.25 Test bench should cover **vacuum to 100 bar** pressure range as per design concept explained above. Test bench should cover the temperature from ambient to **650 DEGC**. Necessary pressure generator, module, calibrator, furnaces, tubing, fittings, power supply, rugged Industrial Computer, software etc. as described in design concept, scope of work & technical specification shall be considered by bidder for completeness of proposed **Instrument Test & Calibration Bench**.
- 4.2.26 From the above concept the bidder should submit preliminary drawings/layout along with the bid.

4.3 Main Electrical Supply Module

4.3.1 There shall be single phase electrical supply unit with On / Off switch and protective circuits. Bidder to provide such modules separately for each section with appropriate rating. These modules shall be mounted on the bench and each module shall consist of the following:

- Breaker with appropriate rating
- Residual Current Circuit Breaker (Earth Leakage Circuit Breaker) with suitable rating.
- LED Indicator
- Key "ON" switch
- Emergency Stop Push Button

4.4 Instrument having more than 5 Amp power rating shall have individual circuit breaker.

4.5 Supply of all necessary special tools and tackles for regular handling and maintenance.

4.6 Facility to have individual overload protection, overpressure protection, quick releasing facility wherever applicable.

4.7 Facility to be provided for configuring switch setting (Pressure & Temperature) either through the individual calibrating instrument or through the industrial Computer.

4.8 Industrial Computer hook-up with the individual instruments shall be based on IEEE-488/GP-IB/RS232C/USB communication or through MOD Bus/TCP/IP protocol and all individual connections of the instruments to PC will be through Multi-dropping technique and the same is under the scope of the successful bidder.

4.9 Minimum 2 nos. port for 4 to 20 mA source & measurement is to be provided in Pressure Section and Temperature Section.

4.10 Minimum 2 nos. 24V DC supply for instrument calibration with proper protection facility is to be provided in Pressure Section and Temperature Section.

4.11 A RH meter along with indicator of adequate display size of reputed make to be mounted at the centre of the test bench for display of humidity and room temperature inside the calibration hall.

4.12 Integrated Computerised Calibration Management System

4.12.1 Integrated computerized calibration management system will facilitate the accurate calibration, preparation and storage of calibration records, reports and history information for each instrument and to fulfil the ISO 9001:2008 calibration documentation requirement. System shall make the calibration job more systematic, identify the instruments / control loops due for calibration in advance, reduces the time of calibration and helps to store the calibration records in electronic medium for future reference.

4.12.2 The integrated computerised calibration management system shall consist of, one rugged industrial Computer(latest model) loaded with various application software for all testing and calibration activities in the multi-function calibration bench. A laser printer shall be supplied for generating various calibration reports.

4.12.3 Latest licensed version software shall be window-based, menu driven, user friendly, having facility for 10-point calibration and printing calibration report as and when required. The software shall be able to communicate to other computers for

transferring the calibration data. The software shall be able to identify the instruments / process quality loops (under ISO 9001:2008 quality system) due for calibration / test well in advance & the time period shall be defined as and when required. The software shall be capable of generating various reports to fulfil the requirements of ISO-9001:2008. The calibration software should have at least the following facilities:

- Automatic process data reading, setting and transfer to PC. The operator interactions shall be simple and menu-driven basis.
- Display measured data with date, time tag and other conventional data as per user format.
- Temperature ramp and hold set-point control (both ways)
- Job definition and job selection
- Automatic temperature calibration set-up
- Calibration setting retrieval from history data bank
- Configurable history documentation
- Manual input to accommodate data from conventional instruments.
- Manual temperature / pressure flow / setting
- Connectivity of all above instruments and its configuration / monitoring etc.
- Monitoring and controlling the pressure and multi meter and other devices of the test & calibration bench
- Visual and audible alarms for switch checking.
- MIS report -The data storage and report generation shall be in line with ISO 9001:2008 fulfilment e.g. 1) Calibration report 2) Instrument Calibration procedures
- Effective scheduling of calibration and documentation of instruments
- Facility should be available to incorporate any future changes in existing format.

4.12.4 Bidders shall detail out all the features available and support the same with documentary evidence.

4.12.5 All software should be provided **with lifetime licence**. Future software up-gradation/ patch up-gradation shall be free of cost. Bidders shall provide confirmation for the same along with the bid.

4.13 Pressure Generation & Measurement

Pressure calibration section shall be suitable for testing, simulation & calibration of field instruments and primary instruments in automatic mode and it should be dedicated for measurement & simulation of pressure, so as to calibrate and test pneumatic, electronic and smart transmitters, pressure switches and other industrial parameters.

In brief, the said test bench section shall be comprised of the following:

- Generating and calibrating pressure from **vacuum to 100 bar** through pressure controller with motorized pressure generator and ten points / step and ramp calibration techniques for various type smart and ordinary transmitters, switches, gauges etc with precise control.
- Provision of calibrating all types of gauges/transmitters which also includes diaphragm type capillary gauges, diaphragm seal type capillary transmitter with 1.5" / 150 class, 1.5"/300 class, 2"/150 class, 2"/300 class, 3"/150 class, 3"/300 class and arrangement to be made for providing suitable adapter of connecting these flanges externally. All the flanges shall be suitable for ANSI B 16.5 only.
- Facility to be provided for calibration/configuration of pressure switch either through the individual calibrating instrument or through the industrial Computer.

4.14 Low Pressure/ Draft Pressure Generation & Measurement

- Generating and calibration of pressure/vacuum ranging from **-350 mbar and + 350 mbar** through pressure controller with ten points / step and ramp calibration techniques for various type smart transmitters, switches, Gauges etc.

4.15 All the terminals of the test bench should be levelled properly for correct identification.

4.16 **Temperature Calibration section**

- The temperature calibration section consists of liquid type temperature baths of range ambient to 300 DEG C along with necessary power supply, controller/indicator, temperature sensor type selector and port for communication and Data storing facility. Minimum 8 nos. slots shall be inbuilt feature for TC or RTD to be calibrated at a time.
- Temperature generation by using Dry block of temperature range up to 650 DEG C should be considered in the calibration test bench along with necessary power supply, Controller/indicator, Temperature Sensor type selector and port for communication and Data storing. The temperature calibration facility shall be suitable for ten point / step calibration suitable various type / make smart transmitters. Minimum 4 nos. slots shall be inbuilt feature for TC or RTD to be calibrated at a time.
- Both temperature bath and dry block shall be fitted with the test bench and trolley/wheel mounted
- This section should include panel mounted DAQ
- Facility for Selection of temperature element with 2, 3 & 4 wire system.
- Multiple T/C & RTD readings at DAQ

4.17 Technical Specification of Different Equipment of Test Bench

4.17.1 Pressure Calibration Section:

| Sr. No. | Specifications | | Vendor Compliance Technical Literature / Brochure (Reference Page No.) |
|---------|------------------------------------|---|--|
| 1 | Item | Pressure Calibration Section | |
| 2 | Make | Vendor to specify | |
| 3 | Model | Vendor to specify | |
| 4 | General Features | | |
| 4.1 | Test Bench Make | CRCA Sheet and Front Plates Made of Anodized Aluminium with Mimic panel for Test & Repair of Pneumatic Instruments | |
| 4.2 | Design | Modular in Design, Enabling Easy Change of Arrangement. Laminated Top with Compressed Ply for carrying heavy duty Work. | |
| 4.3 | Type | Fully Powder Coated (RAL 7035 (Colour)) | |
| 4.4 | Test Bench Dimension | 2000mm (L) x 1500mm (H) x 900mm (D) | |
| 4.5 | CRCA Sheet Thickness | 1.5 mm | |
| 4.6 | Anodized Aluminium Panel Thickness | 6 mm | |
| 4.7 | Table Top with Laminated Thickness | 35 mm | |
| 4.8 | Illumination | Overhead Lamp for Illumination | |
| 4.9 | Wiring | Wiring with cross ferruling, connections with crimped cable legs and proper channeling. | |

Note: Proper cut out should be provided to mount all test instruments as mentioned in the NIT

4.17.2 Pneumatic Low Pressure Controller

| Sr. No. | Specifications | | Vendor Compliance Technical Literature / Brochure (Reference Page No.) |
|---------|--------------------------------|---|--|
| 1 | Item | Low Pressure Controller | |
| 2 | Make | Vendor to specify | |
| 3 | Model | Vendor to specify | |
| 4 | General Features | | |
| 4.1 | Ranges | Range 1: - 350 mbar to 350 mbar Range 2: -1 Bar to 1 Bar | |
| 4.2 | Display | Multi-line graphic display | |
| 4.3 | Display Resolution | 4 digits | |
| 4.4 | Mounting | Panel Mount | |
| 5. | Technical specification | | |
| 5.1 | Controller Accuracy | 0.015 % FS | |
| 5.2 | Numbers Of Pressure Sensor | Two | |
| 5.3 | Pressure Sensor Accuracy | 0.015 % of FS | |
| 5.4 | Ingress Protection | IP 20 | |
| 5.5 | Pressure Generation | Automatic | |
| 5.6 | Interface | USB , RS-232 | |
| 5.7 | Permissible pressure media | Dry and Clean Air or Nitrogen | |
| 5.8 | Filter Element | All pressure ports have 20-micron filters | |
| 5.9 | Overpressure protection | Safety relief valve | |
| 5.10 | Display | Touch-screen | |
| 5.11 | Display Resolution | 5 digits | |
| 5.12 | Power consumption | 30 VA | |
| 5.13 | Operating temperature | 20 to 35 °C | |
| 5.14 | Storage temperature | 50 °C | |
| 5.15 | Relative humidity | 80 % RH. (non-condensing) | |
| 6 | Accessories | Operation Manual | |
| | | Power Supply Cable | |
| | | Interface cable | |

4.17.3 Pneumatic Pressure Controller (0 to 100 bar)

| Sr. No. | Specifications | | Vendor Compliance Technical Literature / Brochure (Reference Page No.) |
|---------|---------------------------------|---|---|
| 1 | Item | Pressure Controller | |
| 2 | Make | Vendor to specify | |
| 3 | Model | Vendor to specify | |
| 4 | Technical Specifications | | |
| 4.1 | Mounting | Panel Mount | |
| 4.2 | Pressure measurement | Range: Vacuum to 100 bar | |
| 4.3 | Controller Accuracy | 0.015 % FS | |
| 4.4 | Controller Precision | 0.005% FS | |
| 4.5 | Numbers Of Pressure Sensor | Two | |
| 4.6 | Pressure Sensor Accuracy | 0.015 % of FS | |
| 4.7 | Pressure Sensor Range 1 | (0- 20) Bar | |
| 4.8 | Pressure Sensor Range 2 | (0-100)Bar | |
| 4.9 | Pressure Units | 15 engineering unit | |
| 4.10 | Permissible pressure media | Dry and Clean Air or Nitrogen | |
| 4.11 | Filter Element | All pressure ports have 20-micron filters | |
| 4.12 | Overpressure protection | Safety relief valve | |
| 4.13 | Display | Touch-screen | |
| 4.14 | Display Resolution | 5 digits | |
| 4.15 | Interface | USB or RS-232 | |
| 4.16 | Power Supply | AC 220- 240 V, 50 Hz | |
| 4.17 | Power consumption | 100 W (maximum) | |
| 4.18 | Operating temperature | 15 to 35 °C | |
| 4.19 | Storage temperature | Up to 50 °C | |
| 4.20 | Relative humidity | 0- 95 % R.H. (non-condensing) | |
| 5 | Accessories | Operation Manual | |
| | | Power Supply Cable | |
| | | Interface cable | |

4.17.4 Dead Weight Tester (DWT)- Hydraulic (Double piston)

| Sr. No. | Specifications | | Vendor Compliance Technical Literature / Brochure (Reference Page No.) |
|---------|--|---|--|
| 1 | Item | Dead weight Tester-Hydraulic (Double piston) | |
| 2 | Make | Vendor to specify | |
| 3 | Model | Vendor to specify | |
| 4 | General Features | | |
| 4.1 | Elastic deformation Uncertainty | 0.008 % of reading or better (Bidders need to confirm the same during bid that the value will be available in the calibration certificate). | |
| 4.2 | Pump | To be provided | |
| 4.3 | Spindle Pump/Screw Pump | To be provided | |
| 4.4 | Stability | High long-term stability with recommended recalibration cycle every five years | |
| 4.5 | Dimensions | Compact dimensions | |
| 5 | Technical Features / Specifications | | |
| 5.1 | Pressure Range | 1 to 100 bar(minimum) | |
| 5.2 | Accuracy | 0.008 % reading | |
| 6 | Accessories | Standard weight masses are to be non-magnetic austenitic stainless steel. Each mass should be marked with the serial number of the instruments and the nominal pressure value relative to the high and low pressure piston. Fractional mass set also should be supplied. Minimum mass resolution should be 0.1 bar. | |
| | | A set of BSP & NPT female adapters (1/8", 1/4", 3/8", 1/2" & 3/4") should be supplied. | |
| | | Separate low and high Piston to cover the full range. | |
| | | Quick connector for test items. | |
| | | Instrument should be supplied with detachable lid for easy transportation. | |
| | | Levelling screw at base along with spirit level for levelling of base with Horizontal. | |
| | | High quality carrying case for DWT and weights should be supplied. | |
| | | Accredited calibration certificate also should be provided with overall uncertainty, effective area and uncertainty of individual mass set. | |
| | | Software to allow necessary corrections and generate calibration report. | |

4.17.5 Multifunction Calibrator

| Sr. No. | Specifications | | Vendor Compliance Technical Literature / Brochure (Reference Page No.) |
|---------|---|--|--|
| 1 | Item | Multifunction calibrator | |
| 2 | Make | Vendor to specify | |
| 3 | Model | Vendor to specify | |
| 4 | General Features | | |
| 4.1 | Measurement | Simultaneously measure electrical, temperature or pressure signals from transmitter output. | |
| 4.2 | Display | To be provided | |
| 4.3 | Memory | Internal data memory | |
| 4.4 | Power supply | 24V DC Loop Power Supply | |
| 5 | Technical Features / Specifications | | |
| 5.1 | Pressure Module | Range: -350mbar to +350 mbar | |
| | | Accuracy: 0.06 of FS (Minimum) | |
| | | Range: 0-100bar | |
| | | Accuracy: 0.05 of FS (Minimum) | |
| 5.2 | Electrical/Temperature input module | | |
| 5.2.1 | DC Voltage | Range: ± 100 mV, ± 2 V, ± 70 V | |
| | | Accuracy : 0.05 % reading (Minimum) | |
| 5.2.2 | DC Current | Range: ± 100 mA | |
| | | Accuracy : 0.01 % reading (Minimum) | |
| 5.2.3 | Resistance | Range: 0 to 400 /10000 Ω | |
| | | Accuracy : 0.05 % reading (Minimum) | |
| 5.2.3 | Frequency | Range: 1 Hz to 50 KHz | |
| | | Accuracy : 50 Hz (Minimum) | |
| 5.2.3 | RTD | Range: Pt100,Pt200,Pt500,Pt1000, Ni120,Cu10 | |
| | | Max. Resolution: 0.1°C (Minimum) | |
| 5.2.4 | Thermocouple | Range: J,K,T,R,S,B,U,L,N,E,C | |
| | | Max. Resolution: 0.1°C (Minimum) | |
| 5.3 | Electrical/temperature Output Module | | |
| 5.3.1 | DC Voltage | Range: 100mV,1V,15V | |
| | | Accuracy : 0.02 % reading (Minimum) | |
| 5.3.2 | DC Current | Range: 0 to 20 mA | |
| | | Accuracy : 0.03 % reading (Minimum) | |
| 5.3.3 | Resistance | Range: up to 10000 Ω | |
| | | Accuracy : 0.02 % reading (Minimum) | |
| 5.3.4 | Frequency | Range: 1Hz to 50 KHz | |
| | | Accuracy : 5 Hz (Minimum) | |
| 5.3.5 | RTD | Range: Pt100,Pt200,Pt500,Pt1000, Ni120,Cu10 | |
| | | Max. Resolution: 0.1°C (Minimum) | |
| 5.3.6 | Thermocouple | Range: J,K,T,R,S,B,U,L,N,E,C | |
| | | Max. Resolution: 0.1°C (Minimum) | |
| 5.3.7 | HART Communication | Should able to Program HART instrumentation | |
| 6 | Accessories | <ul style="list-style-type: none"> • Test cable set • Battery pack and charger • Interface cable • User manual | |

| | | | |
|--|--|--|--|
| | | <ul style="list-style-type: none"> Standard HP & LP Hand pumps (of the same make as the instrument) Fuses (2nos. each type) | |
|--|--|--|--|

4.17.6. 6^{1/2} Digital Multimeter

| Sr. No. | Specifications | | | Vendor Compliance Technical Literature / Brochure (Reference Page No.) |
|------------|-------------------------|--------------------------|--------------------------------------|--|
| 1 | Item | Digital Multimeter | | |
| 2 | Make | Vendor to specify | | |
| 3 | Model | Vendor to specify | | |
| 4 | General Features | | | |
| 4.1 | Resolution | 6½ digits | | |
| 4.2 | Accuracy | 0.0025% basic DC Volt | | |
| | | 0.06% basic AC Volt | | |
| 4.3 | AC bandwidth | 3 Hz to 300 kHz | | |
| 5. | Technical Specification | | | |
| 5.1 | Mounting | Panel Mount | | |
| 5.2 | Accuracy | Ranges | Accuracy (% of reading + % of range) | |
| | DC Voltage | 100 mV | 0.0030 + 0.0030 | |
| | | 1V | 0.0025 + 0.0006 | |
| | | 10 V | 0.0025 + 0.0006 | |
| | | 100 V | 0.0025 + 0.0006 | |
| | | 1000 V | 0.0025 + 0.0006 | |
| | AC Voltage | 100 mV | 1.00 + 0.03 | |
| | | 1V to 750V | 1.00 + 0.03 | |
| | Resistance | 100 Ω | 0.010 + 0.0030 | |
| | | 1 KΩ | 0.010 + 0.001 | |
| | | 10 KΩ | 0.010 + 0.001 | |
| | | 100 KΩ | 0.010 + 0.001 | |
| | | 1 MΩ | 0.010 + 0.001 | |
| | | 10 MΩ | 0.010 + 0.001 | |
| | | 100 MΩ | 0.300 + 0.010 | |
| | DC Current | 10 mA | 0.05 + 0.01 | |
| | | 100 mA | 0.05 + 0.005 | |
| | | 1 A | 0.05 + 0.006 | |
| | | 3 A | 0.100 + 0.020 | |
| AC Current | 1 A | 1.00 + 0.06 | | |
| | 3 A | 1.00 + 0.06 | | |
| 5.3 | Continuity | Function to be provided | | |
| 5.4 | Diode Test | Function to be provided | | |
| 5.5 | Frequency Accuracy | 0.10 % of reading | | |
| 6 | Accessories | Test Lead Set with Probe | | |
| | | Interface Cable | | |
| | | Operation Manual | | |
| | | Fuses (2 Nos each type) | | |

4.17.7 Electrical Dry Vacuum Pump

| Sr. No. | Specifications | | Vendor Compliance Technical Literature / Brochure (Reference Page No.) |
|---------|----------------------------------|------------------------|--|
| 1 | Item | Electrical Vacuum Pump | |
| 2 | Make | Vendor to specify | |
| 3 | Model | Vendor to specify | |
| 4 | General Features | | |
| 4.1 | Type | Oil Free | |
| 5. | Technical Features | | |
| 5.1 | Displacement | 50 lpm or more | |
| 5.2 | Ultimate vacuum (total pressure) | 15 micron | |
| 5.3 | Motor power 1-ph | 260 W | |
| 5.4 | Noise level | Less than 60 dB | |
| 5.5 | Operating temperature range | Up to 40 °C | |
| | | | |

4.17.8 Nitrogen Cylinder with Trolley

| Sr. No. | Specifications | | Vendor Needs Provide Compliance |
|---------|---------------------------------|---|---------------------------------|
| 1 | Item | Nitrogen Cylinder with Trolley | |
| 2 | Make | Vendor to specify | |
| 3 | Model | Vendor to specify | |
| 4 | Trolley details | | |
| 4.1 | Type | Big Jumbo type / 7 cubic meters | |
| 4.2 | Wheels | Solid Rubber Front Wheels | |
| 4.3 | Stability | Two rear casters to provide Greater Stability | |
| 4.4 | Special Features | Greater Control over the Trolley | |
| | | Easily retractable rear wheel assembly | |
| | | Safety Chain for Securing Cylinder | |
| | | Trolleys are finished with scratch, high gloss, electrostatically applied oven baked Powder coated. | |
| 5. | Technical Specifications | | |
| 5.1 | Capacity | 46.7 ltrs WC / 7 cubic mtr | |
| | Dew point of Nitrogen | - 20 deg. Celsius (or lower) | |
| 5.2 | Cylinder Details | High Pressure Seamless Steel Cylinder and complete with neck ring & cap, Cylinder Regulator. | |
| 5.3 | Standard | ISO Marked. | |

| | | | |
|-----|--------------------|--|--|
| 6.0 | Accessories | 1 no high pressure regulator with hose | |
|-----|--------------------|--|--|

4.17.9 Programmable DC Power Supply

| Sr. No. | Specifications | | Vendor Compliance Technical Literature / Brochure (Reference Page No.) |
|---------|--|---|--|
| 1 | Item | Programmable DC power Supply | |
| 2 | Make | Vendor to specify | |
| 3 | Model | Vendor to specify | |
| 4 | General Features | | |
| 4.1 | Mounting | Panel Mount | |
| 4.2 | Controllable Output | On/Off Switch | |
| 4.3 | Stability Resolution | 10mV/10mA | |
| 4.4 | Additional | <ul style="list-style-type: none"> • Low ripple and noise • Excellent temperature stability | |
| 5 | Technical Features / Specifications | | |
| 5.1 | Input Voltage | 230V, 1 Ph. | |
| 5.2 | Output Voltage | 0-32 V DC | |
| 5.3 | Input current | (0.5-1) A | |
| 5.4 | Working Voltage | 90 to 270 V AC | |
| 5.5 | Output Current | 0-6 A | |
| 5.6 | Metering | 3 Digit DPM | |
| 5.7 | Accuracy | | |
| | Voltage | $\pm 0.05\% + 150\text{mV}$ | |
| | Current | $\pm 0.1\% + 15\text{mA}$ | |
| 5.8 | Line Regulation CV | $< 0.1\% + 3\text{ mV}$ | |
| 5.9 | Line Regulation CC | $< 0.1\% + 2\text{ mA}$ | |
| 5.10 | Load Regulation CV | $< 0.02\% + 5\text{ mV}$ | |
| 5.11 | Load Regulation CC | $< 0.1\% + 5\text{ mA}$ | |
| 5.12 | Ripple (Voltage) | $< 1\text{ mV rms}$ | |
| 5.13 | Ripple (Current) | $< 5\text{ mA rms}$ | |
| 5.14 | Short Circuit Protection | To be provided | |
| 5.15 | Over Voltage Protection | To be provided | |
| 6 | Accessories | <ul style="list-style-type: none"> • Test leads • Test Report • User Manual • Interface cable • Fuses (2 Nos each type) | |

4.17.10 FF Power Supply with Segment Block:

| Sr. No. | Specifications | | Vendor Compliance Technical Literature / Brochure (Reference Page No.) |
|---------|--|--|--|
| 1 | Item | FF Power Supply unit with 8 way segment Block | |
| 2 | Make | Vendor to specify | |
| 3 | Model | Vendor to specify | |
| 4 | General Features | | |
| 4.1 | Mounting | Panel Mount | |
| 4.2 | Operating temperature | Upto 40°C | |
| 4.3 | Storage temperature | Upto 40°C | |
| 4.4 | Ingress Protection | IP20(Min) | |
| 5 | Technical Features / Specifications | | |
| 5.1 | Input Voltage | 20-30 V _{dc} | |
| 5.2 | Output Voltage | 13-14 V _{dc} | |
| 5.5 | Design Current | 0-250mA | |
| 5.6 | FF terminator | To be provided | |
| 5.7 | Segment Block | Should be able to power up 8 FF transmitters simultaneously | |
| 6 | Accessories | <ul style="list-style-type: none"> • Test Report • User Manual | |

4.17.11 Fixed DC Power Supply

| Sr. No. | Specifications | | Vendor Compliance Technical Literature / Brochure (Reference Page No.) |
|---------|---------------------------------|-----------------------|--|
| 1 | Item | Fixed DC power supply | |
| 2 | Make | Vendor to specify | |
| 3 | Model | Vendor to specify | |
| 4 | Technical Specifications | | |
| 4.1 | Mounting | Panel Mount | |
| 4.2 | Input Voltage | 230V, 1 Ph. | |
| 4.3 | Output Voltage | 24V DC | |
| 4.4 | Input current | (0.5-1) A | |
| 4.5 | Working Voltage | 90 to 270 V AC | |
| 4.6 | Line frequency | 50/60 Hz | |
| 4.7 | Output current | 5A | |
| 4.8 | Line Regulation | +/- 1% | |
| 4.9 | Load Regulation | +/- 1% | |
| 4.10 | Ripple max | +/- 1 mV RMS | |
| 4.11 | Noise max | +/- 1 mV RMS | |
| 4.12 | Short Circuit Protection | To be provided | |

| | | | |
|------|-------------------------|--|--|
| 4.13 | Over Voltage Protection | To be provided | |
| 5 | Accessories | Test Lead Operation Manual Test Report Fuses (2 Nos each type) | |

4.17.12 230V 15/5A AC Sockets

| Sr. No. | Specifications | | Vendor Compliance Technical Literature / Brochure (Reference Page No.) |
|---------|-------------------------------|---|--|
| 1 | Item | 230V 15/5A AC Sockets | |
| 2 | Make | Vendor to specify | |
| 3 | Model | Vendor to specify | |
| 4 | Technical details | | |
| 4.1 | Indication | ON/OFF Indication at the panel near to socket. Same to be confirm by bidder | |
| 4.2 | Sockets | Industrial Standards | |
| 4.3 | Type | Schuko | |
| 5 | Female Socket Details: | | |
| 5.1 | Voltage | 230V AC | |
| 5.2 | Pole | 2P+E | |
| 5.3 | Shutter | Yes | |
| 5.5 | Protection | IP 54 | |
| 6 | Male Socket Details | | |
| 6.1 | Voltage | 230V AC | |
| 6.2 | Current | 16A | |
| 6.3 | Pole | 2P +E | |
| 6.4 | Protection | IP 54 | |
| 6.5 | Contact | Standard | |
| 7. | Accessories | Male Plug for each socket | |

Note: One converter for each socket to be provided.

4.17.13 Mains Power Control

| Sr. No. | Specifications | | Vendor Compliance Technical Literature / Brochure (Reference Page No.) |
|---------|---|----------------------------------|--|
| 1 | Item | Mains Power Control | |
| 2 | Make | Vendor to specify | |
| 3 | Model | Vendor to specify | |
| 4 | Earth Leakage Circuit Breaker(ELCB) specifications | | |
| 4.1 | Number of Poles | 2P | |
| 4.2 | Rated Current In | 40A | |
| 4.3 | Operating current | 30 mA | |
| 4.4 | Rated Voltage | 230V AC. $\pm 10\%$, 50 - 60 Hz | |
| 4.5 | Current Off-time | ≤ 300 ms | |
| 4.6 | Rated Residual | ≤ 0.5 mA | |
| 5 | MCB(Miniature Circuit Breaker) | | |
| 5.1 | Number of Poles | 1P | |
| 5.2 | Rated Current In | 40A | |
| 6 | VAF meter | | |
| 6.1 | Digits | 4 Digits LED Display | |
| 6.2 | Measure | Voltage, Current, Frequency | |
| 6.3 | Voltage Accuracy | $\pm 1.0\%$ of range | |
| 6.4 | Current Accuracy | $\pm 1.0\%$ of range | |
| 6.5 | Frequency | 0.5% of mid frequency | |

Note: One no. of Main Power Control unit to be installed in Pressure and Temperature section.

4.17.14 Temperature Bath Table and Calibration Section

| Sr. No. | Specifications | | Vendor Compliance Technical Literature / Brochure (Reference Page No.) |
|---------|------------------------------------|---|--|
| 1 | Item | Temperature Calibration Section | |
| 2 | Make | Vendor to specify | |
| 3 | Model | Vendor to specify | |
| 4 | General Features | | |
| 4.1 | Test Bench Make | CRCA Sheet and Front Plates Made of Anodized Aluminium with Mimic panel for Test & Repair of Temperature Instruments. | |
| 4.2 | Design | Modular in Design, Enabling Easy Change of Arrangement. Laminated Top with Compressed Ply for carrying heavy duty Work. | |
| 4.3 | Type | Fully Powder Coated (RAL 7035 (Colour)) | |
| 4.4 | Test Bench Dimension | 2000mm (L) x 1500mm (H) x 900mm (D) | |
| 4.5 | CRCA Sheet Thickness | 1.5 mm | |
| 4.6 | Anodized Aluminium Panel Thickness | 6 mm | |
| 4.7 | Table Top with Laminated Thickness | 35 mm | |
| 4.8 | Illumination | Overhead Lamp for Illumination | |
| 4.9 | Wiring | Wiring with cross ferruling, connections with crimped cable legs and proper channeling. | |

Note: Proper cut out should be provided to mount/ access Dry and Liquid Temperature Bath, DAQ & Environment Monitor as mentioned in the NIT

4.17.15 Temperature Calibration Bath

| Sr. No. | Specifications | | Vendor Compliance Technical Literature / Brochure (Reference Page No.) |
|---------|--------------------------|---|--|
| 1 | Item | Temperature Calibration Bath | |
| 2 | Make | Vendor to specify | |
| 3 | Model | Vendor to specify | |
| 4 | General Features | | |
| 4.1 | Range | 35°C to 300 °C | |
| 4.2 | Features | Controller with display. | |
| | | RS-232 interface | |
| 5 | Technical details | | |
| 5.1 | Stability | 0.02 deg C at FS | |
| 5.2 | Display Resolution | 0.1 °C | |
| 5.3 | Bath depth | 200 mm approx | |
| 5.4 | Interface | RS-232 | |
| 5.5 | Power supply | AC 230 V,50/60Hz | |
| 5.6 | Power Consumption | max 14A | |
| 5.7 | Power Rating | 3000 W | |
| 6 | Accessories | Power cord | |
| | | Operation Manual | |
| | | Oil for bath | |
| | | Trolley/ wheel for easy movement | |
| | | Cover with mounting fixtures | |
| | | Interface cable | |
| | | 8 Slot SS Plate for holding 8 sensor of different sizes | |

4.17.16 Dry Block Temperature Calibrator

| Sr. No. | Specifications | | Vendor Compliance Technical Literature / Brochure (Reference Page No.) |
|---------|--------------------------|--|--|
| 1 | Item | Temperature Calibration Bath | |
| 2 | Make | Vendor to specify | |
| 3 | Model | Vendor to specify | |
| 4 | General Features | | |
| 4.1 | Range | 50 °C to 650 °C | |
| | | Possibility to check temperature switches | |
| | | Low weight and compact design | |
| | | Simple operation | |
| 5 | Technical details | | |
| 5.1 | Temperature | 50 to 650 °C | |
| 5.2 | Accuracy | ±0.6 °C at 650 °C | |
| 5.3 | Stability | ±0.1 °C at 650 °C | |
| 5.4 | Display Resolution | 0.01 °C | |
| 5.5 | Axial Uniformity | 0.5 °C at 650 °C | |
| 5.6 | Heating time | 60 min | |
| 5.7 | Cooling time | 240 min | |
| 5.8 | Immersion depth | 150 mm (Minimum) | |
| 5.9 | Insert dimensions | Ø 25 mm x 150 mm (Minimum) | |
| 5.10 | Interface | RS-232 or USB | |
| 5.11 | Power supply | AC 230V,50/60Hz | |
| 5.12 | Power consumption | 1200 W | |
| 5.13 | Weight | 20 Kg (Maximum) | |
| 6 | Accessories | Two Drilled and one undrilled Inserts – As per M/s OIL Specification | |
| | | Replacement tool | |
| | | Interface cable | |
| | | Power cord with safety plug | |
| | | Storage Case | |
| | | Operation Manual | |

4.17.17 **Laboratory Environmental Monitor**

| Sr. No. | Specifications | | Vendor Compliance Technical Literature / Brochure (Reference Page No.) |
|---------|----------------------------|--|--|
| 1 | Item | Environmental Monitoring System | |
| 2 | Make | Vendor to specify | |
| 3 | Model | Vendor to specify | |
| 4 | Technical details | | |
| 4.1 | Function | Should able to display Temperature, Barometric Pressure, Relative Humidity and Dew point. | |
| 4.2 | Mounting | Panel Mounted | |
| 4.3 | Pressure Range | 10 to 1100 mbar | |
| 4.4 | Pressure Resolution | 0.1mbar | |
| 4.5 | Pressure Accuracy | +/- 2 mbar | |
| 4.6 | Relative Humidity | Accuracy/ Range | 10 to 90% : $\pm 2\%$ 5 to 10%, 90 to 95% : $\pm 3\%$ 0 to 5% , 95 to 100% : $\pm 4\%$ |
| | | Non-linearity | $\pm 3\%$ |
| | | Hysteresis | $\pm 1\%$ RH |
| | | Response Time | 10 seconds |
| | | Repeatability | $\pm 0.1\%$ |
| | | Resolution | 0.1% |
| 4.7 | Temperature Accuracy/Range | 5 to 45 °C | +/- 0.5 °C |
| | | 45 to 70 °C | +/- 1 °C |
| 5 | Accessories | <ul style="list-style-type: none"> • Communication Cable • Power Cable • Manual | |

4.17.18 Standard Platinum Resistance Thermometer

| Sr. No. | Specifications | | Vendor Compliance Technical Literature / Brochure (Reference Page No.) |
|---------|--------------------------|--|--|
| 1 | Item | SPRT | |
| 2 | Make | Vendor to specify | |
| 3 | Model | Vendor to specify | |
| 4 | Technical details | | |
| 4.1 | Temperature Range | -100 °C to 660 °C | |
| 4.2 | Calibrated Accuracy | ± 0.006 °C at -100 °C ± 0.03 °C at 660 °C | |
| 4.3 | Stability | ± 0.002 °C | |
| 4.4 | Nominal Resistance | 30 Ω | |
| 4.5 | Sensor connection | 4-wire connection | |
| 4.6 | Termination | Gold-plated spade lugs | |
| 4.7 | Protective Case | Protective Case To be Provided | |

Note: Size and length should be as per quoted dry block temperature calibrator.

4.17.19 Bend Type Secondary PRT

| Sr. No. | Specifications | | Vendor Compliance Technical Literature / Brochure (Reference Page No.) |
|---------|---------------------------------|--|--|
| 1 | Item | Bend Type Secondary PRT | |
| 2 | Make | Vendor to specify | |
| 3 | Model | Vendor to specify | |
| 4 | Technical details | | |
| 4.1 | Temperature Range | -100 °C to 660 °C | |
| 4.2 | Relative Accuracy | ± 0.007 °C at -100 °C ± 0.08 °C at 660 °C | |
| 4.3 | Nominal Resistance at 0.01degC. | 100 ± 0.5 | |
| 4.4 | Bend | 90° | |
| 4.5 | Temperature Co-efficient | 0.003926 Ω/Ω/°C | |
| 4.6 | Sensor connection | 4-wire connection | |
| 4.7 | Protective Case | Protective Case To be Provided | |

Note: Size and length should be as per quoted dry block temperature calibrator.

4.17.20 Temperature Data Acquisition System (DAQ)- 10 Channel

| Sr. No. | Specifications | | Vendor Compliance Technical Literature / Brochure (Reference Page No.) |
|---------|--------------------------------|--|--|
| 1 | Item | Temperature data | |
| 2 | Make | Vendor to specify | |
| 3 | Model | Vendor to specify | |
| 4 | Technical Specification | | |
| 4.1 | Mounting | Panel Mount | |
| 4.2 | Measure | Thermocouples, PRTs, thermistors, dc voltage, dc current, and resistance | |
| 4.3 | Display | 6 ¹ / ₂ Digit | |
| 4.4 | Accuracy | PRTs: ± 0.008 °C Thermocouples: ± 0.6 °C | |
| 4.5 | Input channels | 10 Channel | |
| 4.6 | Scan speed | Up to 10 channels per second | |
| 4.7 | Modes of operation | Scan, Monitor, Measure, Digital Multimeter (DMM) | |
| 4.8 | Interface | USB or RS-232 | |
| 4.9 | Operating temperature | 20 to 40 °C | |
| 4.10 | Relative humidity | 0 to 90 % R.H. (non-condensing) | |
| 5 | Accessories | Interface Cable | |
| | | Operation Manual | |
| | | Fuses (2 Nos each type) | |

4.17.21 Soldering & De soldering Station

| Sr. No. | Specifications | | Vendor Compliance Technical Literature / Brochure (Reference Page No.) |
|---------|---------------------------------|---------------------------------------|--|
| 1 | Item | Soldering & De-soldering Station | |
| 2 | Make | Vendor to specify | |
| 3 | Model | Vendor to specify | |
| 4 | Features | | |
| 4.1 | Mounting | Panel Mounted | |
| 4.2 | Power unit | 300 W | |
| 4.3 | Content | Self-contained vacuum and air turbine | |
| 4.4 | Keypad | Programmable temperature memory key | |
| 4.5 | Safe condition | ESD Safe | |
| 5 | Technical Specifications | | |
| 5.1 | Pump | Minimum vacuum 0.5 bar | |
| 5.2 | Minimum delivery rate | 15 ltr/min. | |
| 5.3 | Hot air Minimum | 5 ltr/min. | |

| | | | |
|-----|--------------------|--|--|
| 5.4 | Soldering iron | 50 °C – 450 °C | |
| 5.5 | De-soldering iron | 50 °C – 450 °C | |
| 6 | Accessories | <ul style="list-style-type: none"> • Soldering Iron • De-soldering Iron • Standard Tips • User and Service Manual • Filters (2 sets) • Fuses (2 nos. each type) | |

4.17.22 Variable AC power Supply (0-260V, 10A)

| Sr. No. | Specifications | | Vendor Compliance Technical Literature / Brochure (Reference Page No.) |
|---------|---------------------------------|--|--|
| 1 | Item | Variable AC power supply(0-260 V,10 A) | |
| 2 | Make | Vendor to specify | |
| 3 | Model | Vendor to specify | |
| 4 | Technical Specifications | | |
| 4.1 | Mounting | Panel Mount | |
| 4.2 | Input power | 230V AC, 50 Hz, 1 Ph. | |
| 4.3 | Output | (0- 260) V AC | |
| 4.4 | Output current | 10A | |
| 4.5 | Operation | Manually operated | |
| 4.6 | Scale | White lettering on Back | |
| 4.7 | Indication | Digital volt and ammeter | |
| 4.8 | Control | Individual MCB | |
| 4.9 | Socket | Industrial Standard | |
| 5 | Accessories | Male Socket – 1 No | |

4.17.23 Industrial Computer

| Sr. No. | Specifications | | Vendor Compliance Technical Literature / Brochure (Reference Page No.) |
|---------|-----------------------|--|--|
| 1 | Item | Industrial Computer | |
| 2 | Make | Vendor to specify | |
| 3 | Model | Vendor to specify | |
| 4 | Technical details | | |
| 4.1 | Mounting | Panel Mounted Display | |
| 4.2 | Display | 19 inch SXGA TFT LCD LED Backlight with touch screen | |
| 4.3 | Contrast Ratio | 1000:1 | |
| 4.4 | Storage | Supports 2x 2.5" SATA 2.0 or SATA 3.0 HDD | |
| 4.5 | Resolution | 1280 x 1024 | |
| 4.6 | Ingress Protection | IP65 | |
| 4.7 | Operating Temperature | Up to 50degC | |

| | | | |
|------|---------------------|--|--|
| 4.8 | Storage Temperature | Up to 60degC. | |
| 4.9 | I/O | 4 (3 x RS-232, 1 x 485) | |
| | | 1 x GPIO | |
| | | 2 x Extra ports | |
| | | 5 x USB Host(USB 2.0 front, 4 USB 3.0) , 2 x LAN | |
| | | VGA x1; DVI x1; DP x1 | |
| | | 2 (1 x keyboard and 1 x mouse) | |
| | | 2 (Mic-in, Line-out) | |
| 4.10 | Optical Driver | 1 x Slim Type DVD-RW | |
| 4.11 | Power Input | 100-240 VAC @ 50/60 HZ | |
| 4.12 | Processors | Intel Core i7 with Q87 chipset (up to 3.1GHZ) | |
| 4.13 | Memory | 16 GB DDR3 | |
| 4.14 | Hard Disk Capacity | 1 TB | |
| 4.15 | Operating System | Latest window version | |
| 5 | Accessories | <ul style="list-style-type: none"> • Wireless Keyboard • Wireless Mouse • Licence Operating System • Licence MS Office. • Driver CD • Manuals • Power and Signal Cables | |

4.17.24 **Work Bench (Anti-static)**

| Sr. No. | Specifications | | Vendor Compliance Technical Literature / Brochure (Reference Page No.) |
|---------|--------------------------|--|--|
| 1 | Item | Work Bench (anti-static) | |
| 2 | Make | Vendor to specify | |
| 3 | Model | Vendor to specify | |
| 4 | General Features | | |
| 4.1 | Work Bench Purpose | To perform repair, adjustments, validation, operate precision pressure balances, etc. | |
| 4.2 | Material of Construction | 2.5mm thick CRCA with powder coating (RAL7035) | |
| 4.3 | Table top | Thick laminated wooden table top with Antistatic mat | |
| 4.4 | Work Bench Dimension | 2000(L)X700(H)X1000(D)mm | |
| 4.5 | AC Sockets | "230V, 50Hz, 5/15A AC Power socket - 4nos. MCB shall be provided for protection Sockets should have in-build on/off indication" | |
| 4.6 | DC Sockets | "24V, 5A Fixed DC Power supply with 2 banana | |

| | | | |
|-----|-------------|--|--|
| | | sockets | |
| | | MCB shall be provided for protection" | |
| 4.7 | Portability | Work bench should have rugged wheels for sake of portability | |
| 4.8 | Storage | Work bench should be provided with 3 rack drawer to store documents and small instruments and instrument spares. | |

4.17.25 **Laser B/W Printer**

| Sr. No. | Specifications | | Vendor Compliance Technical Literature / Brochure (Reference Page No.) |
|---------|--------------------------|---|--|
| 1 | Item | Printer | |
| 2 | Make | Vendor to specify | |
| 3 | Model | Vendor to specify | |
| 4 | Technical details | | |
| 4.1 | Print Technology | Laser | |
| 4.2 | Print quality | Black, 600x600 dpi | |
| 4.4 | Paper handling | Input tray : 100 Sheets | |
| | | Output tray : 50 Sheets | |
| 4.10 | Print speed | Up to 20 pages per minute | |
| 4.11 | Warm Up Time | 10 sec | |
| 4.12 | Power Consumption | 500 Watt | |
| 4.13 | Types of Paper | Paper (Plain, envelopes, labels, cardstock, transparencies) | |
| 4.14 | Power Requirements | 230, 50 Hz | |
| 4.15 | Accessories | <ul style="list-style-type: none"> • Laser Toner Cartridge – Two No. • Connecting Cable • Power Cable • Driver Software • Manual | |

4.17.26 **Calibration software for Pressure and Temperature**

| Sr. No. | Specifications | | Vendor Needs Provide Compliance |
|---------|-------------------------|--|---------------------------------|
| 1 | Item | Calibration software-Licensed Version | |
| 2 | Make | Vendor to specify | |
| 3 | Model | Vendor to specify | |
| 4 | General Features | | |
| 4.1 | System | The Calibration System Software communicated with the Supplied, Pressure Controllers, Dry Block and Liquid Bath Temperature Calibrators, environment lab monitor, 6 1/2 digit multimeter. | |
| 4.2 | Mode of Calibration | The Software can be set for no. of points that the transmitter to be calibrated along with the duration of the next points for Automatic Calibration on single or multiple units under test (UUTs), including leak testing. It should able to calculate coefficients for each temperature sensor tested. | |
| 4.3 | Storage | The recorded Points are stored as left and same is maintained in the data base, can be retrieved with Tag No, Sl. No., Model No. or Date of Calibration in the future. | |
| 4.4 | Data Logging | The Data's can be exported in Excel Format, where we can create many number formats with Logos as needed and get customized. | |
| 4.5 | Report Generation | The supplied software should have provision for online report generation as per user format | |

*** Bidder having two different versions of software for Pressure and Temperature parameter needs to specify two model numbers.**

4.17.27 **Standard tool Kit**

| Sr. No. | Specifications | | Vendor Needs Provide Compliance |
|---------|--|-------------------|---------------------------------|
| 1 | Item | Standard Tool Kit | |
| 2 | Make | Vendor to specify | |
| 3 | Model | Vendor to specify | |
| 4 | General Contents/Package | | |
| | Item | Quantity | |
| 4.1 | Crimping tool up-to 6 Sq mm | 1 No | |
| 4.2 | Stripping Tool up-to 10 Sq mm | 1 No | |
| 4.3 | Insulation removal Tool up-to 40 mm | 1 No | |
| 4.4 | Wire cutter up-to 50 Sq mm | 1 No | |
| 4.5 | Normal screw driver set with large bearing surface head of thickness of 0.6 mm, length 3.5 mm & 180 mm as overall length of screwdriver. | 1Set | |
| 4.6 | Insulated Screwdriver set with large bearing surface head of thickness of 0.4 mm, length 2.5 mm & 150 mm as overall length of screwdriver. | 1Set | |
| 4.7 | 1000 VAC & 1500 V DC protection-insulated screw fox type insulated pozidriv screwdriver with bearing surface head of size PZ 1 & 150 mm as overall length. | 1Set | |
| 4.8 | Precision Screw driver set | 1Set | |
| 4.9 | Electrician Plier -8"suitable for 1000 V AC & 1500 V DC | 1 No | |
| 4.10 | Long Nose Plier – 6" | 1 No | |
| 4.11 | Adjustable Wrench - 8" ,12" , 14" | 1 No each | |
| 4.12 | Test Pen 100-500V AC | 1 No | |
| 4.13 | Knife – 8mm | 1 No | |
| 4.14 | Mini-hacksaw – 8 ¾" | 1 No | |
| 4.15 | Allen Key Set – 10 Pcs | 1 Set | |
| 4.16 | Wood handle Nail Hammer | 1 No | |
| 4.17 | Measuring Tape – 8 m | 1 No | |
| 4.18 | Scissor | 1 No | |
| 4.19 | Torch Light | 1 No | |
| 4.20 | Kit bag for Tools | 1 No | |
| 4.21 | ¼" tube bender | 1 No | |
| 4.22 | ½" tube bender | 1 No | |
| 4.23 | 3/8" tube bender | 1 No | |
| 4.24 | Tube cutter | 1 No | |
| 4.25 | Allen-key set | 1 set | |
| 4.26 | Non Sparking combination spanner set upto size 22 | 1 set | |

4.17.28 **UPS-2KVA**

| Sr. No. | Specifications | | | Vendor Compliance Technical Literature / Brochure (Reference Page No.) |
|---------|-------------------|---|--|--|
| 1 | Item | UPS | | |
| 2 | Make | Vendor to specify | | |
| 3 | Model | Vendor to specify | | |
| 4 | Technical details | | | |
| 4.1 | Type | 2 KVA Double conversion On-Line UPS System with IGBT & DSP based technology | | |
| 4.2 | UPS rated power | 2 KVA/1.8 KW | | |
| 4.3 | Input Power | Voltage Range | 160 - 276 V AC, 1Phase | |
| | | Input Power Factor | 0.8 | |
| | | Input Frequency range | 50 ± 5 Hz(45 - 55 Hz) | |
| 4.4 | Output Power | Output Voltage | 230 ± 1% of rated output voltage, AC, 1 phase | |
| | | Static Regulation | +/- 3% of nominal regulation | |
| | | Output Frequency | 50 Hz ± 1% | |
| | | Output waveform | Sinusoidal with relative harmonic not exceeding 4% for linear and 5% for non-linear load | |
| | | Output Power Factor | 0.8 or better | |
| 4.5 | Load Crest Factor | 3:1 | | |
| 4.6 | Efficiency | > 90% in high efficiency mode; > 85% in normal mode. | | |
| 4.7 | Battery | Type | Inbuilt, Sealed Maintenance Free (SMF) Lead Acid battery | |
| | | Backup time | The UPS should capable to provide 10 minutes battery backup time at full load. | |
| | | Battery Rating & Configuration | Total number of batteries required for 10 min backup at full load, Voltage of each battery, Ampere-Hour rating of each battery should be clearly mention in the offer. | |

| | | | | |
|------|-----------------------|--|--|--|
| 4.8 | Bypass Facility | Static & Manual Bypass | | |
| 4.9 | Indication | LCD Panel: The UPS should have a LCD panel with keypad and backlight. It should provide useful information about the UPS itself, operating status & diagnostic indication, load status, events measurements, and settings. The Event Log and alarms should display on the LCD Panel. | | |
| 4.10 | Operation mode | | | |
| | Cold Start Feature | Should allow UPS to start on Batteries without utility input | | |
| | Auto Re-Start Feature | The UPS should automatically restart if utility returns after the output was shut off due to exhausted batteries | | |
| | Automatic Bypass | UPS should have automatic Transfer to Bypass When Overload condition occurs | | |
| 4.11 | Environment | Ambient Operating Temperature | Up to 40 deg C | |
| | | Relative Humidity | Should not exceed 95% non-condensing | |
| | | Audible Noise | <70dBA at any load between 0& rated output | |

5. Safety

All related safety norms related to this work as per industrial safety rules & regulation guided by Govt. Of India/or State Govt. shall be fulfilled by Bidder.

6. Bill of Materials

Scope of supply for the test & calibration bench shall be as per BOM as indicated in **Annexure No 6-1**. If anything that has not been envisaged in BOM, but required for commissioning/ completeness of this project, bidder shall supply it.

7. Scope of Services

The scope of services to be provided has been indicated in **Annexure No 7-1**. If anything that has not been envisaged in the scope of services, but required for commissioning/ completeness of this project, bidder shall supply it.

8. List of Preferred Makes

All the equipment/ components required for test & calibration bench shall be procured from the list of preferred makes given at **Annexure- 8-1**.

9. Battery Limit:

Single phase AC power supply will be provided from nearest available source at STF workshop. The Bidder shall have to provide necessary switch/cables of adequate capacity and protection at his own cost. The power will be supplied from M/s OIL's source to the Bidder's switch. Necessary extension cables for further distribution shall be supplied, laid and maintained by the successful Bidder.

10. Recommended Spare Parts for 02 Year Maintenance / Operation:

The bidder shall submit a list of recommended spares/consumables and separately quote item wise prices for spares/consumables required for 2 (two) years operation/maintenance of the system. The bidder shall furnish particulars of list of two years recommended spares/consumables in the attached **Schedule 10-1**. The price for the same shall remain same for two years from the date of supply. OIL may procure the same through separate Purchase Order within two years. However, price will be not considered for bid evaluation.

11. Spares, Tools & Tackles etc

11.1 Commissioning Spares

The Bidder shall include in his scope supply all necessary commissioning spares, consumables, special tools and tackles etc. The quantity of commissioning spares shall be sufficient to meet the requirement during trial run, commissioning. The bidder shall furnish particulars of commissioning spares in the **Schedule 11.1-1**

11.2 Special Tools & Tackles

The Bidder shall also supply a toolbox containing all necessary tools and special tools in particular required for maintenance of the system. List of special tools & tackles to be supplied in the tool box shall furnish particulars in the attached **Schedule 11.2-1**.

12. Brief Technical Information/ Specification of the Proposed System

The Bidder shall submit their offer with a brief technical information/ specification of the proposed system.

All the items of the test bench shall be complete in all respects and any item or accessory not covered in this specification but essential for completeness of the system which includes proper design, smooth & efficient operation and maintenance of the system shall be considered within the bidder's scope and no extra claims shall be admissible on such account.

13. M/s OIL's Obligation

M/s OIL will provide necessary AC room for installation of Test Bench. For mounting & installation of Test Bench & its accessories, necessary civil work if any is to be done by bidder.

14. Project Execution Schedule

Time frame for project completion is to be schedule in two parts. The first part is for supply of items and second part is for Installation and Commissioning. The first part supply of items has to be completed within **Twenty weeks (20) from issue of Purchased Order**

(PO) and the second part i.e. Installation and Commissioning has to be completed within **Eight weeks (8) from issue of site clearance**. The Bidder needs to provide a tentative project schedule along with bid. Successful bidder is required to submit their project execution plan (Details of each task pertaining to parts procurement, assembly, testing and function test at works, delivery and shipment schedule) immediately (preferably within 2 weeks) after award of PO. This should also include submission of drawings/design calculations for M/s OIL's approval and deputation of engineer / technicians for installation, commissioning, testing and final acceptance test at site including training. OIL will approve such documents within 15 days from submission of correct, complete & last set of documents.

15. Exclusions & Deviations

OIL expects bidders to comply with all tender specifications and terms & conditions in toto. However, exclusions as well as deviations from the Tender Specification, if any, shall be clearly stated under separate heads marked as "Exclusions" as per **Schedule 15-1** and "Deviations" as per **Schedule 15-2** respectively quoting the index and serial reference of Tender Specification.

16. Drawing/ Documents/ Data to be Furnished

The offer shall be accompanied with various layout drawing, showing the major equipment and auxiliaries, details of services & facilities.

16.1 The Bidder shall submit along with the bid, the drawings / documents / catalogues/ related data as per the following details:

- General arrangement drawings of all units, equipment and systems with overall and relevant dimensions.
- All schedules duly filled in as mentioned in this Tender Specification and enclosed herewith
- Manufacturers' catalogues/ brief technical descriptions of offered equipment and bought-out items.
- Schedule of quantity of equipment
- Project schedule (Bar chart/PERT Network).
- List of exclusions, deviations and reference list
- Weight and mounting arrangement of each critical item/ equipment
- List of two years operational and maintenance spares
- List of commissioning spares.
- Brief technical write up for the proposed test & calibration bench.
- Drawings /data listed at various clauses at Chapter 4.0 and elsewhere mentioned in this Tender Specification.
- Any other details which may be felt necessary.
- The Bidder shall note that above drawings & documents listed are minimum requirement only. The Bidder shall ensure that all other necessary write-ups, curves and information, required to fully describe the equipment and system offered, are submitted with this offer.

16.2 The minimum but not limited to the below documents/ as built drawings (Hard Copy along with softcopy in CD/DVD) to be supplied by successful bidder along with the test bench (The language of these documents should be English).

- Overview drawings.

- Test Bench GA drawings & Fabrication drawings
- System Configuration Drawings
- Power supply scheme drawings for Test bench, pump, PC etc.
- Specification / Data sheets for each item
- O & M manuals
- Wiring diagram.
- Loop schematic drawings
- OEM's Traceable Calibration Certificates for each item (as **Annexure-19-1**)
- Accredited Calibration Certificates for each item (as **Annexure-19-2**)
- Temperature calibration table & Calculation of the characteristic constant
- Part lists
- All QA documents/test documents related to manufacturing.
- Function test at shop.
- License copy in original of all software's loaded in the Computer PC, including OS to be supplied.

16.3 During design stage successful bidder need to submit all the drawings/ document for M/s OIL's approval. The drawings/ document submitted by the successful bidder shall be reviewed & commented (or approved) by M/s OIL within 14 days of receipt of such drawings/ document. Successful bidder shall incorporate all the comments and resubmit to M/s OIL within 15 days' time from the date of M/s OIL's comments.

16.4 Approval of drawings, design/data sheets by M/s OIL will not relieve the successful bidder of his responsibilities for correctness, adequacy of the system and completeness of his work as per the contract.

16.5 Drawings/Document submitted by the successful bidder shall be thoroughly checked and signed by him before submission. All reference drawing numbers must be mentioned in each drawing submitted for approval. The drawings shall be complete with Bill of Material.

17. Inspection and Testing(FAT):

17.1 The successful bidder shall ensure that the material to be supplied against this order shall be individually inspected, tested and analysed in terms of the specifications attached to the order and the relevant codes and practices specified therein by expression or implication.

17.2 The successful bidder shall make available to M/s OIL or any other individual/agency authorised by M/s OIL for the purpose of inspection, all its records and results in respect of inspection, tests and analyses conducted by it as part of their manufacturing and testing operations under the applicable codes and practices specified by expression or implication in the order.

17.3 For false calls for inspection and for the cases where material is rejected on inspection, the successful bidder will bear the actual cost of inspection incurred/suffered by the M/s OIL.

17.4 Successful bidder will have to submit final GA drawing including all the technical details including the Factory acceptance test procedure and inspection plan to

M/s OIL for approval at least 2 weeks ahead of inspection schedule. M/s OIL will depute two (2) engineers to witness the complete functions and operation of the all the items of the Test Bench at one workplace. M/s OIL will bear the expenses of transportation, accommodation, boarding / lodging etc. for its personnel. The acceptance of the test bench will be signed by M/s OIL representative at that work place after final successful functional test and demonstration. **However final acceptance of materials will be only after successful installation & commissioning.**

17.5 Successful bidder shall offer for FAT either in India or in aboard based on their work place.

17.6 Unless otherwise specifically authorised by M/s OIL in writing, the successful bidder shall not ship or despatch for any material under the purchase order before Inspection/FAT.

18. Training

18.1 During the FAT visit of OIL's engineers, the successful bidder shall arrange comprehensive training at their manufacturing plant/works for a period of minimum 03 (three) Days on Operation & Maintenance, Troubleshooting and Working Principle of all the critical items of the test bench.

18.2 After successful installation and commissioning the vendor needs provide detail onsite training to M/s OIL personnel consist of 4 (Four) persons for minimum one-week duration (05 Days). The training is to be supplemented by manual in hard bound copy as well as soft copy (Minimum 2 sets).

Above trainings (18.1 & 18.2) will be without any additional cost to OIL.

19. Certification of Standard/Master instruments from approved laboratory:

All the instruments as per **Annexure-19-1** installed in the test bench should supply along with the necessary manufacturer's traceable calibration certificate. The standard/Master instruments provided in the **Annexure-19-2** shall be supplied along with accredited calibration certification. Same should be confirmed by bidder during bid.

20. INSTALLATION, COMMISSIONING AND TESTING (SAT):

20.1 The charges of Installation, commissioning, Site Acceptance Test (SAT), putting it into operation and training at M/s OIL's premises are to be included in the total cost to be quoted by the bidder. The transportation including local transportation, accommodation, boarding / lodging for successful bidder's supervisor / technicians are to be included in the total price.

20.2 Successful bidder will have to follow the M/s OIL's safety standards and specifications/guidelines during installation and commissioning works. Successful bidder will have to identify the supervisor/technicians in advance and furnish all the details proving their proper identity (Identity issued by Govt authorities).

20.3 Please note that the initial consumables shall be scope of the bidder. Bidder to clearly indicate the details of initial consumables offered along with supply of this test bench.

20.4 The system will be deemed to be commissioned after 5 days (daily) complete test & calibration of equipment bench in STF, Duliagan.

20.5 Site Acceptance Test (SAT), will be as per sample format given in **Schedule 20.5-1**.

21. WARRANTY / GUARANTEE:

21.1 The successful bidder warrants that the equipment are new and of high quality and that the goods will be free of defects in design, materials as well as workmanship for a period of TWELVE (12) months from the date of successful commissioning.

21.2 If within the validity of the above stipulated warranty period, the subject equipment or any parts thereof are found defective because of design, workmanship or materials deficiency, the successful bidder shall repair or replace the equipment to the satisfaction of M/s OIL at his own expense.

22. SPECIAL INSTRUCTIONS TO BIDDER

22.1 Bidder needs to comply all the points mentioned in the **Technical checklist** attached as per **Annexure-1** and same to be submitted along with offer.

22.2 All equipment/materials used in the subject package shall be according to the specification given herein and any deviation should be clearly brought-out in the offer. No mention of deviation will mean that the bidder has accepted the specification given herein.

22.3 Specification of all the equipment under **Chapter: 4** in the test bench should be supported by technical catalogue/ literature/manuals. The bidder should provide all the supporting documents along with the bid. **Specification without supporting document will not be considered for evaluation.**

22.4 The Bidder shall include in his supply a complete new and unused set of all special tools & tackles required for operation and maintenance of the plant/equipment offered.

22.5 The plant and equipment supplied shall be new and best of its kind and of latest technology. All materials and equipment shall comply with latest codes and standards, applicable nationally / internationally. Preferably, all equipment and accessories shall confirm to the latest Indian Standards wherever applicable. All electrical equipment supplied shall be designed, manufactured, tested & erected as per the latest revision of CEA Regulations, Statutory requirements of the Govt. of India, Govt. of Assam. In the event of requirement of TS exceeding the requirement of corresponding standards, regulations & safety codes, the specification provided in the TS shall govern. In the event of conflict between standard regulation & TS, the most stringent shall be applied.

22.6 The Bidder shall use new, good and tested quality materials. The workmanship shall be of high quality.

- 22.7** Layout of test bench and equipment shall have provision for easy and safe movement of operation / maintenance personnel for operation / inspection. Adequate space for dismantling / removal of equipment / parts for repair shall also be built in the layout. All working parts of the equipment shall be easily accessible and maintainable. There should be a proper arrangement for convenience of operation, inspection, maintenance, replacement & repair. Fast wearing parts shall be accessible for replacement/maintenance without necessitating removal of other parts. All like parts of the equipment supplied shall be inter-changeable.
- 22.8** After erection, all equipment, pipes, structures, etc., shall be thoroughly cleaned. If required painted with one coat of primer and two coats of approved colour paints. Paints shall be of good quality and shall be strictly as per instructions and recommendations of the paint manufacturer and to the approval of M/s OIL.
- 22.9** Execution of entire work shall be carried out in such a manner that normal working of the workshop is not interrupted.
- 22.10** The Successful Bidder shall obtain written approval/clearance from the M/s OIL at each stage or before start of the next stage of site work. The Successful Bidder with the approval of the M/s OIL shall decide the stages.
- 22.11** The Successful Bidder shall ensure deputation of well experienced engineers and technical staff from various disciplines as per requirement for erection, testing and commissioning of the test bench.
- 22.12** All the manufacturing / fabrication works shall be carried out only on the basis of approved drawings and schemes or as directed by M/s OIL. It is solely the responsibility of the Successful Bidder to ensure that all working drawings prepared by him bear the stamp of approval of M/s OIL's prior to start of work.
- 22.13** The successful Bidder shall stand guarantee against obsolescence of equipment under their scope of supply for a minimum period of 10 (ten) years after expiry of warranty period. The bidder shall also guarantee that discontinuity of production of any item offered, as a part of the system shall not affect the maintainability of the system for a minimum period of 10 (ten) years.
- 22.14** The successful Bidder shall also stand guarantee against all the offered software licensed for lifelong use and will update all the software with latest patch time to time free of cost.

TECHNICAL CHECK LIST FOR THE BIDDER

Important: Please tick relevant box and specify remarks, if any. Use additional sheets for remarks if required.

| NIT item No | Agree | Not Agree | Remarks | Technical Literature / Brochure(Reference Page No.) where applicable |
|--------------------|--------------|------------------|----------------|---|
| 3.1.1 | | | | |
| 3.1.2 | | | | |
| 3.1.3 | | | | |
| 3.1.4 | | | | |
| 3.1.5 | | | | |
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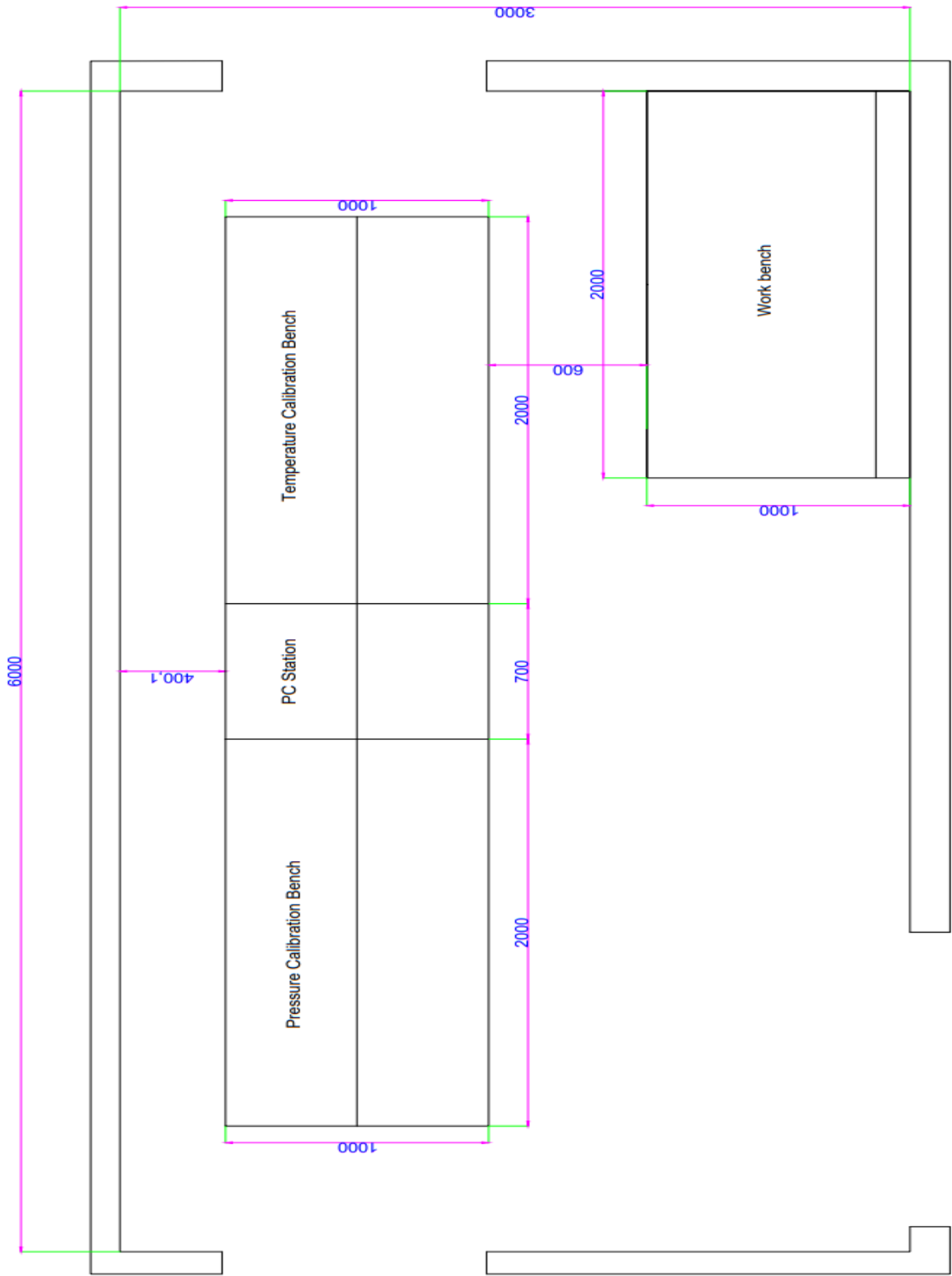
| NIT item No | Agree | Not Agree | Remarks | Technical Literature / Brochure(Reference Page No.) where applicable |
|--------------------|--------------|------------------|----------------|---|
| 4.1.1 | | | | |
| 4.1.2 | | | | |
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| 4.2.18 | | | | |
| 4.2.19 | | | | |

| NIT item No | Agree | Not Agree | Remarks | Technical Literature / Brochure(Reference Page No.) where applicable |
|--------------------|--------------|------------------|----------------|---|
| 4.2.20 | | | | |
| 4.2.21 | | | | |
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| 4.3.1 | | | | |
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| 4.16 | | | | |

| NIT item No | Agree | Not Agree | Remarks | Technical Literature / Brochure(Reference Page No.) where applicable |
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| 19 | | | | |

| NIT item No | Agree | Not Agree | Remarks | Technical Literature / Brochure(Reference Page No.) where applicable |
|--------------------|--------------|------------------|----------------|---|
| 20.1 | | | | |
| 20.2 | | | | |
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| 22.13 | | | | |
| 22.14 | | | | |

Tentative Schematic of the Test Bench with Room Size



BILL OF MATERIAL**Pressure Calibration Section**

| Sl. No. | Description | Qty |
|----------------|--|------------|
| 1 | Design, Manufacturing & Supply of Console Type Calibration set-up of Size 2000 mm (L) x 1500 mm (H) x 900 mm (D) with proper finishing & furniture as per TS. Dimension will be finalised during detail engineering. | 1 Set |
| 2 | Panel mounted type Pneumatic Pressure Controller Range (\pm 350 mbar) & necessary pressure generating system as per TS | 1 Set |
| 3 | Panel mounted type Pneumatic Pressure Controller Range (0 to 20 bar & 0 to 100 bar) & necessary pressure generating system as per TS | 1 Set |
| 4 | Hydraulic Dead Weight Tester (Range : 1 to 100 bar(minimum) with software | 1 No |
| 5 | Panel mounted type Multifunction Calibrator with Pressure Sensors (Pressure ranges: -350mbar to 350mbar, 0-100 bar) & HART as per TS along with HP & LP pumps | 1 lot |
| 6 | Panel mounted type 6.5 Digital Multimeter | 1 No. |
| 7 | Electrical Dry Vacuum Pump as per TS | 1 Set |
| 8 | Nitrogen Cylinder with trolley as per TS | 2 Set |
| 9 | Programmable DC Power Supply 0 to 32 VDC, 5A | 1 No. |
| 10 | FF Power Supply with Segment Block | 1 Set |
| 11 | Fixed DC Power Supply 24 VDC, 5A | 1 No. |
| 12 | Panel mounted type 0-250V,5A Variable AC Power Supply | 1 No. |
| 13 | 230V, 15/5A AC Sockets (Schuko) with suitable plug and converter as per TS | 4 Sets |
| 14 | Mains Power Control – MCB,ELCB, LED Indicator and Emergency Stop Push Button as per TS | 1 Set |

Temperature Bath Table & Calibration Section

| Sl. No. | Description | Qty |
|---------|--|--------|
| 1 | Design, Manufacturing & Supply of Console Type Calibration set-up of Size 2000 mm (L) x 1500 mm (H) x 900 mm (D) with proper finishing & furniture as per TS. Dimension will be finalised during detail engineering. | 1 No |
| 2 | Bench Mounted Temperature Calibration Bath (Ambient to 300°C) with trolley | 1 Set |
| 3 | Bench Mounted Dry Block Temperature Calibrator (up to 650°C) | 1 Set |
| 4 | Panel mounted type Lab Environment Monitor | 1 set |
| 5 | Standard Platinum Resistance Thermometer | 1 No |
| 6 | Bend Type Secondary PRT | 1 No |
| 7 | Panel mounted type Temperature 10 channel Data Acquisition System(DAQ) for RTD & T/C's | 1 No |
| 8 | Panel mounted type 6.5 Digital Multimeter | 1 No. |
| 9 | Programmable DC Power Supply 0 to 32 VDC, 5A | 1 No. |
| 10 | FF Power Supply with Segment Block | 1 Set |
| 11 | Fixed DC Power Supply 24 VDC, 5A | 1 No. |
| 12 | 230V, 15/5A AC Sockets (DIN Type) with suitable plug and converter as per TS | 4 No's |
| 13 | Mains Power Control – MCB,ELCB, LED Indicator and Emergency Stop Push Button as per TS | 1 Set |

Other Materials

| Sl. No. | Description | Qty |
|---------|---|-------|
| 1 | Work Bench (anti-static) | 1 No |
| 2 | Industrial Computer & Accessories | 1 Set |
| 3 | Soldering/De-Soldering Station | 1 Set |
| 4 | Laser B/W Printer as per TS | 1 No |
| 5 | Pressure Calibration Software licensed Version | 1 Set |
| 6 | Temperature Calibration Software licensed Version | 1 Set |
| 7 | All driver, Antivirus , Utility Software & OS with license | 2 Set |
| 8 | Armoured Stranded Copper cable for Power supply of proper sizes (depending on current & voltage rating) feeder to Vacuum pump etc. as per IS standard | 1 lot |
| 9 | Necessary hardware for laying & terminations of all type of cable gland | 1 lot |
| 10 | All necessary mounting Hardware, cabinets and Racks for Test bench & its' accessories. | 1 lot |
| 11 | All necessary Fittings, reducers, connectors, probes, BSP & NPT adaptors (1/8 inch, 1/4 inch, 1/2 inch & 3/8 inch) & other accessories as required | 4 lot |

| | | |
|----|---|--------|
| 12 | Flanges for Calibrating Capillary type Gauges & Transmitters (Remote Seal) | 1 lot |
| 13 | Necessary Hose & SS fittings having 150% rating calibration Certificates from OEM | 1 lot |
| 14 | All required tables (hard copy) for Temperature calibration (Calculation of the characteristic constant and table degree by degree) | 1 lot |
| 16 | Standard Tool Kit | 1 Set |
| 17 | Anti-static mat with Wrist band | 4 Nos. |
| 18 | Heavy Duty Mat | 2 Nos. |
| 19 | Chairs | 4 Nos. |
| 20 | List of Spares | 1 No |
| 21 | UPS – 2KVA | 1 No |
| 22 | Construction of earth pit (Chemical Earth pit) | 1 No |

Note-1: Scope of supply shall be as per BOM. If anything that has not been envisaged in BOM but required for commissioning/ completion of this project, bidder shall supply it.

Annexure: 7-1

Scope of Services

| | | |
|----|---|-------|
| 1 | Design, Engineering, Drawing Preparation , Application S/W Development for Test Benches satisfying all safety rules & regulations | 1 Job |
| 2 | Testing & Inspection prior to despatch | 1 Job |
| 3 | Packaging prior to despatch. | 1 Job |
| 4 | Handling & Storage at site maintaining all safety rules | 1 Job |
| 5 | Supply of necessary Erection Hardware, Accessories, Cabinets, Racks etc. as required to complete installation of Test Bench | 1 Job |
| 6 | Erection & commissioning of Supplied Materials maintaining all safety rules | 1 Job |
| 7 | Laying & Termination of Signal, Power & Communication Cables maintaining all safety rules | 1 Job |
| 8 | Installation Works for Erection of Supplied Materials, laying of Cable trays etc. maintaining all safety rules | 1 Job |
| 9 | Integrated Commissioning maintaining safety rules | 1 Job |
| 10 | Handing over of Total System as per mutually agreed upon format (SAT) | 1 Job |
| 11 | Training as per the specifications | 1 Job |
| 12 | Drawings & Documents including "As Built Drawings", Valid calibration certificates | 1 Job |

List of Preferred Makes

| Sl. No. | Item | Make |
|----------------|--|--|
| 1 | Test Bench | Beamex, Fluke, GE(Druck), Wika/Scandura, YIL, Time Electronics |
| 2 | Panel mounted type Pneumatic Low Pressure Controller Range (- 350 mbar to 350 mbar; -1 to 1 Bar) | Beamex, Fluke, GE(Druck), Wika/Scandura, YIL, Time Electronics |
| 3 | Panel mounted type Pneumatic Pressure Controller Range (0 to 20 bar & 0 to 100 bar) | Beamex, Fluke, GE(Druck), Wika/Scandura, YIL, Time Electronics |
| 4 | Panel mounted type Multifunction Calibrator with Pressure Sensors(- 350 mbar to 350 mbar; 0 to 100 Bar) & HART along with HP and LP pumps | Beamex, Fluke, GE(Druck), Wika/Scandura, YIL, Time Electronics, AOIP SAS, Meriam Process Technologies |
| 5 | Panel mounted type 6.5 Digital Multimeter | Beamex, Fluke, GE(Druck), keysight, Wika/Scandura, YIL, Time Electronics, Extech Instruments Corporation |
| 6 | Electrical Dry Vacuum Pump as per TS | Edwards, Toshniwal, GNM Tech Inc. |
| 7 | Programmable DC Power Supply 0 to 32 VDC, 5A | Aplab, Scheneider, Siemens, Phoenix, Tektronix, B&K Precision |
| 8 | Fixed DC Power Supply 24 VDC, 5A | Aplab, Scheneider, Siemens, Phoenix, Tektronix |
| 9 | Bench Mounted Temperature Calibration Bath (Ambient to 300°C) with trolley | Beamex, Fluke, GE(Druck), Wika/Scandura, YIL, Time Electronics, Isotech |
| 10 | Bench Mounted Dry Block Temperature Calibrator (Upto to 650°C) | Beamex, Fluke, GE(Druck), Wika/Scandura, YIL, Time Electronics, Isotech |
| 11 | Panel mounted type Lab Environment Monitor | Omega, Ruska,Avtech, Extech Instruments Corporation, GEO Instruments, Fluke |
| 12 | Reference SPRT | Beamex, Fluke, GE(Druck), Wika/Scandura, YIL, Time Electronics, Practical Instrument Electronics Inc, Advanced Sensing Products, TMS Europe Ltd, Isotech |
| 13 | Bend Type Secondary PRT | Beamex, Fluke, GE(Druck), Wika/Scandura, YIL, Time Electronics, Practical Instrument Electronics Inc, Advanced Sensing Products, TMS Europe Ltd, Isotech |
| 14 | Panel mounted type Temperature 10 channel Data logger for RTD & T/C's | Fluke, Wika/Scandura, Omega, YIL, Isotech |
| 15 | Panel mounted type Soldering/De-Soldering Station | Hakko ,Weller,Digikey |
| 16 | Panel mounted type 0-250V,5A Variable AC Power Supply | Aplab, Scheneider, Siemens, Phoenix, Tektronix, B&K, Precision,AE, Agronic,Regole |
| 17 | Hydraulic Dead Weight Tester (Range : 1 to 100 bar(minimum)) | Beamex, Fluke, GE(Druck), Wika/ DH-Budenberg , YIL, Time Electronics |

| | | |
|----|---|--|
| 18 | Industrial Computer & Accessories | Getek,Panasonic,Dell, HP/Compaq, IBM, Toshiba, Advantech |
| 19 | Laser B/W Printer | Dell, HP/Compaq, IBM, Toshiba, canon, Fujitsu |
| 20 | FF Power Supply with Segment Block | Phoenix Contact, MTL |
| 21 | Pressure Calibration Software licensed Version | Beamex, Fluke, GE(Druck), Wika/Scandura, YIL, Time Electronics |
| 22 | Temperature Calibration Software licensed Version | Beamex, Fluke, GE(Druck), Wika/Scandura, YIL, Time Electronics |
| 23 | All necessary Fittings, reducers, connectors, probes, BSP & NPT adaptors (1/8 inch, 1/4 inch, 1/2 inch & 3/8 inch) & other accessories as required excluding very high pressure section (2000bar) | Beamex, Fluke, GE(Druck), Wika/Scandura, YIL, Swagelok,Parker |
| 24 | Necessary Hose & SS fittings for very high pressure application (2000 bar) | Beamex, Fluke, GE(Druck), Wika/Scandura, YIL, Swagelok, Parker |
| 25 | Standard Tool Kit | Phoenix, Stanley, Taparia |
| 26 | UPS – 2KVA | APC/Schneider, Emerson vertiv, Microteck, Aplab,Eaton |

Annexure: 19-1

List of Instruments to be supplied along with OEM Traceable Calibration Certification:

| Sl. No. | Item | Certificate Validity (In Years) |
|---------|---|---------------------------------|
| 1 | Temperature Calibration Bath (Ambient to 300°C) | 1 |
| 2 | Dry Block Temperature Calibrator (Up to 650°C) | 1 |
| 3 | Lab Environment Monitor | 1 |

Annexure: 19-2

List of Instruments to be supplied along with Accredited Calibration Certification:

| Sl. No. | Item | Certificate Validity (In Years) |
|---------|--|---------------------------------|
| 1 | Hydraulic Dead Weight Tester (Range : 1 to 100 bar(minimum)) | 5 |
| 2 | Pneumatic Pressure Controller Range(± 350 mbar) | 1 |
| 3 | Pneumatic Pressure Controller Range (0 to 20 bar & 0 to 100 bar) | 1 |
| 4 | Multifunction Calibrator with Pressure Sensors & HART | 1 |
| 5 | 6.5 Digital Multimeter | 1 |
| 6 | Reference SPRT | 1 |
| 7 | Bend Type Secondary PRT | 1 |
| 8 | 10 channel DAQ for RTD & T/C's | 1 |

SCHEDULE OF PRICES

All the quoted prices shall be firm till the completion of said works.

This Schedule-1 will be submitted by the bidder alongwith technical bid and they will indicate unit rate of each individual item as percentage of total price quoted.

No price should be mentioned in the technical bid

Pressure Calibration Section

| Sl. No. | Particulars | Qty | Unit Rate | Remarks |
|---------|--|--------|-----------|---|
| 1 | Design, Manufacturing & Supply of Console type Calibration set-up of Size 2000 mm (L) x 1500 mm (H) x 900 mm (D) with proper finishing & furniture as per TS. Dimension will be finalised during detail engineering. | 1 Set | | To be quoted in terms of % of total cost quoted |
| 2 | Panel mounted type Pneumatic Low Pressure Controller Range (-350 mbar to 350mbar and -1 to 1 Bar) & necessary pressure generating system as per TS | 1 Set | | -do - |
| 3 | Panel mounted type Pneumatic Pressure Controller Range (0 to 20 bar & 0 to 100 bar) & necessary pressure generating system as per TS | 1 Set | | -do - |
| 4 | Hydraulic Dead Weight Tester (Range: 1 to 100 bar(minimum) with software | 1 Set | | -do - |
| 5 | Panel mounted type Multifunction Calibrator with Pressure Sensors (Pressure range: -350 mbar to 350mbar and 0 to 100 Bar) & HART as per TS along with HP & LP pumps. | 1 lot | | -do - |
| 6 | Panel mounted type 6.5 Digital Multimeter | 1 No | | -do - |
| 7 | Electrical Dry Vacuum Pump as per TS | 1 Set | | -do - |
| 8 | Nitrogen Cylinder with trolley as per TS | 2 Set | | -do - |
| 9 | Programmable DC Power Supply 0 to 32 VDC, 5A | 1 No | | -do - |
| 10 | Fixed DC Power Supply 24 VDC, 5A | 1 No | | -do - |
| 11 | Variable AC Power Supply (0-260V, 10A) | 1 No | | -do - |
| 12 | FF Power supply unit with Segment Block | 1 No | | -do - |
| 13 | 230V, 15/5A AC Sockets (DIN Type) with suitable plug and converter as per TS | 4 Sets | | -do - |
| 14 | Mains Power Control – MCB, ELCB, LED Indicator and Emergency Stop Push Button as per TS | 1 Set | | -do - |

Temperature Bath and Calibration Section

| Sl. No. | Particulars | Qty | Unit Rate | Remarks |
|---------|--|--------|-----------|---|
| 1 | Design, Manufacturing & Supply of Console type Calibration set-up of Size 2000 mm (L) x 1500 mm (H) x 900 mm (D) with proper finishing & furniture as per TS. Dimension will be finalised during detail engineering. | 1 No | | To be quoted in terms of % of total cost quoted |
| 2 | Bench Mounted Temperature Calibration Bath (Ambient to 300°C) with trolley | 1 Set | | -do- |
| 3 | Bench Mounted Dry Block Temperature Calibrator (up to 650°C) | 1 Set | | -do- |
| 4 | Panel mounted type Lab Environment Monitor | 1 Set | | -do- |
| 5 | Standard Platinum Resistance Thermometer | 1 No | | -do- |
| 6 | Bend Type Secondary PRT | 1 No | | -do- |
| 7 | Panel mounted type Temperature 10 channel DAQ for RTD & T/C's | 1 No | | -do- |
| 8 | Panel mounted type 6.5 Digital Multimeter | 1 No | | -do- |
| 9 | Programmable DC Power Supply 0 to 32 VDC, 5A | 1 No | | -do- |
| 10 | Fixed DC Power Supply 24 VDC, 5A | 1 No | | -do- |
| 11 | FF Power supply unit with Segment Block | 1 No | | -do- |
| 12 | 230V, 15/5A AC Sockets (DIN Type) with suitable plug and converter as per TS | 4 No's | | -do- |
| 13 | Mains Power Control – MCB, ELCB, LED Indicator and Emergency Stop Push Button as per TS | 1 Set | | -do- |

Other Items

| Sl. No. | Particulars | Qty | Unit Rate | Remarks |
|---------|---|-------|-----------|---|
| 1 | Industrial Computer & Accessories | 1 No | | To be quoted in terms of % of total cost quoted |
| 2 | Panel mounted type Soldering/De-Soldering Station | | | -do- |
| 3 | Laser B/W Printer with table | 1 Set | | -do- |
| 4 | Pressure Calibration Software licensed Version | 1 Set | | -do- |
| 5 | Temperature Calibration Software licensed Version | 1 Set | | -do- |
| 6 | Armoured Stranded Copper cable for Power supply of proper sizes (depending on current & voltage rating) feeder to Booster Compressor, Vacuum pump etc. as per IS standard | 1 lot | | -do- |
| 7 | Necessary hardware for laying & terminations of all type of cable gland | 1 lot | | -do- |

| Sl. No. | Particulars | Qty | Unit Rate | Remarks |
|---------|---|-------------|-----------|---------|
| 8 | All necessary Fittings, reducers, connectors, probes, BSP & NPT adaptors (1/8 inch, 1/4 inch, 1/2 inch & 3/8 inch) & other accessories as required excluding very high pressure section (2000bar) | 4 lot | | -do- |
| 9 | Flanges for Calibrating Capillary type Gauges & Transmitters (Remote Seal) | 1 lot | | -do- |
| 10 | Standard Tool Kit | 1 No | | -do- |
| 11 | Anti-static mat with Wrist band | 4 No | | -do- |
| 12 | Heavy Duty Mat | 4 No | | -do- |
| 13 | Chairs | 4 No | | -do- |
| 14 | UPS – 2KVA | 1 No | | -do- |
| 15 | Earth Pit with accessories | 1 lot | | -do- |
| 16 | Installation, Testing, Commissioning | 1 lot | | -do- |
| 17 | Any other item/service | As required | | -do- |
| | | | | |

List of Recommended / Mandatory Spare Parts for 02 Year Maintenance and Operation**(To be filled up by Bidder)****(Not for price bid evaluation)**

This Schedule-10-1 will be submitted by the bidder alongwith technical bid and they will indicate unit rate of each individual item as percentage of total price quoted. No price should be mentioned in the technical bid

| Sl No | Parts | Description Of Spare | Recommended Quantity | Unit Price (in % of Total price quoted) | Remarks |
|--------------|-------------------------|-----------------------------|-----------------------------|--|----------------|
| 1 | MCB | | | | |
| 2 | ELCB | | | | |
| 3 | Switches | | | | |
| 4 | Oil | | | | |
| 5 | Set of Quick Connecters | | | | |
| 6 | Socket & Plug | | | | |
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Signature of the Bidder

Designation:

Company Name:

Seal of Company

Date:

List of Commissioning Spares
(To be filled up by Bidder)

| SI No | Description Of Spare | Quantity |
|--------------|--|-----------------|
| 1 | Set of NPT & BSP Adaptors | |
| 2 | Set of Suitable Fuses for the Supplied Instruments | |
| 3 | Set of Tubes, Ferrules & Adaptors | |
| 4 | Oil for Dead Weight Tester | |
| 5 | Oil for Liquid Temperature Bath | |
| 6 | Set of Wrenches | |
| 7 | Set of Seals & O Rings | |
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Signature of the Bidder

Designation:

Company Name:

Date:

Seal of Company

List of Special Tools & Tackles
(To be filled up by Bidder)

| Sl No | Name Of Tools & Tackles | Quantity |
|------------------|------------------------------------|-----------------|
| 1 | | |
| 2 | | |
| 3 | | |
| 4 | | |
| 5 | | |
| 6 | | |
| 7 | | |
| 8 | | |
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Signature of the Bidder

Designation:

Company Name:

Date:

Seal of Company

List of Deviations
(To be filled up by Bidder)

[illegible]

Signature of the Bidder

Designation:

Company Name:

Date:

Seal of Company

Schedule 20.5-1

| Site Acceptance Test(SAT) | | | | | |
|--|--|--|-------------------------|--|-------------------------------|
| Manufacturer's Name & Address | | Item: Design and Supply of Pressure and Temperature Test benches | | Project: | |
| | | | | FAT NO. Revision Date Page 1 of 1 | Client: Customer PO No. |
| | | | | | |
| Sl. No. | Inspection Activities | Documents Require | Reference Documents | Acceptance | Remarks |
| 1.0 | Physical Verification | Packing List & FAT Report | As per the Packing List | | |
| 2.0 | Erection & Commissioning - Visual - Conformance to Specs. - Functional Checks | Calibration Certificates | | | |
| 3.0 | Testing & Demonstration | 1. Training / Demonstration Report 2. Completion Report/MOM | | | |
| <div> <div>Prepared By</div> <div>Checked By</div> <div>Approved by</div> </div> | | | | | |

SPECIAL TERMS AND CONDITIONS:**ANNEXURE-II**

| SL No | Special Terms and Conditions | Vendor's Confirmation/ Compliance |
|--------------|--|--|
| A | The supplied item(s) and accessories should be brand new, unused and of prime quality. | |
| B | The bidder must quote latest model for the item(s). Obsolete products shall not be considered for technical evaluation. | |
| C | Bidder must submit all relevant technical catalogues and literature (supporting documents) along with the offer. (as per Chapter 4 of ANNEXURE-I) Specifications without supporting documents shall not be considered for evaluation. | |
| D | The technical bid should be accompanied with duly filled & signed attached ANNEXURE-1 (technical specification) and ANNEXURE-II (Special Terms and conditions). | |
| E | Instrument to be supplied along with calibration certificate as per Annexure-19-1 & 19-2. | |
| F | Responsibility for replacement of either defective or dissimilar materials of order is under the scope of the Supplier (OEM/ OEM authorized dealer). If such a case arises, the supply shall be considered complete only after rectification/replacement of the damaged/defective material up to the satisfaction of M/s OIL. | |
| G | The warranty period of the item should be for a minimum of 12 months from the date of successful installation & commissioning. | |
| H | The successful bidder shall stand guarantee against obsolescence of equipment under their scope for a minimum period of 10 years after expiry of warranty period. The bidder shall also guarantee that discontinuity of production of any item offered, as a part of the system shall not affect the maintainability of the system for a minimum period of 10 years. | |
| I | The successful bidder shall also stand guarantee against all the offered software licensed for lifelong use and will update all the software with latest patch time to time, free of cost. | |
| J | The material supply shall be accompanied with all accessories, O&M manual, test, calibration and warranty certificates. | |
| K | Hands on operation and maintenance training after material delivery (either at M/s OIL, Duliajan or through online webinar) | |
| M | Packing must be adequate to avoid transit damages. | |

Signature of Bidder**Seal of Company**

AA) BID EVALUATION / REJECTION CRITERIA:

The bids shall conform to the specifications and terms & conditions given in the Tender. Bids shall be rejected in case the items offered do not conform to the required parameters stipulated in the technical specifications and to the relevant international/national standards wherever stipulated. Notwithstanding the general conformity of the bids to the stipulated specifications and terms & conditions, the following requirements must be particularly met by the bidders, without which the offer shall be considered as non-responsive and rejected:

| Srl. No. | Bid Requirement | Bidder's Response (Complied/Not Complied. Reference to any document attached along with the bid) |
|---------------------|---|---|
| I) TECHNICAL | | |
| 1.0 | Qualification Criteria | |
| 1.1 | The bidder shall be an Original Equipment Manufacturer (OEM) of the tendered item(s) | |
| or | | |
| 1.2 | If the bidder is not the OEM of the tendered items, then the bidder must submit copy of authorization letter from their OEM to supply the tendered items with warranty/ guarantee back from the principal (OEM). | |
| 2.0 | Experience Criteria | |
| 2.1 | Bidder must have supply experience of successfully executing at least one order of "Similar items*" of value not less than Rs. 38.97 Lakh in preceding 5(five) years from the original bid closing date of the tender. | |
| 2.2 | In case the bidder is OEM of the tendered items, then the bidder can either submit their own supply experience as per clause 2.1 above or they can submit supply experience of successfully executing their own manufactured "Similar items*" of value not less than Rs. 38.97 Lakh through their authorized agent/ dealer/ distributor/ supply house/ channel partner /reseller in preceding 5(five) years from the original bid closing date of the tender. | |
| * | Similar item means- Electrical Test Bench (having minimum Multiproduct Calibrator) or Temperature Test Bench (having minimum Dry Block/ Liquid Bath) or Pressure Test Bench (having minimum Pressure Controller) used for measurement and calibration purpose in Laboratory environment. | |
| 2.3 | Bidder must submit the following documentary evidence in support of previous supply experience as applicable under clause 2.1 or 2.2 above: <ul style="list-style-type: none"> i) Copy(ies) of Purchase Order(s)/ Contract document(s) awarded by client, and ii) Any or combination of the following documents that confirms the successful execution of the order(s) / Contract(s): <ul style="list-style-type: none"> - Completion report / Performance certificate from the clients, - Bill of Lading - Delivery Challan / Tax Invoice - any other documentary evidence to the satisfaction of OIL that can substantiate the successful execution of each of the above Purchase Order(s)/ contract(s). | |

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|----------------------|---|--|
| | <p>Note:</p> <ul style="list-style-type: none"> The date of purchase order(s)/contract(s) need not be within five (05) years preceding the original bid closing date of the Tender, but execution/ supply should be within five (5) years preceding the original bid closing date of this tender. In case of extension to the scheduled Bid Closing date of this tender, if any, the Original scheduled Bid closing Date shall be considered for evaluation of Bids. A job executed by a bidder for its own organization / subsidiary cannot be considered as experience for the purpose of meeting BEC. Performance/Commissioning Report from the clients (if submitted) should be issued on client's official letterhead with signature and stamp. | |
| 3.0 | Delivery should be within 20 Weeks from the date of placement of purchase order. The bidder should categorically confirm in their technical bid that the tendered items will be supplied within the delivery period, without which the bid will be rejected. Bidder(s) will also confirm that Installation & Commissioning of the items shall be completed within 8 Weeks from the date of notifying site readiness. | |
| II) FINANCIAL | | |
| 1.0 | The bidder shall have an annual financial turnover of minimum Rs. 38.97 Lakh during any of the preceding 3 (Three) financial/accounting years reckoned from the original bid closing date of the tender." | |
| 2.0 | "Net Worth" of the bidder should be positive for the financial/accounting year just preceding to the original bid closing date of the tender. | |
| 3.0 | <p>Considering the time required for preparation of Financial Statements, if the last date of preceding financial / accounting year falls within the preceding six months reckoned from the original bid closing date and the Financial Statements of the preceding financial / accounting year are not available with the bidder, then the financial turnover of the previous three financial / accounting years excluding the preceding financial / accounting year will be considered. In such cases, the Net worth of the previous financial / accounting year excluding the preceding financial / accounting year will be considered. However, the bidder has to submit an affidavit/undertaking (refer PROFORMA-2) certifying that 'the balance sheet/Financial Statements for the financial year (As the case may be) has actually not been audited so far'.</p> <p>Note:</p> <p>a) For proof of Annual Turnover & Net worth any one of the following document must be submitted along with the bid:-</p> <p>i) A certificate issued by a practicing Chartered/Cost Accountant (with Membership Number and Firm Registration Number), certifying the Annual turnover & Net worth as per format prescribed in PROFORMA – 3.</p> <p>OR</p> <p>ii) Audited Balance Sheet along with Profit & Loss account.</p> <p>b) In case the bidder is a Central Govt. Organization/PSU/State Govt. Organization/Semi-State Govt. Organization or any other Central/State Govt. Undertaking, where the auditor is appointed only after the approval of Comptroller and Auditor General of India and the</p> | |

| | | |
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| | Central Government, their certificates may be accepted even though FRN is not available. However, bidder to provide documentary evidence for the same. | |
| 4.0 | <p>In case the Bidder is subsidiary company (should be 100% owned subsidiary of the parent/ultimate parent/holding company) who does not meet financial criteria by itself and submits its bid based on the strength of parent/ ultimate parent/ holding company, then following documents need to be submitted:</p> <ul style="list-style-type: none"> i) Turnover of the parent/ ultimate parent/ holding company should be in line with requirement. ii) Net Worth of the parent/ultimate parent/ holding company should be positive in line with Para 1.0 above. iii) Corporate Guarantee (as per PROFORMA-4) on parent / ultimate parent/ holding company's company letter head signed by an authorised official undertaking that they would financially support their wholly owned subsidiary company for executing the project/ job in case the same is awarded to them. iv) Document of subsidiary company being 100% owned subsidiary of the parent/ ultimate parent/ holding company. | |

BB) GENERAL NOTES TO BIDDERS:

| SL No. | Bid Requirement | Bidder's Response (Complied/Not Complied. Reference to any document attached along with the bid) |
|--------|--|--|
| 1.0 | The items shall be brand new, unused & of prime quality. The supplier shall warrant (in the event of an order) that the product supplied will be free from all defects & fault in material, workmanship & manufacture and shall be in full conformity with ordered specifications. This clause shall be valid for 12 months from the date of successful installation & commissioning . The defective materials, if any, rejected by OIL shall be replaced by the supplier at their own expense. Bidders must confirm the same in their quotations | |
| 2.0 | Bidders shall submit their offer mentioning pointwise compliance / non-compliance to all the terms & conditions, BEC/BRC, Specifications etc. Any deviation(s) from the tender terms & conditions, BEC/BRC, Specifications etc. should be clearly highlighted specifying justification in support of deviation. | |
| 3.0 | Bidders are requested to examine all instructions, forms, terms and specifications in the bid. Failure to furnish all information required as per the bid or submission of offers not substantially responsive to the bid in every respect will be at the bidders risk and may result in the rejection of its offer without seeking any clarifications. | |
| 4.0 | The items covered in this Tender shall be used by Oil India Limited in the PEL/ML areas and hence concessional GST @5% (for indigenous bidder) will be applicable as per Govt. Policy in vogue. Successful bidder shall arrange to provide all necessary documents (invoice etc.) to OIL for applying Essentiality Certificate atleast 45 days prior to stipulated Delivery date. Further, Successful bidder shall affect dispatch only on receipt of relevant certificates/shipment clearance from OIL, failing which all related liabilities shall be to Supplier's account. | |
| 5.0 | <p>Categorisation and various Criteria applicable to MSE bidders shall be guided by the Gazette Notification No. CG-DL-E-26062020-220191 dated 26.06.2020 and Amendment vide Gazette Notification no. CG-DLE-16062021-227649 dated 16th June, 2021 issued by Ministry of MICRO, SMALL AND MEDIUM ENTERPRISES. The existing enterprises registered under EM- Part-II or UAM till 30th June, 2020 shall continue to be valid only for a period up to the 31st day of December, 2021.</p> <p>The bidder claiming as MSE status (MSE-General, MSE-SCIST, MSE -Woman) against this tender has to submit the following documents for availing the benefits applicable to MSEs:</p> <p>Udyam Registration Number with Udyam Registration Certificate.</p> <p>OR</p> <p>Proof of registration with District Industry Centers or Khadi and Village Industries Commission or Khadi and Village Industries Board or Coir Board or National Small Industries Corporation or Directorate of Handicrafts and Handloom or Udyog Adhar registration or registration with any other body specified by Ministry of MSME.</p> <p>Note: In case bidding MSE is owned by Schedule Caste or Schedule Tribe entrepreneur or Woman Entrepreneur, valid documentary evidence issued by the agency who has registered the bidder as MSE owned by SC/ST entrepreneur/ Woman Entrepreneurs should also be enclosed.</p> | |

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| 6.0 | <p>Ministry of Finance of Govt. of India, Department of Expenditure, Public procurement Division vide office memorandum F. No. 6/18/2019-PPD dated 23rd July, 2020 (order-Public Procurement no.1) has proclaimed the insertion of Rule 144 (xi) in the General Financial Rules (GFRs), 2017 w.e.f. 23rd July, 2020 regarding restrictions on procurement from a bidder of a country which shares a land border with India on the grounds of defence of India on matters directly or indirectly related thereto including national security. Bidders are requested to take note of the office memorandum and submit their offers accordingly, wherever applicable. In this regard, bidders must submit duly sealed & signed undertaking as per format provided vide, "PROFORMA-1" along with the technical bid.</p> | |
| 7.0 | <p><u>TAX COLLECTIBLE AT SOURCE (TCS):</u> Tax Collectible at Source (TCS) applicable under the Income-tax Law and charged by the SUPPLIER shall also be payable by OIL along with consideration for procurement of goods/materials/ equipment. If TCS is collected by the SUPPLIER, a TCS certificate in prescribed Form shall be issued by the SUPPLIER to OIL within the statutory time limit.</p> <p>Payment towards applicable TCS u/s 206C (IH) of Income Tax Act, 1961 will be made to the supplier provided they are claiming it in their invoice and on submission of following undertaking along with the invoice stating that:</p> <p>a) TCS is applicable on supply of goods invoiced to OIL as turnover of the supplier in previous year was more than Rs. 10 Cr. and b) Total supply of goods to OIL in FY (As applicable) exceeds Rs. 50 Lakh and c) TCS as charged in the invoice has already been deposited (duly indicating the details such as challan No. and date) or would be deposited with Exchequer on or before the due date and d) TCS certificate as provided in the Income Tax Act will be issued to OIL in time.</p> <p>However, Performance Security deposit will be released only after the TCS certificate for the amount of tax collected is provided to OIL. Supplier will extend the performance bank guarantee (PBG), wherever required, till the receipt of TCS certificate or else the same will be forfeited to the extent of amount of TCS, if all other conditions of Purchase order are fulfilled.</p> <p>The above payment condition is applicable only for release of TCS amount charged by supplier u/s 206C (I H) of Income tax Act, 1961.</p> | |
| 8.0 | <p><u>APPLICABILITY OF BANNING POLICY OF OIL INDIA LIMITED:</u> Banning Policy dated 6th January, 2017 as uploaded in OIL's website will be applicable against the tender (and order in case of award) to deal with any agency (bidder/contractor/supplier/ vendor/service provider) who commits deception, default, fraud or indulged in other misconduct of whatsoever nature in the tendering process and/or order execution processes. Applicability of the policy shall include but not limited to the following in addition to other actions like invoking bid security/performance security/cancellation of order etc. as deemed fit and as mentioned elsewhere in the tender:</p> <p>a) Backing out by bidder within bid validity. b) Backing out by successful bidder after issue of LOA/Order/Contract c) Non/poor performance and order/contract execution default.</p> <p>The bidders who are on Holiday/Banning/Suspension list of OIL on due date of submission of bid/ during the process of evaluation of the bids, the offers of such bidders shall not be considered for bid opening/evaluation/award. If the bidding documents were issued inadvertently/downloaded from website, the offers submitted by such bidders shall also not be considered for bid opening/evaluation/ Award of Work.</p> | |

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| 9.0 | At any time prior to the deadline for submission of bids, the Company may, for any reason, whether at its own initiative or in response to a clarification requested by a prospective Bidder, modify the tender Documents through issuance of Corrigendum(s)/Addendum(s). Bidders are expected to take the Corrigendum(s)/ Addendum(s) into account in preparation and submission of their bid. No separate intimation for Corrigendum(s)/Addendum(s) published by OIL shall be sent to the Bidders. | |
|-----|--|--|

PROFORMA – 1

Format for Undertaking by Bidders towards compliance of office memorandum F. No. 6/18/2019-PPD dated 23rd July, 2020 (Public Procurement no. 1) issued by Department of Expenditure, Ministry of Finance, Govt. of India

(To be typed on the letter head of the bidder)

Ref. No _____

Date: _____

Tender No. _____

Date: _____

OIL INDIA LIMITED
MATERIALS DEPARTMENT,
DULIAJAN, ASSAM, INDIA

Dear Sirs,

We have read the clause regarding restrictions on procurement from a bidder of a country which shares a land border with India; We certify that this bidder is not from such a country or, if from such a country, has been registered with the Competent Authority. We hereby certify that this bidder fulfils all requirements in this regard and is eligible to be considered. [Where evidence of valid registration by the Competent Authority shall be attached.]”

We also agree that, during any stage of the tender/contract agreement, in case the above information/documents submitted by us are found to be false, Oil India Limited has the right to immediately reject our bid/terminate contract at any stage and carry out further legal action on us in accordance with law.

Yours faithfully,
For (type name of the firm here)

Signature of Authorised Signatory

Name :

Designation :

Phone No.

Place :

Date :

(Affix Seal of the Organization here, if applicable)

Note : This form should be returned along with offer duly signed.

PROFORMA-2

FORMAT FOR CERTIFICATE OF COMPLIANCE OF FINANCIAL CRITERIA

Ref: **Financial Criteria of the BEC**

Tender No.: _____

I the authorized signatory(s) of (Company or firm name with address) do hereby solemnly affirm and declare as under:-

The balance sheet/Financial Statements for the financial year _____ (as the case may be) has actually not been audited as on the Original Bid closing Date.

Place :

Date :

Signature of the authorized signatory

Note: This certificate is to be issued only considering the time required for preparation of Financial Statements i.e. if the last date of preceding financial / accounting year falls within the preceding six months reckoned from the original bid closing date.

PROFORMA-3

CERTIFICATE OF ANNUAL TURNOVER & NET WORTH

TO BE ISSUED BY PRACTISING **CHARTARD ACCOUNTANTS' FIRM** ON THEIR LETTER HEAD

TO WHOM IT MAY CONCERN

This is to certify that the following financial positions extracted from the audited financial statements of M/s.....(Name of the bidder) for the last three (3) completed accounting years upto..... **(as the case may be)** are correct

| YEAR | TURN OVER In INR (Rs.) Crores | NET WORTH In INR (Rs.) Crores |
|------|----------------------------------|----------------------------------|
| | | |
| | | |
| | | |

Place:

Date:

Seal

Membership No:

Registration Code:

UDIN:

Signature

NOTE: As per the guidelines of ICAI, every practicing CA is required to mention Unique Document Identification Number (UDIN) against each certification work done by them. Documents certified by CA without UDIN shall not be acceptable.

PROFORMA-4

PARENT/ULTIMATE PARENT/ HOLDING COMPANY'S CORPORATE GUARANTEE TOWARDS FINANCIAL STANDING (Delete whichever not applicable)

(TO BE EXECUTED ON COMPANY'S LETTER HEAD)

DEED OF GUARANTEE

THIS DEED OF GUARANTEE executed at this day of by M/s (mention complete name) a company duly organized and existing under the laws of (insert jurisdiction/country), having its Registered Office at hereinafter called "the Guarantor" which expression shall, unless excluded by or repugnant to the subject or context thereof, be deemed to include its successors and permitted assigns.

WHEREAS M/s. Oil India Limited (hereinafter referred to as OIL) has invited offers vide their Tender No. _____ for _____ and M/s _____ (Bidder) intends to bid against the said tender and desires to have Financial support of M/s _____ [Parent/Ultimate Parent/Holding Company(Delete whichever not applicable)] and whereas Parent/Ultimate Parent/Holding Company(Delete whichever not applicable) represents that they have gone through and understood the requirements of subject tender and are capable and committed to provide the Financial support as required by the bidder for qualifying and successful execution of the contract, if awarded to the bidder.

Now, it is hereby agreed by the Guarantor to give this Guarantee and undertakes as follows:

1. The Guarantor confirms that the Bidder is a 100% subsidiary of the Guarantor.
2. The Guarantor agrees and confirms to provide the Audited Annual Reports of any of the preceding 03(three) financial/accounting years reckoned from the original bid closing date.
3. The Guarantor have an annual financial turnover of minimum INR _____ Cr or USD _____ during any of the preceding 03(three) financial/ accounting years reckoned from the original bid closing date.
4. Net worth of the Guarantor is positive for preceding financial/ accounting year.
5. The Guarantor undertakes to provide financial support to the Bidder for executing the project/job, in case the same is awarded to the Bidder.
6. The Guarantor represents that:

(a) this Guarantee herein contained shall remain valid and enforceable till the satisfactory execution and completion of the work (including discharge of the warranty obligations) awarded to the Bidder.

(b) the liability of the Guarantor, under the Guarantee, is limited to the 100% of the order value between the Bidder and OIL. This will, however, be in addition to the forfeiture of the Performance Guarantee furnished by the Bidder.

(c) this Guarantee has been issued after due observance of the appropriate laws in force in India.

(d) this Guarantee shall be governed and construed in accordance with the laws in force in India and subject to the exclusive jurisdiction of the courts of New Delhi, India.

(e) this Guarantee has been given without any undue influence or coercion, and that the Guarantor has fully understood the implications of the same.

(f) the Guarantor has the legal capacity, power and authority to issue this Guarantee and that giving of this Guarantee and the performance and observations of the obligations hereunder do not contravene any existing laws.

for and on behalf of
(Parent/Ultimate Parent/Holding Company)
(Delete whichever not applicable)

for and on behalf of
(Bidder)

Witness:

- 1.
- 2.

Witness:

- 1.
- 2.