ANNEXURE-I

OIL INDIA LIMITED

(A Government of India Enterprise)
P.O. Duliajan-786602, Assam, India
E-mail: material@oilindia.in

INVITATION FOR BID
NATIONAL COMPETITIVE BID

OIL INDIA LIMITED invites National Competitive Bid (NCB) through its e-procurement portal https://etender.srm.oilindia.in/irj/portal for the following items:

E-Tender No.	Bid Closing / Opening Date	Item
SSI4653P18	**13.07.2017**	**SODIUM ALUMINATE-45,000 KG.**
SSI4659P18	**13.07.2017**	**CAUSTIC SODA- 120,000 KG.**
SSI4660P18	**13.07.2017**	**FERRIC ALUM- 480,000 KG**
SSI4785P18	**13.07.2017**	**JACKET-4050 NOS.**
SSI4813P18	**13.07.2017**	**ELECTRICAL SAFETY SHOES-725 Pairs**
SDI4705P18	**13.07.2017**	**FIRE EXTINGUISHER- 500 NOS.**
SSI4807P18	**13.07.2017**	**CGI SHEET-8000 NOS.**
SSI4936P18	**13.07.2017**	**HYDRATED LIME- 280,000 KG**
SSI4810P18	**13.07.2017**	**MS ANGLE-45,000 KG**
SSI4528P18	**13.07.2017**	**BATHROOM & SANITARY FITTINGS (MSEs only)**
SSI4661P18	**13.07.2017**	**MS PLATE-70,000KG**
SSI4811P18	**13.07.2017**	**TMT BAR & MS ROUND BAR-120,000KG**
SDI4849P18	**13.07.2017**	**WINDOW AIRCONDITIONER-126 NOS.**
SDI4914P18	**13.07.2017**	**INSTRUMENTATION TEST BENCH-1 NO.**
SDI4915P18	**13.07.2017**	**CREW CABIN-2 NOS.**
SDI4881P18	**13.07.2017**	**PRINTERS-84 NOS.**

Kind Attention : E-Tender No. SDI4647P18 for PRINTERS (QTY- 84 NOS.) which was advertised in Press through Notification dated 12.05.2017 has been cancelled. In lieu of this, fresh E-tender No. SDI4881P18 dated 31.05.2017 has been floated. May please refer to OIL's e-procurement portal https://etender.srm.oilindia.in/irj/portal as well as OIL's website www.oil-india.com for further details.

OIL INDIA LIMITED
(A Government of India Enterprises)
PO : Duliajan – 786602
Assam (India)

TELEPHONE NO: (91-374) 2808719
FAX NO: (91-374) 2800533
Email: ankurjyoti_sarmah@oilindia.in ; erp_mm@oilindia.in

FORWARDING LETTER

Tender No. : **SDI4914P18 dated 02.06.2017**

Tender Fee : **Rs. 1,000.00**

Bid Security Amount : **Applicable**

Bidding Type : **SINGLE STAGE COMPOSITE BID SYSTEM**

Bid Closing on : **As mentioned in the e-portal**

Bid Opening on : **-do-**

Performance Security : **Applicable**

Integrity Pact : **Not Applicable**

OIL invites Bids for **PROCUREMENT OF INSTRUMENTATION TEST & CALIBRATION BENCH (Qty– 1 No.)** through its e-Procurement site under **SINGLE STAGE COMPOSITE BID SYSTEM**. The bidding documents and other terms and conditions are available at Booklet No. MM/LOCAL/E-01/2005 for E-Procurement LCB Tenders. The prescribed Bid Forms for submission of bids are available in the Technical RFx -> External Area - > Tender Documents

The general details of tender can be viewed by opening the RFx [Tender] under RFx and Auctions. The details of items tendered can be found in the Item Data and details uploaded under Technical RFX.

The tender will be governed by:

a) For technical support on various matters viz. Online registration of vendors, Resetting of Passwords, submission of online bids etc, vendors should contact OIL's ERP MM Deptt at following: Tel Nos = 0374-2807178 , 0374-2807171 , 0374-2807192 ,. Email id = erp_mm@oilindia.in.

b) OIL's office timings are as below:

	Time (in IST)
Monday – Friday	**07.00 AM to 11.00 AM; 12.30 PM to 03.30 PM**
Saturday	**07.00 AM to 11.00 AM**
Sunday and Holidays	**Closed**

Vendors should contact OIL officials at above timings only.

c) OIL Bank Details :

	Bank Details of Beneficiary	
a	Bank Name	STAE BANK OF INDIA
b	Branch Name	Duliajan
c	Branch Address	Duliajan, Dist-Dibrugarh
d	Banker Account No.	10494832599
e	Type of Account	Current Account
f	IFSC Code	SBIN0002053
g	MICR Code	786002302
h	SWIFT Code	SBININBB479
i	Contact No.	9435554859
j	Contact Person Name	Mr. K.L.K.Banik, AGM
k	Fax No.	0374-2802729
l	Email Id	sbi.02053@sbi.co.in

d) "General Terms & Conditions" for e-Procurement as per Booklet No. MM/LOCAL/E-01/2005 for E-Procurement of Indigenous Tenders.

e) Technical specifications and Quantity as per **Annexure – 1A**.

f) The prescribed Bid Forms for submission of bids are available in the Technical RFx-> External Area - > Tender Documents.

g) Amendments to the NIT after its issue will be published on OIL's website only. Revision, clarification, addendum, corrigendum, time extension etc. to the tender will be hosted on OIL website only. No separate notification shall be issued in the press. Prospective bidders are requested to visit website regularly to keep themselves updated.

h) Any sum of money due and payable to the contractor (including Security Deposit refundable to them) under this or any other contract may be appropriated by Oil India Limited and set-off against any claim of Oil India Limited (or such other person or persons contracting through Oil India Limited) for payment of sum of money arising out of this contract or under any other contract made by the contractor with Oil India Limited (or such other person or persons contracting through Oil India Limited).

i) Bidder are advised to fill up the Technical bid check list (**Annexure EEE**) and Response sheet (**Annexure FFF**) given in MS excel format in Technical RFx -> External Area - > Tender Documents. The above filled up document to be uploaded in the Technical Attachment. For details please refer "Vendor User Manual" / "NEW INSTRUCTIONS"

Special Notes:

1.0 Vendors having OIL's User ID & password to pay Tender Fee on-line through OIL's electronic Payment Gateway upto one week prior to the Bid closing date (or as amended in e-portal).

Vendors who do not have OIL's User ID & password, may generate User ID & password online by the Vendor by using the link for supplier enlistment given in OIL's e-tender portal and then pay Tender Fee on-line through OIL's electronic Payment Gateway upto one week prior to the Bid closing date (or as amended in e-portal).
No physical tender documents will be provided. Details of NIT can be viewed using "Guest Login" provided in the e-Procurement portal. The link to e-Procurement portal has been also provided through OIL's web site www.oil-india.com.

NOTE:
In case of MSE/PSUs/ Govt. Bodies / eligible institutions etc., they shall apply to DGM-Materials, Oil India Limited, P.O. Duliajan, Assam-786602 for waiver of Tender Fee upto one week prior to the Bid closing date (or as amended in e-portal).

2.0 The tender is invited under SINGLE STAGE- COMPOSITE BID SYSTEM. The bidders are required to submit both the "TECHNO-COMMERCIAL UNPRICED BID" and "PRICED BID" through electronic format in the OIL's e-Tender portal within the Bid Closing Date and Time stipulated in the e-Tender.

2.1 Please ensure that Technical Bid / all technical related documents related to the tender are uploaded in the Technical RFx Response-> Technical Attachment only. For details please refer "NEW INSTRUCTIONS"

3.0 Please note that all tender forms and supporting documents are to be submitted through OIL's e-Procurement site only except following documents which are to be submitted manually in sealed envelope super scribed with **Tender no.** and **Due date** to **DGM- Materials, Materials Department, Oil India Limited, Duliajan - 786602, Assam** on or before the Bid Closing Date and Time mentioned in the Tender.

a) **Original Bid Security**
b) **Detailed Catalogue (if any)**
c) **Any other document required to be submitted in original as per tender requirement**

All documents submitted in physical form should be signed on all pages by the authorised signatory of the bidder and to be submitted in Duplicate.

4.0 Benefits to Micro & Small Enterprises (MSEs) as per OIL's Public Procurement Policy for Micro and Small Enterprises (MSEs) shall be given. Bidders are requested to go through ANNEXURE – I of MM/LOCAL/E-01/2005 for E-Procurement of Indigenous Tenders for more details. MSE bidders are exempted from submission of Tender Fees and Bid Security/Earnest Money provided they are registered for the items they intend to quote.

5.0 Bidders are requested to examine all instructions, forms, terms and specifications in the bid. Failure to furnish all information required as per the NIT or submission of offers not

substantially responsive to the bid in every respect will be at the bidders risk and may result in rejection of its offer without seeking any clarifications.

6.0 Bidders must ensure that their bid is uploaded in the system before the tender closing date and time. Also, they must ensure that above documents which are to be submitted in a sealed envelope are also submitted at the above mentioned address before the bid closing date and time failing which the offer shall be rejected.

7.0 Bid must be submitted electronically only through OIL's e-procurement portal. Bid submitted in any other form will be rejected.

8.0 The tender shall be governed by the Bid Rejection & Bid Evaluation Criteria given in enclosed **Annexure-CCC**. However, if any of the Clauses of the Bid Rejection Criteria / Bid Evaluation Criteria (as per **Annexure-CCC**) contradict the Clauses of the tender and / or "General Terms & Conditions" as per Booklet No. MM/LOCAL/E-01/2005 for E-Procurement of Indigenous Tenders elsewhere, those in the BEC / BRC shall prevail.

9.0 To ascertain the substantial responsiveness of the bid OIL reserves the right to ask the bidder for clarification in respect of clauses covered under BRC also and such clarifications fulfilling the BRC clauses in toto must be received on or before the deadline given by the company, failing which the offer will be summarily rejected.

10.0 Please do refer the User Manual provided on the portal on the procedure How to create Response for submitting offer.

11.0 If Bank Guarantee is submitted towards 'Bid Security', then bidders have to ensure that the Bank Guarantee issuing bank indicate the name and detailed address (including e-mail) of their higher office from where confirmation towards genuineness of the Bank Guarantee can be obtained.

Please do refer "NEW INSTRUCTION TO BIDDER FOR SUBMISSION" for the above two points and also please refer " New Vendor Manual (effective 12.04.2017) " available in the login Page of the OIL's E-tender Portal.

NOTE:

Bidders should submit their bids (preferably in tabular form) explicitly mentioning compliance / non compliance to all the NIT terms and conditions of NIT.

Yours Faithfully

Sd-

(AJ SARMAH)
MANAGER MATERIALS (IP)
FOR DGM-MATERIALS

Annexure - CCC

Tender No & Date: SDI4914P18 dated 02.06.2017

BID REJECTION CRITERIA (BRC) / BID EVALUATION CRITERIA (BEC)

The following BRC/BEC will govern the evaluation of the bids received against this tender. Bids that do not comply with stipulated BRC/BEC in full will be treated as non responsive and such bids shall prima-facie be rejected. Bid evaluation will be done only for those bids that pass through the "Bid Rejection Criteria" as stipulated in this document.

Other terms and conditions of the enquiry shall be as per General Terms and Conditions vide MM/LOCAL/E-01/2005 for E-Procurement of Indigenous Tenders. However, if any of the Clauses of the Bid Rejection Criteria / Bid Evaluation Criteria (BRC / BEC) contradict the Clauses of the tender or MM/LOCAL/E-01/2005 elsewhere, those in the BRC / BEC shall prevail.

Criteria	**Complied / Not Complied. (Remarks if any)**
1.0 BID REJECTION CRITERIA (BRC): The bid shall conform generally to the specifications, terms and conditions given in this document. Notwithstanding the general conformity of the bids to the stipulated specifications, the following requirements will have to be particularly met by the Bidders without which the same will be considered as non-responsive and rejected. **A) TECHNICAL:** **1.** Bidder should have experience of design, engineering, supply and commissioning of minimum one number of similar test bench during **last 5(Five) years** from the **original bid closing date**. **"Similar"** implies **"Test Bench having minimum vacuum to 700 bar calibration capacity used in Laboratory environment."** Note: Documentary evidence in respect of the above should be submitted in the form of copy of relevant **Purchase Order** along with copies of any of the documents in respect of satisfactory execution of each of those Purchase Orders, such as – (i) Satisfactory Supply Completion / Installation Report (OR) (ii) Installation and commissioning certificate (OR) (iii) any other documentary evidence that can substantiate the satisfactory execution of each of the purchase orders cited above. **B) FINANCIAL** a) Annual Financial Turnover of the bidder during **any of preceding 03 (three) financial / accounting years from the original bid closing date** should be at least **Rs. 8.71 Lakhs.**	

b) Net Worth of the firm should be Positive for preceding financial / Accounting year. [FY 2016-17].

Note -For (a) & (b): **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 certifying that 'the balance sheet/Financial Statements for the financial year…....…… (As the case may be) has actually not been audited so far'.**

Notes:

a) For proof of Annual Turnover & Net worth any one of the following document must be submitted along with the bid:-

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 ANNEXURE-J.

OR

ii) Audited Balance Sheet along with Profit & Loss account.

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 Central Government, their certificates may be accepted even though FRN is not available. However, bidder to provide documentary evidence for the same.

C) COMMERCIAL:

i) Validity of the bid shall be minimum 90 days from the Bid Closing Date.

ii) Bid security:

The bid must be accompanied by Bid Security of **Rs. 35,000.00** in OIL's prescribed format as Bank Guarantee in favour of OIL. The Bid Security may be submitted manually in sealed envelope superscribed with Tender no. and Bid Closing date to Head Materials, Materials Department, Oil India Limited, Duliajan- 786602, Assam on or before the Bid Closing Date and Time mentioned in the Tender. **The Bank Guarantee towards Bid Security shall be valid for 6 months from Bid closing date. (i.e. upto 13.01.2018).**

Bid Security may also be paid online on or before the Bid Closing Date and Time mentioned in the Tender.

If bid security in ORIGINAL of above mentioned Amount and Validity is not received or paid online within bid closing date and time, the bid submitted through electronic form will be rejected without any further consideration.

For exemption for submission of Bid Security, please refer Clause No. 8.16 of General Terms and Conditions vide MM/LOCAL/E-01/2005 for E-Procurement of Indigenous Tenders.

The format of Bank Guarantee towards Bid Security (Annexure – VII) has been amended to Annexure – VII (Revised) and bidders should submit Bank Guarantee towards Bid Security as per Annexure – VII (Revised) only.

iii) Bids are invited under "Single Stage Composite Bid System". Bidders have to submit both the "Techno-commercial Unpriced Bids" and "Priced Bids" through electronic form in the OIL's e-Tender portal within the bid Closing date and time stipulated in the e-tender. The Techno-commercial Unpriced bid is to be submitted as per scope of works and Technical specification of the tender and the priced bid as per the online Commercial bid format. For details of submission procedure, please refer relevant para of General Terms and Conditions vide MM/LOCAL/E-01/2005 for E-Procurement of Indigenous Tenders.

iv) Performance Security:

The successful bidder shall submit Performance Security @ 10% of PO value within 30 days of receipt of the formal purchase order.

The Bidders must undertake in their bids to submit Performance Security as stated above.

The Performance Security shall be in the following form :

(a) A Bank Guarantee in the prescribed OIL's format valid for 3(three) months beyond the Warranty period indicated in the Purchase Order /contract agreement.

The Performance Security for capital nature items like plant and machinery etc. shall be valid for 12 months from the date of commissioning plus 3(three) months or 18 months from the date of shipment/despatch plus 3(three) months whichever concludes earlier. However, for consumables like chemicals, cement, tubular etc. the Performance Security shall be valid for 12 months from the date of shipment/despatch plus 3(three) months.

The validity requirement of Performance Security is assuming despatch within stipulated delivery period and confirmation to all terms and conditions of order. In case of any delay in despatch or non-confirmation to all terms and conditions of order, validity of the Performance Security is to be extended suitably as advised by OIL.

v) The prices offered will have to be firm through delivery and not subject to

variation on any account. A bid submitted with an adjustable price will be treated as non-responsive and rejected.

vi) Bids received after the bid closing date and time will be rejected. Similarly, modifications to bids received after the bid closing date & time will not be considered.

vii) All the Bids must be Digitally Signed using "Class 3" digital certificate with Organisation's name *(e-commerce application)* as per Indian IT Act obtained from the licensed Certifying Authorities operating under the Root Certifying Authority of India (RCAI), Controller of Certifying Authorities (CCA) of India. The bid signed using other than "Class 3 with Organisation's Name" digital certificate, will be rejected.

viii) Price should be maintained in the "online price schedule" only. The price submitted other than the "online price schedule" shall not be considered.

ix) A bid shall be rejected straightway if it does not conform to any one of the following clauses:
(a) Validity of bid shorter than the validity indicated in the Tender.
(b) Original Bid Security not received within the stipulated date & time mentioned in the Tender.
(c) Bid Security with (i) Validity shorter than the validity indicated in Tender and/or (ii) Bid Security amount lesser than the amount indicated in the Tender.
(d) Annual Turnover of a bidder lower than the Annual turnover mentioned in the Tender.

x) Delivery Schedule:

(i) The delivery of the materials should be completed within 6 (six) months from date of placement of formal PO.

(ii) Installation & Commissioning of the materials should be completed within 3 (three) months from the date of intimation of site clearance from OIL.

2.0 BID EVALUATION CRITERIA (BEC)
The bids conforming to the terms and conditions stipulated in the tender and considered to be responsive after subjecting to the Bid Rejection Criteria as well as verification of original of any or all documents/ documentary evidences pertaining to BRC, will be considered for further evaluation as per the Bid Evaluation Criteria given below.

A) TECHNICAL:

i) The bid will be evaluated strictly as per NIT specification, terms & conditions.

B) COMMERCIAL:

i) To evaluate the inter-se-ranking of the offers, Assam Entry Tax on purchase value will be loaded as per prevailing Govt. of Assam guidelines as applicable

on bid closing date. Bidders may check this with the appropriate authority while submitting their offer. ii) A job executed by a bidder for its own organization / subsidiary cannot be considered as experience for the purpose of meeting BEC. iii) To ascertain the substantial responsiveness of the bid OIL reserves the right to ask the bidder for clarification in respect of clauses covered under BRC also and such clarifications fulfilling the BRC clauses in toto must be received on or before the deadline given by the company, failing which the offer will be summarily rejected.	

NOTE:

Bidders should submit their bids (preferably in tabular form) explicitly mentioning compliance / non compliance to all the terms and conditions of NIT.

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ANNEXURE-IA

TECHNICAL SPECIFICATIONS WITH QUANTITY

Tender No & Date: SDI4914P18 dated 02.063.2017

	Complied / Not Complied. (Remarks if any)

Item No. 10 : Instrumentation Test & Calibration Bench, (qnty. – 1 no.)

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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. M/s OIL is having production set-up at Moran known as Moran Oil Field. Moran is well connected by Air with nearest Airport Dibrugarh, 45 km away. Instrumentation section of Moran provides support for installation, commissioning and maintenance of field instruments in Production installations under Moran Oil Fields. Electronics and Pneumatic workshop of Moran Instrumentation section does calibration, repairing, testing and certification to all Electronics & pneumatic process instruments/sensors used in Production installations under Moran Oil Fields.

1.1.2 At present we do not have any Instrumentation Test & Calibration Bench in Instrumentation section of Moran Oil Fields. So one latest state-of-the-art complete instrumentation test & calibration bench for pressure, temperature & electrical parameters is required to meet operational requirements.

1.1.3 In view of above, we intend to modernise our Instrumentation workshop with an Instrumentation Test & Calibration Bench for smooth testing, calibration facility. Therefore, one number Instrumentation Test & Calibration Bench, tailor made to Instrumentation workshop's requirement, is to be procured by M/s OIL covering Pressure and Temperature range up-to 700 bar and 700 DEG C respectively.

1.1.4 The bench should have following minimum features:
• Pressure calibration up-to 700 bar.
• Temperature calibration up-to 700 DEG C.
• Calibration of HART instruments
• Simulation of Voltage, Current source, Thermocouple, RTD etc.

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, and as per special instruction to bidders as per Chapter 21 of this specification.

1.2.2 The specification shall be read in conjunction with the Tender documents and any other instructions to the bidders issued by M/s OIL enclosed with the tender documents.

2. <u>SITE CONDITIONS / DESIGN DATA</u> :

2.1 Owner/ Purchaser : M/s OIL INDIA LIMITED

2.2 Location : Moran, 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 : 100% at 21 Deg. C
monsoon
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. <u>SCOPE OF ENQUIRY</u>

3.1. General
3.1.1. The above test bench is required for Instrumentation workshop of OIL INDIA LIMITED, Moran, Assam.

3.1.2. The scope of work for supplying and commissioning of Instrumentation Test & Calibration Bench in Instrumentation workshop 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 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 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.

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 and High pressure gauge as well as for temperature transmitter shall be supplied & erected by the bidder.

3.1.5 All commissioning spares like battery, battery charger seal kit, fittings, electrical connectors etc., has to be supplied at Bidder's cost.

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 required 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 (2 nos. cushion chairs having powder coated metal framed with 5 caster legs) will also be under bidder's scope.

3.1.8. Supply & laying of SS pipe for pneumatic supply from existing compressor 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 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 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. Hand pumps will be used for the following applications:

Ø Simple pressure generation for on site, laboratories or workshops (Max pressure can be achieved within three to four nos. of pressing)
Ø For testing, adjusting and calibrating all types of pressure measuring instruments.
Ø Hydraulic (DM water)pressure generation up to 700 bar
Hand pump shall have following features: Ergonomic handling, precise setting of pressure via a fine adjustment valve, compact size, and low weight for pressure generation at site, laboratories or workshops.

3.1.12. Up-to 5000 PSI quick push fit type fittings with automatic shut off valve shall be considered & those fittings are mounted directly on the front facia of the Test Bench. Above 5000 PSI, fitting with NRV (Non Return Valve) to be consider.

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 bidder within 100 metres 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 bidder. Before transportation all materials shall be suitably and securely packed and boxed.

3.1.15. The 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 Bidder shall also mobilise himself with adequate material handling equipment in addition to other erection tools and consumable keeping in view the erection schedule.

3.1.16. Transportation and dumping of all waste on day to day basis arising out of dismantling, construction, fabrication and erection to the area during Installation and Commissioning as directed by the executing authority shall be done by the 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 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), other requisite formats (Chapter 22 & 23).

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 their price bids as per the format given vide **Annexure HHH**. This tender is subjected to BEC/BRC as given in **Annexure CCC.**

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 Proposed multi-function calibration test bench will be consisting of :
• Pneumatic Pressure (vacuum to 20 bar)
• Hydraulic Pressure (0 to 700 bar)
• Temperature Section (Dry block, Temperature up-to 700 DEG C)

4.1.4 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:
• For Pressure generation up-to 20 bar will be pneumatic type.
• Connecting Block for connecting both sides Impulse pressure to DP Transmitter/Instrument to be supplied.
• Test Bench should have inbuilt facility to Calibrate HART Instruments.

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 two setup for pressure, one setup for temperature.

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 Test Bench should be implemented with one mimic panel for pressure up-to 7 bar, one pneumatic calibrator up-to 20 bar pressure, one multifunction calibrator, one digital multimeter, soldering station, one temperature dry block, one variable AC power supply and one variable DC power supply.

4.2.4 The dry block temperature calibrator (Make: Fluke, Model no: 9173) will be provided by M/s OIL. Bidders need to mount the same in the test bench.

4.2.5 The instruments supplied in the Test Bench should be panel mounted type and modular in design. Portable & battery type instruments are not to be mounted in the Test Bench.

4.2.6 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.

4.2.7 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.

4.2.8 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.

4.2.9 Care should be taken so that sufficient space is maintained for accessible by our maintenance personnel.

4.2.10 All the starting switches and mimic panel shall be located on the front portion for ease of accessibility.

4.2.11 The Test Bench shall have at least 4 drawers, having minimum size of 500 mm wide x 200 mm height.

4.2.12 The test bench should have:
• Two nos of overhead lamps.
• Four nos. AC sockets module round Type for 230V, 16A/5A outlets with individual MCBs.
• Blank Module on the Bench for future expansion.
• Sufficient space to be kept at the back for easy accessible of the instrument remove or repair or for some other activities

4.2.13 The stainless steel tubes/pipes used in the Test Bench 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.

4.2.14 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.

4.2.15 The electrical sockets installed in the Test Bench should be of IP65 rated complete with shutter proof technology.

4.2.16 Hand pump shall have following features: Ergonomic handling, precise setting of pressure via a fine adjustment valve, compact size, and low weight for pressure generation at site, laboratories or workshops (achieving max pressure within three to four nos. pressing).For high pressure generation DM water type shall be considered.

4.2.17 Suitable transmitters stands & clamps for fixing the flanges, transmitters & gauges to be supplied and the same to be mounted in the Test Bench.

4.2.18 Test bench should cover vacuum to 700 bar pressure range as per design concept explained above. Test bench should cover the temperature from ambient to 700 DEGC and different electrical parameter. Necessary pressure generator, module, calibrator, multifunction calibrator, tubing, fittings, power supply etc. as described in design concept, scope of work & technical specification shall be considered by bidder for completeness of proposed Instrument Test & Calibration Bench.

4.2.19 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 one such module with appropriate rating. These module shall be mounted on wall and the 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 Minimum 2 nos. port for 4 to 20 mA source & measurement where ever required. 4.8 Minimum 2 nos. 24V DC socket for instrument calibration with proper protection facility. 4.9 High Pressure Calibration section High pressure calibration section shall be suitable for testing, simulation & calibration of field instruments 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 section shall be comprised of the following: • Generating and calibrating pressure from 0 to 700 bar for various type smart HART and ordinary transmitters, switches, gauges etc. 4.10 Medium Pressure Generation & Measurement Medium pressure calibration section shall be suitable for testing, simulation & calibration of field instruments and primary instruments 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. • Pneumatic manual hand pump shall be fitted in the panel for generation of vacuum pressure to 20 bar with volumetric variator. 4.11 Electrical Calibration section The electrical section should have 5.5 digits multimeter, AC and DC power supplies etc. All the above equipment/ module should be penal mounted. 4.12 Temperature Calibration section • Temperature generation by using Dry block of temperature range up to 700 DEG C should be considered in the calibration test bench along with necessary power supply. • The dry block shall be fitted with the test bench. 4.13 Technical Specification of Different Equipment of Test Bench 4.13.1 Test Bench: Sr. No. Specifications Vendor Compliance Technical Literature / Brochure (Reference Page No.) 1) Item: Test Bench 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

4.13.2 Multifunction Calibrator
Sr. No. Specifications Vendor Compliance
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:-0.9 to 20 bar
Accuracy: 0.035 of FS (Minimum)
Range: 0-700bar
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 #
Accuracy : 0.05 % reading (Minimum)

5.2.4 Frequency
Range: 1 Hz to 50 KHz
Accuracy : 50 Hz (Minimum)

5.2.5 RTD Range: Pt100,Pt200,Pt500,Pt1000, Ni120,Cu10

Max. Resolution: 0.1°C (Minimum) 5.2.6 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 # 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 • Test cable set • Battery pack and charger • Interface cable • User manual 4.13.3. 51/2 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 5½ digits 4.2 Accuracy ±0.030% basic DC Volt ±0.2% basic AC Volt 5. Technical Specification 5.1 Mounting Panel Mount 5.2 Accuracy Ranges Resolution Accuracy DC Voltage 200 mV to 1000 V 1 µV ± 0.030 AC Voltage 200 mV to 750 V 1 µV ± 0.2 Resistance 200 # to 100 M# 0.01 # ± 0.02 DC Current 200 µA to 10 A 0.01 µA ± 0.03 AC Current 20 mA to 10 A 100 µA ± 0.3 Frequency 20 Hz to 1 MHz 1mHz ± 0.01 5.3 Continuity Function to be provided 5.4 Diode Test Function to be provided 6 Accessories Test Lead Set with Probe Interface Cable Operation Manual	

4.13.4 Pneumatic Pressure-Vacuum Panel
Sr. No. Specifications Vendor Compliance Technical Literature / Brochure (Reference Page No.)
1 Item Pneumatic Pressure-Vacuum Panel
2 Make Vendor to specify
3 Model Vendor to specify
4 General Features
4.1 Mounting Panel Mount
4.2 Regulated pressure Air supply from external source, finely controlled through three Precision pressure regulators. Output through Plug in Conectors.
4.3 Pressure Generation Module The Module should be provided built in Hand Pump for Vacuum & Pneumatic Pressure Generation
(Range: -0.9 to 20 bar) with Changeover for Pressure Vacuum Selection.
4.4 Output Two output plug-in connctors for Pressure and Vacuum.
4.5 Vent Button Pressure vent through vent button
5 Accessories Plug-in female connectors:4 nos.

4.13.5 Hydraulic Hand Pump
Sr. No. Specifications Vendor Compliance Technical Literature / Brochure (Reference Page No.)
1 Item Hydraulic Hand Pump
2 Make Vendor to specify
3 Model Vendor to specify
4 General Features
4.1 Ranges 0 to 700 bar
5. Technical Features
5.1 Pressure Range 0 to 700 bar
5.2 Operating fluid DM water
5.3 Reference Measuring Instruments connections NPTF ¼
5.4 Test Item Connections NPTF ½ and NPTF ¼ with 1 meter hose
5.5 Fine Adjustment Fine Adjustment valve/Volume Adjustment
5.6 Fluid Reservoir 100 cm3 (approx)
5.7 Material Anodized aluminium, brass, SS, ABS
5.8
Accessories
Operating fluid in plastic bottle (2 Liters)
Necessary BSP & NPT Adaptors (1/4, ½ and 3/8)
Storage Case
4.13.6 Pneumatic and Hydraulic Digital Test Gauge

Sr. No. Specifications Vendor Compliance Technical Literature / Brochure (Reference Page No.)
1 Item Digital Pneumatic and Hydraulic Test Gauge
2 Make Vendor to specify
3 Model Vendor to specify
4 General Features
4.1 Ranges 0 to 20 bar (For Pneumatic Application)
0 to 700 bar (For Hydraulic Application)
4.2 Material Stainless Steel
4.3 Display 5 1/2 digit

5. Technical specification 5.1 Accuracy 0.05% of Full Scale 5.2 Resolution mbar -0.1 & bar – 0.0001 5.3 Pressure units psi, bar, mbar, Kg/cm², inH2O, ft H2O, cmH2O, mH2O,mmH2O, k Pa, M Pa, in Hg, mmHg 5.4 Operating temperature Up to 50°C 5.5 Ingress Protection IP 65 5.6 Data logger Automatic recording facility to be provided 5.7 Communication Interface RS232 6 Accessories Adapter ¼ NPTF and ½ NPTF Batteries Operation manual Interface cable Storage Case 4.13.7 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 • 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 Meter Accuracy ±3 counts. 5.8 Line Regulation CV <0.1% + 3 mV RTD Measurement 5.9 Line Regulation CC <0.1% +2 mA 5.10 Load Regulation CV <0.02% + 5 mV 5.11 Load Regulation CC <0.1% + 3 mA Thermocouple Measurement 5.12 Ripple (Voltage) # 1 mV rms/3 mV pp 5.13 Ripple (Current) 0.04% rms 5.14 Short Circuit Protection Auto Recovery type 5.15 Over Voltage Protection Latching type 6 Accessories • Test leads • Test Report • User Manual • Interface cable 4.13.8 Dry Block Temperature Calibrator Sr. No. Specifications Vendor Compliance 1 Item Dry Block Temperature Calibrator	

2 Make Fluke
3 Model 9173
4 General Note
The Instrument will be supply by M/s OIL. Intregration in to the test bench is under Bidder's scope.

4.13.9 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 Mount
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 • Soldering Iron
• De-soldering Iron
• Standard Tips
• User and Service Manual

4.13.10 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

4.13.11 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 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 5.4 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. 4.13.12 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. ± 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 ±1.0% of range 6.4 Current Accuracy ±1.0% of range 6.5 Frequency 0.5% of mid frequency 4.13.13 Standard tool Kit Sr. No. Specifications Vendor Compliance Technical Literature / Brochure (Reference Page No.) 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 Universal Panel Key suitable for four different types of panel locks of size 6 mm square, 7-8 mm square, 7-8 mm triangle & 3-5 mm double. 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" 1 No
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

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

Instrumentation 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 room for installation of Test Bench. For mounting & installation of Test Bench & its accessories, necessary civil work is to be done by bidder. In this connection if any small renovation required in the room, bidder shall take care the same.

14. Exclusions & Deviations:

Exclusions as well as deviations from the Tender Specification, if any, shall be clearly stated under separate heads marked as "Exclusions" as per Schedule 14-1 and "Deviations" as per Schedule 14-2 respectively quoting the index and serial reference of Tender Specification.

15. 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. 15.1 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 • 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. 15.2 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. • Specification / Data sheets for each item • O & M manuals • Wiring diagram. • OEM’s Traceable Calibration Certificates for each item(as Annexure-18-1) • Part lists • All QA documents/test documents related to manufacturing. • Function test at shop. 15.3 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 in 3 copies to M/s OIL within 15 days time from the date of M/s OIL’s comments. 15.4 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. 15.5 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.

16. Inspection and Testing (FAT):

16.1 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.

16.2 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.

16.3 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.

16.4 The selected vendor shall give at least 15 days advance notice to M/s OIL for inspection. M/s OIL shall depute two (2) Engineers for the same. M/s OIL will bear the expenses of transportation, accommodation, boarding / lodging etc. for its personnel.

16.5 The inspection by M/s OIL or by M/s OIL's representative in any manner does not absolve the successful bidder of any liability and/or responsibility under this purchase order

16.6 Factory Acceptance Test (FAT): Bidders shall submit their layout plan along with the technical Bid. 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. M/s OIL will depute two (2) engineers to witness the complete functions and operation of the all the items of the Test Bench including accuracy at one workplace. 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.

16.7 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.

17. Onsite Training

17.1 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 (2 Days). The training is to be supplemented by manual in hard bound copy as well as soft copy (Minimum 2 sets).

18. Certification of Standard/Master instruments:

All the instruments as per Annexure-18-1 installed in the test bench should supply along with the necessary manufacturer's traceable calibration certificate. Same should be confirmed by bidder during bid.

19. INSTALLATION, COMMISSIONING AND TESTING (SAT):

19.1 The charges of Installation, commissioning, Site Acceptance Test (SAT), putting it into

operation and training at M/s OIL's premises are included in the rate for Installation and commissioning. The transportation including local transportation, accommodation, boarding / lodging for successful bidder's supervisor / technicians are included in the price.

19.2 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) including police verification of all the individuals, medical fitness certificate etc. After satisfactory receipt of all the documents, these persons prior to take up any work shall have to undergo safety induction training.

19.3 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.

19.4 The system will be deemed to be commissioned after 5 days (8 hours daily) complete test & calibration of equipment bench in Instrumentation Workshop, Moran.

19.5 Site Acceptance Test (SAT), will be as per sample format given in Schedule 16.5-1.

20. <u>WARRANTY / GUARANTEE</u>:

20.1 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 12 months from the date of successful commissioning / initial operation or 18 months from the date of despatch whichever is earlier.

20.2 If within the expiry 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.

20.3 The successful bidder shall obtain similar guarantees from each of the brought out items used in Test Bench. However, the overall responsibility shall lie with the successful bidder.

21. SPECIAL INSTRUCTIONS TO BIDDERS:

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

21.2 Specification of all the equipment 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.

21.3 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.

21.4 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. 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. 21.5 All equipment as may be necessary shall conform to the provision of Statutory and other Regulations in force such as Indian explosives Act 1884, Mines Act 1952, Oil Mines regulation1984, Indian Factories Act 1948, Indian Boiler Regulation 1950, State Factories Act 1948, Central Pollution Control Board, Indian Weights & Measures Act, etc. The Successful Bidder shall take necessary steps to get all the installations within his scope of supply approved by the concerned legal authorities. 21.6 The Bidder shall use new, good and tested quality materials. The workmanship shall be of high quality. 21.7 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. 21.8 After erection, all equipment, pipes, structures, etc., shall be thoroughly cleaned and 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. 21.9 Execution of entire work shall be carried out in such a manner that normal working of the workshop is not interrupted. 21.10 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. 21.11 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. 21.12 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. 21.13 Bidder shall provide the OEM or authorised dealer's authorization/ support letter for all critical bought out items as per Annexure: 22.14-1 and same to be provided along with the bid. 21.14 The Bidder must guarantee supply of spares and availability of support service for at least 10 years with effect from date of commissioning of the Test Bench supplied under the Tender / Order, if order is awarded to them by M/s OIL. Bidder needs to provide written compliance along with bid.	
Item No. 20 : Instrumentation Test & Calibration Bench, (qnty. – 1 AU)	

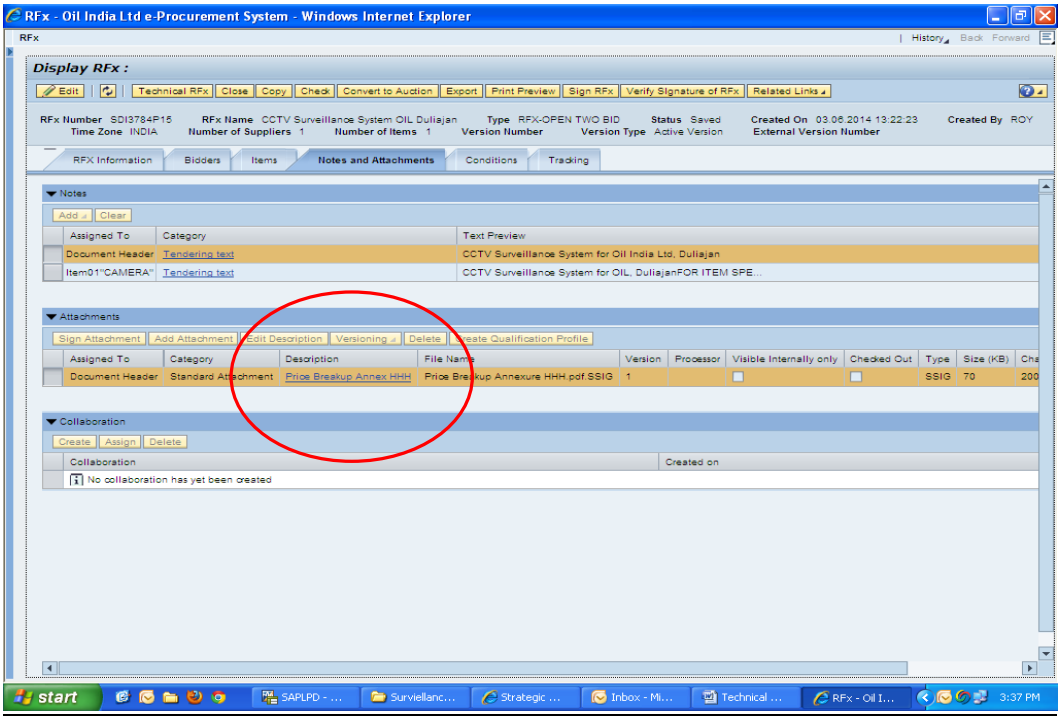
NOTES:

1) Bidders are requested to refer to the attached Booklet (Instrumentation Test & Calibration Bench-Moran).

2) All items shall be procured from the same source.

3) Price Breakup:

Bidders should submit the price breakup of all the items as per "Annexure HHH" which has been uploaded under "Notes & Attachments" > "Attachments" as shown below. The price breakup "Annexure HHH" should be filled up, signed and uploaded under "Notes & Attachments" > "Attachments" only. **The filled up price breakup of all the items should not be uploaded in Technical Attachment.**



Bidders should submit their bids (preferably in tabular form) explicitly mentioning compliance / non compliance to all the NIT terms and conditions of NIT.

Annexure: 1

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				
3.1.6				
3.1.7				
3.1.8				
3.1.9				
3.1.10				
3.1.11				
3.1.12				
3.1.13				
3.1.14				
3.1.15				
3.1.16				
3.1.17				
3.1.18				
3.1.19				
3.1.20				
3.1.21				
3.1.22				
3.1.23				

NIT item No	Agree	Not Agree	Remarks	Technical Literature / Brochure(Reference Page No.) where applicable
4.1.1				
4.1.2				
4.1.3				
4.1.4				
4.2.1				
4.2.2				
4.2.3				
4.2.4				
4.2.5				
4.2.6				
4.2.7				
4.2.8				
4.2.9				
4.2.10				
4.2.11				
4.2.12				
4.2.13				
4.2.14				
4.2.15				
4.2.16				
4.2.17				
4.2.18				
4.2.19				
4.3.1				
4.4				
4.5				

NIT item No	Agree	Not Agree	Remarks	Technical Literature / Brochure(Reference Page No.) where applicable
4.6				
4.7				
4.8				
4.9				
4.10				
4.11				
4.12				
5				
6				
7				
8				
9				
10				
11.1				
11.2				
12				
13				
14				
15.1				
15.2				
15.3				
15.4				
15.5				
16.1				
16.2				
16.3				

NIT item No	Agree	Not Agree	Remarks	Technical Literature / Brochure(Reference Page No.) where applicable
16.4				
16.5				
16.6				
16.7				
17.1				
18				
19.1				
19.2				
19.3				
19.4				
19.5				
20.1				
20.2				
20.3				
21.1				
21.2				
21.3				
21.4				
21.5				
21.6				
21.7				
21.8				
21.9				
21.10				
21.11				
21.12				

NIT item No	Agree	Not Agree	Remarks	Technical Literature / Brochure(Reference Page No.) where applicable
21.13				
21.14				

Signature of the Bidder

Designation:

Company Name:

Seal of Company

Date:

Annexure: 6-1

BILL OF MATERIAL

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 Multifunction Calibrator with Pressure Sensors (Pressure range: vacuum to 20 bar, 0-700 bar)	1 lot
3	Panel mounted type 5.5 Digital Multimeter	1 No
4	Pneumatic/Vacuum Panel with 3 Settable Regulators, Built In Hand Pump as per TS	1 Set
5	Hydraulic Hand Pump as per TS	1 No
6	Digital Pneumatic Test Gauge : Range (0 to 20 bar) as per TS	1 No
7	Digital Hydraulic Test Gauge : Range (0 to 700 bar) as per TS	1 No
8	Programmable DC Power Supply 0 to 32 VDC, 5A	1 No
9	Panel mounted type 0-250V,5A Variable AC Power Supply	1 No
10	Panel mounted type Soldering/De-Soldering Station	1 No
11	230V, 15/5A AC Sockets (DIN Type) with suitable plug and converter as per TS	4 Sets
12	Mains Power Control – MCB,ELCB, LED Indicator and Emergency Stop Push Button as per TS	1 Set
13	All necessary Fittings, reducers, connectors, probes, BSP & NPT adaptors ($^1/_8$ inch, ¼ inch, ½ inch & $^3/_8$ inch) & other accessories as required excluding very high pressure section (2000bar)	4 lot
14	Flanges for Calibrating Capillary type Gauges & Transmitters (Remote Seal)	1 lot
15	Standard Tool Kit	1 No
16	Anti-static mat with Wrist band	4 No
17	Heavy Duty Mat	1 No
18	Chairs	2 No
19	UPS – 2KVA	1 No
20	Installation, Testing, Commissioning	1 AU

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.

Annexure: 7-1

Scope of Services

1	Design, Engineering, Drawing Preparation 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

Annexure: 8-1

List of Preferred Makes

Sl. No.	Item	Make
1	Test Bench	Beamex, Fluke, GE(Druck), Wika/Scandura, YIL, Time Electronics
2	Panel mounted type Multifunction Calibrator with Pressure Sensors & HART	Beamex, Fluke, GE(Druck), Wika/Scandura, YIL, Time Electronics, AOIP SAS, Meriam Process echnologies
3	Panel mounted type 5.5 Digital Multimeter	Beamex, Fluke, GE(Druck), keysight, Wika/Scandura, YIL, Time Electronics, Extech Instruments Corporation
4	Pneumatic/Vacuum Panel with 3 Settable Regulators, Built In Hand Pump as per TS	Beamex, Fluke, GE(Druck), Wika/Scandura, YIL, Time Electronics
5	Hydraulic Hand Pump as per TS	Beamex, Fluke, GE(Druck), Wika/Scandura, YIL, Time Electronics
6	Digital Pneumatic Test Gauge : Range (0 to 20 bar) as per TS	Wika,Scandura GE(Druck), Crystal, Fluke, Time Electronics
7	Digital Hydraulic Test Gauge : Range (0 to 700 bar) as per TS	Wika,Scandura GE(Druck), Crystal, Fluke, Time Electronics
8	Programmable DC Power Supply 0 to 32 VDC, 5A	Aplab, Scheneider, Siemens, Phoenix, Tektronix, B&K Precision
9	Panel mounted type Soldering/De-Soldering Station	Hakko ,Weller, Digikey
10	Panel mounted type 0-250V,5A Variable AC Power Supply	Aplab, Scheneider, Siemens, Phoenix, Tektronix, B&K, Precision,AE, Agronic,Regole
11	All necessary Fittings, reducers, connectors, probes, BSP & NPT adaptors (1/8 inch, ¼ inch, ½ inch & 3/8 inch) & other accessories as required excluding very high pressure section (1000bar)	Beamex, Fluke, GE(Druck), Wika/Scandura, YIL, Swagelok,Parker
12	Standard Tool Kit	Phoenix, Stanley, Taparia

Annexure: 18-1

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

Sl. No.	Item	Certificate Validity (In Years)
1	Multifunction Calibrator with Pressure Sensors & HART	1
2	5.5 Digital Multimeter	1
3	Digital Pneumatic Test Gauge : Range (0 to 20 bar)	1
4	Digital Hydraulic Test Gauge : Range (0 to 700 bar)	1

Annexure: 22.14-1

In case of bought out, OEM or authorised dealer authorization/ support letter for following critical items:

Sl. No.	Description
1	Panel mounted type Multifunction Calibrator with Pressure Sensors & HART
2	Panel mounted type 5.5 Digital Multimeter
3	Programmable DC Power Supply 0 to 32 VDC, 5A
4	Digital Pneumatic Test Gauge : Range (0 to 20 bar)
5	Digital Hydraulic Test Gauge : Range (0 to 700 bar)

Schedule 10-1

List of Recommended / Mandatory Spare Parts for 02 Year Maintenance and Operation
(To be filled up by Bidder)

Sl No	Parts	Description Of Spare	Recommended Quantity	Unit Price	Remarks
1	MCB				
2	ELCB				
3	Switches				
4	Oil				
5	Set of Quick Connecters				
6	Socket & Plug				

Signature of the Bidder

Designation:

Company Name:

Seal of Company

Date:

Schedule 11.1-1

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

Sl 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	Set of Seals & O Rings	

Signature of the Bidder

Designation:

Company Name:

Seal of Company

Date:

Schedule 11.2-1

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		

Signature of the Bidder

Designation:

Company Name:

Seal of Company

Date:

Schedule 14-1

List of Exclusions
(To be filled up by Bidder)

Sl No	Reference Clause of TS	Details of Exclusions	Reasons

Signature of the Bidder

Designation:

Company Name:

Seal of Company

Date:

Schedule 14-2

List of Deviations
(To be filled up by Bidder)

Sl No	Reference Clause of TS	Details of Deviations	Reasons

Signature of the Bidder

Designation:

Company Name:

Seal of Company

Date:

Schedule 16.5-1

Site Acceptance Test(SAT)					
Manufacturer's Name & Address	Item: Design and Supply of Pressure, Temperature, and Electrical 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			
Prepared By		Checked By		Approved by	

Tender No.: SDI4914P18 dated 02.06.2017

INSTRUMENTATION TEST & CALIBRATION BENCH- MORAN

TABLE OF CONTENTS-CHAPTERS

TABLE OF CONTENTS-ANNEXURE

TABLE OF CONTENTS-SCHEDULE

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. M/s OIL is having production set-up at Moran known as Moran Oil Field. Moran is well connected by Air with nearest Airport Dibrugarh, 45 km away. Instrumentation section of Moran provides support for installation, commissioning and maintenance of field instruments in Production installations under Moran Oil Fields. Electronics and Pneumatic workshop of Moran Instrumentation section does calibration, repairing, testing and certification to all Electronics & pneumatic process instruments/sensors used in Production installations under Moran Oil Fields.

1.1.2 At present we do not have any Instrumentation Test & Calibration Bench in Instrumentation section of Moran Oil Fields. So one latest state-of-the-art complete instrumentation test & calibration bench for pressure, temperature & electrical parameters is required to meet operational requirements.

1.1.3 In view of above, we intend to modernise our Instrumentation workshop with an **Instrumentation Test & Calibration Bench** for smooth testing, calibration facility. Therefore, one number **Instrumentation Test & Calibration Bench**, tailor made to Instrumentation workshop's requirement, is to be procured by M/s OIL covering Pressure and Temperature range up-to 700 bar and 700 DEG C respectively.

1.1.4 The bench should have following minimum features:

- Pressure calibration up-to 700 bar.
- Temperature calibration up-to 700 DEG C.
- Calibration of HART instruments
- Simulation of Voltage, Current source, Thermocouple, RTD etc.

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**, and as per special instruction to bidders as per **Chapter 21** of this specification.

1.2.2 The specification shall be read in conjunction with the Tender documents 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 : Moran, 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 : 100% at 21 Deg. C
monsoon
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 Instrumentation workshop of OIL INDIA LIMITED, Moran, Assam.

3.1.2. The scope of work for supplying and commissioning of **Instrumentation Test & Calibration Bench** in Instrumentation workshop 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 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 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.

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 and High pressure gauge as well as for temperature transmitter shall be supplied & erected by the bidder.

3.1.5 All commissioning spares like battery, battery charger seal kit, fittings, electrical connectors etc., has to be supplied at Bidder's cost.

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 required 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 (2 nos. cushion chairs having powder coated metal framed with 5 caster legs) will also be under bidder's scope.

3.1.8. Supply & laying of SS pipe for pneumatic supply from existing compressor 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 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 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. Hand pumps will be used for the following applications:

- Simple pressure generation for on site, laboratories or workshops (Max pressure can be achieved within three to four nos. of pressing)
- For testing, adjusting and calibrating all types of pressure measuring instruments.
- Hydraulic (DM water)pressure generation up to 700 bar

Hand pump shall have following features: Ergonomic handling, precise setting of pressure via a fine adjustment valve, compact size, and low weight for pressure generation at site, laboratories or workshops.

3.1.12. Up-to 5000 PSI quick push fit type fittings with automatic shut off valve shall be considered & those fittings are mounted directly on the front facia of the Test Bench. Above 5000 PSI, fitting with NRV (Non Return Valve) to be consider.

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 bidder within 100 metres 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 bidder. Before transportation all materials shall be suitably and securely packed and boxed.

3.1.15. The 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 Bidder shall also mobilise himself with adequate material handling equipment in addition to other erection tools and consumable keeping in view the erection schedule.

3.1.16. Transportation and dumping of all waste on day to day basis arising out of dismantling, construction, fabrication and erection to the area during Installation and Commissioning as directed by the executing authority shall be done by the 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 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**), other requisite formats (**Chapter 22 & 23**).

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 their price bids as per the format given vide **Annexure HHH**. This tender is subjected to BEC/BRC as given in **Annexure CCC.**

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 Proposed multi-function calibration test bench will be consisting of :

- Pneumatic Pressure (vacuum to 20 bar)
- Hydraulic Pressure (0 to 700 bar)
- Temperature Section (Dry block, Temperature up-to 700 DEG C)

4.1.4 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:

- For Pressure generation up-to 20 bar will be pneumatic type.
- Connecting Block for connecting both sides Impulse pressure to DP Transmitter/Instrument to be supplied.
- Test Bench should have inbuilt facility to Calibrate HART Instruments.

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 **two** setup for pressure, **one** setup for temperature.

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 Test Bench should be implemented with one mimic panel for pressure up-to 7 bar, one pneumatic calibrator up-to 20 bar pressure, one multifunction calibrator, one digital multimeter, soldering station, one temperature dry block, one variable AC power supply and one variable DC power supply.

4.2.4 The dry block temperature calibrator (Make: **Fluke**, Model no: **9173**) will be provided by M/s OIL. Bidders need to mount the same in the test bench.

4.2.5 The instruments supplied in the Test Bench should be panel mounted type and modular in design. Portable & battery type instruments are not to be mounted in the Test Bench.

4.2.6 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.

4.2.7 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.

4.2.8 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.

4.2.9 Care should be taken so that sufficient space is maintained for accessible by our maintenance personnel.

4.2.10 All the starting switches and mimic panel shall be located on the front portion for ease of accessibility.

4.2.11 The Test Bench shall have at least 4 drawers, having minimum size of 500 mm wide x 200 mm height.

4.2.12 The test bench should have:

- Two nos of overhead lamps.
- Four nos. AC sockets module round Type for 230V, 16A/5A outlets with individual MCBs.
- Blank Module on the Bench for future expansion.
- Sufficient space to be kept at the back for easy accessible of the instrument remove or repair or for some other activities

4.2.13 The stainless steel tubes/pipes used in the Test Bench 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.

4.2.14 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.

4.2.15The electrical sockets installed in the Test Bench should be of IP65 rated complete with shutter proof technology.

4.2.16 Hand pump shall have following features: Ergonomic handling, precise setting of pressure via a fine adjustment valve, compact size, and low weight for pressure generation at site, laboratories or workshops (achieving max pressure within three to four nos. pressing).For high pressure generation DM water type shall be considered.

4.2.17 Suitable transmitters stands & clamps for fixing the flanges, transmitters & gauges to be supplied and the same to be mounted in the Test Bench.

4.2.18 Test bench should cover **vacuum to 700 bar** pressure range as per design concept explained above. Test bench should cover the temperature from ambient to **700 DEGC** and different electrical parameter. Necessary pressure generator, module, calibrator, multifunction calibrator, tubing, fittings, power supply etc. as described in design concept, scope of work & technical specification shall be considered by bidder for completeness of proposed **Instrument Test & Calibration Bench.**

4.2.19 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 one such module with appropriate rating. These module shall be mounted on wall and the 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 Minimum 2 nos. port for 4 to 20 mA source & measurement where ever required.

4.8 Minimum 2 nos. 24V DC socket for instrument calibration with proper protection facility.

4.9 **High Pressure Calibration section**

High pressure calibration section shall be suitable for testing, simulation & calibration of field instruments 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 section shall be comprised of the following:

- Generating and calibrating pressure from **0 to 700 bar** for various type smart HART and ordinary transmitters, switches, gauges etc.

4.10 **Medium Pressure Generation & Measurement**

Medium pressure calibration section shall be suitable for testing, simulation & calibration of field instruments and primary instruments 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.

- Pneumatic manual hand pump shall be fitted in the panel for generation of vacuum pressure to 20 bar with volumetric variator.

4.11 **Electrical Calibration section**

The electrical section should have 5.5 digits multimeter, AC and DC power supplies etc. All the above equipment/ module should be penal mounted.

4.12 **Temperature Calibration section**

- Temperature generation by using Dry block of temperature range up to 700 DEG C should be considered in the calibration test bench along with necessary power supply.

- The dry block shall be fitted with the test bench.

4.13 **Technical Specification of Different Equipment of Test Bench**

4.13.1 **Test Bench:**

Sr. No.	Specifications		Vendor Compliance Technical Literature / Brochure (Reference Page No.)
1	Item	Test Bench	
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

4.13.2 **Multifunction Calibrator**

Sr. No.	Specifications		Vendor Compliance
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:-0.9 to 20 bar	
		Accuracy: 0.035 of FS (Minimum)	
		Range: 0-700bar	
		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)	
5.2.4	Frequency	Range: 1 Hz to 50 KHz	
		Accuracy : 50 Hz (Minimum)	
5.2.5	RTD	Range: Pt100,Pt200,Pt500,Pt1000, Ni120,Cu10	
		Max. Resolution: 0.1°C (Minimum)	
5.2.6	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**	• Test cable set • Battery pack and charger • Interface cable • User manual	

4.13.3. **5$^{1}/_{2}$ 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	5½ digits			
4.2	Accuracy	±0.030% basic DC Volt			
		±0.2% basic AC Volt			
5.	**Technical Specification**				
5.1	Mounting	Panel Mount			
5.2	Accuracy	Ranges	Resolution	Accuracy	
	DC Voltage	200 mV to 1000 V	1 µV	± 0.030	
	AC Voltage	200 mV to 750 V	1 µV	± 0.2	
	Resistance	200 Ω to 100 MΩ	0.01 Ω	± 0.02	
	DC Current	200 µA to 10 A	0.01 µA	± 0.03	
	AC Current	20 mA to 10 A	100 µA	± 0.3	
	Frequency	20 Hz to 1 MHz	1mHz	± 0.01	
5.3	Continuity	Function to be provided			
5.4	Diode Test	Function to be provided			
6	**Accessories**	Test Lead Set with Probe			
		Interface Cable			
		Operation Manual			

4.13.4 **Pneumatic Pressure-Vacuum Panel**

Sr. No.	Specifications		Vendor Compliance Technical Literature / Brochure (Reference Page No.)
1	Item	Pneumatic Pressure-Vacuum Panel	
2	Make	Vendor to specify	
3	Model	Vendor to specify	
4	**General Features**		
4.1	Mounting	Panel Mount	
4.2	Regulated pressure	Air supply from external source, finely controlled through three Precision pressure regulators. Output through Plug in Conectors.	
4.3	Pressure Generation Module	The Module should be provided built in Hand Pump for Vacuum & Pneumatic Pressure Generation (Range: -0.9 to 20 bar) with Changeover for Pressure Vacuum Selection.	
4.4	Output	Two output plug-in connctors for Pressure and Vacuum.	
4.5	Vent Button	Pressure vent through vent button	
5	**Accessories**	Plug-in female connectors:4 nos.	

4.13.5 **Hydraulic Hand Pump**

Sr. No.	Specifications		Vendor Compliance Technical Literature / Brochure (Reference Page No.)
1	Item	Hydraulic Hand Pump	
2	Make	Vendor to specify	
3	Model	Vendor to specify	
4	**General Features**		
4.1	Ranges	0 to 700 bar	
5.	**Technical Features**		
5.1	Pressure Range	0 to 700 bar	
5.2	Operating fluid	DM water	
5.3	Reference Measuring Instruments connections	NPTF ¼	
5.4	Test Item Connections	NPTF ½ and NPTF ¼ with 1 meter hose	
5.5	Fine Adjustment	Fine Adjustment valve/Volume Adjustment	
5.6	Fluid Reservoir	100 cm3 (approx)	
5.7	Material	Anodized aluminium, brass, SS, ABS	
5.8	Accessories	Operating fluid in plastic bottle (2 Liters)	
		Necessary BSP & NPT Adaptors (1/4, ½ and 3/8)	
		Storage Case	

4.13.6 **Pneumatic and Hydraulic Digital Test Gauge**

Sr. No.	Specifications		Vendor Compliance Technical Literature / Brochure (Reference Page No.)
1	Item	**Digital Pneumatic and Hydraulic Test Gauge**	
2	Make	Vendor to specify	
3	Model	Vendor to specify	
4	**General Features**		
4.1	Ranges	**0 to 20 bar (For Pneumatic Application)** **0 to 700 bar (For Hydraulic Application)**	
4.2	Material	Stainless Steel	
4.3	Display	5 1/2 digit	
5.	**Technical specification**		
5.1	Accuracy	0.05% of Full Scale	
5.2	Resolution	mbar -0.1 & bar – 0.0001	
5.3	Pressure units	psi, bar, mbar, Kg/cm², inH2O, ft H2O, cmH2O, mH2O,mmH2O, k Pa, M Pa, in Hg, mmHg	
5.4	Operating temperature	Up to 50°C	
5.5	Ingress Protection	IP 65	
5.6	Data logger	Automatic recording facility to be provided	
5.7	Communication Interface	RS232	
6	**Accessories**	Adapter ¼ NPTF and ½ NPTF	
		Batteries	
		Operation manual	
		Interface cable	
		Storage Case	

4.13.7 **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	• 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	Meter Accuracy	±3 counts.	
5.8	Line Regulation CV	<0.1% + 3 mV	
5.9	Line Regulation CC	<0.1% +2 mA	
5.10	Load Regulation CV	<0.02% + 5 mV	
5.11	Load Regulation CC	<0.1% + 3 mA	
5.12	Ripple (Voltage)	≤ 1 mV rms/3 mV pp	
5.13	Ripple (Current)	0.04% rms	
5.14	Short Circuit Protection	Auto Recovery type	
5.15	Over Voltage Protection	Latching type	
6	**Accessories**	• Test leads • Test Report • User Manual • Interface cable	

4.13.8 **Dry Block Temperature Calibrator**

Sr. No.	Specifications		Vendor Compliance
1	Item	Dry Block Temperature Calibrator	
2	Make	**Fluke**	
3	Model	**9173**	
4	**General Note**		
	The Instrument will be supply by M/s OIL. Intregration in to the test bench is under Bidder's scope.		

4.13.9 **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 Mount	
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**	• Soldering Iron • De-soldering Iron • Standard Tips • User and Service Manual	

4.13.10 **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	

4.13.11 **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	
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	
5.4	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.

4.13.12 **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. ± 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	±1.0% of range	
6.4	Current Accuracy	±1.0% of range	
6.5	Frequency	0.5% of mid frequency	

4.13.13 **Standard tool Kit**

Sr. No.	Specifications			Vendor Compliance Technical Literature / Brochure (Reference Page No.)
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	Universal Panel Key suitable for four different types of panel locks of size 6 mm square, 7-8 mm square, 7-8 mm triangle & 3-5 mm double.		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"		1 No	
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	

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 Instrumentation 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 room for installation of Test Bench. For mounting & installation of Test Bench & its accessories, necessary civil work is to be done by bidder. In this connection if any small renovation required in the room, bidder shall take care the same.

14. Exclusions & Deviations

Exclusions as well as deviations from the Tender Specification, if any, shall be clearly stated under separate heads marked as "Exclusions" as per **Schedule 14-1** and "Deviations" as per **Schedule 14-2** respectively quoting the index and serial reference of Tender Specification.

15. 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.

15.1 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
- 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.

15.2 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.
- Specification / Data sheets for each item
- O & M manuals
- Wiring diagram.
- OEM's Traceable Calibration Certificates for each item(as **Annexure-18-1**)
- Part lists
- All QA documents/test documents related to manufacturing.
- Function test at shop.

15.3 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 in 3 copies to M/s OIL within 15 days time from the date of M/s OIL's comments.

15.4 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.

15.5 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.

16. Inspection and Testing(FAT):

16.1 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.

16.2 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.

16.3 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.

16.4 The selected vendor shall give at least 15 days advance notice to M/s OIL for inspection. M/s OIL shall depute two (2) Engineers for the same. M/s OIL will bear the expenses of transportation, accommodation, boarding / lodging etc. for its personnel.

16.5 The inspection by M/s OIL or by M/s OIL's representative in any manner does not absolve the successful bidder of any liability and/or responsibility under this purchase order

16.6 **Factory Acceptance Test (FAT)**: Bidders shall submit their layout plan along with the technical Bid. 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. M/s OIL will depute two (2) engineers to witness the complete functions and operation of the all the items of the Test Bench including accuracy at one workplace. 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.

16.7 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.

17. Onsite Training

17.1 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 (2 Days). The training is to be supplemented by manual in hard bound copy as well as soft copy (Minimum 2 sets).

18. Certification of Standard/Master instruments:

All the instruments as per **Annexure-18-1** installed in the test bench should supply along with the necessary manufacturer's traceable calibration certificate. Same should be confirmed by bidder during bid.

19. INSTALLATION, COMMISSIONING AND TESTING (SAT):

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

19.2 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) including police verification of all the individuals, medical fitness certificate etc. After satisfactory receipt of all the documents, these persons prior to take up any work shall have to undergo safety induction training.

19.3 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.

19.4 The system will be deemed to be commissioned after 5 days (8 hours daily) complete test & calibration of equipment bench in Instrumentation Workshop, Moran.

19.5 Site Acceptance Test (SAT), will be as per sample format given in **Schedule 16.5-1.**

20. WARRANTY / GUARANTEE :

20.1 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 12 months from the date of successful commissioning / initial operation or 18 months from the date of despatch whichever is earlier.

20.2 If within the expiry 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.

20.3 The successful bidder shall obtain similar guarantees from each of the brought out items used in Test Bench. However, the overall responsibility shall lie with the successful bidder.

21. SPECIAL INSTRUCTIONS TO BIDDER

21.1 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.

21.2 Specification of all the equipment 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**.

21.3 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.

21.4 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. 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.

21.5 All equipment as may be necessary shall conform to the provision of Statutory and other Regulations in force such as Indian explosives Act 1884, Mines Act 1952, Oil Mines regulation1984, Indian Factories Act 1948, Indian Boiler Regulation 1950, State Factories Act 1948, Central Pollution Control Board, Indian Weights & Measures Act, etc. The Successful Bidder shall take necessary steps to get all the installations within his scope of supply approved by the concerned legal authorities.

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

21.7 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.

21.8 After erection, all equipment, pipes, structures, etc., shall be thoroughly cleaned and 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.

21.9 Execution of entire work shall be carried out in such a manner that normal working of the workshop is not interrupted.

21.10 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.

21.11 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.

21.12 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.

21.13 Bidder shall provide the OEM or authorised dealer's authorization/ support letter for all critical bought out items as per **Annexure: 22.14-1** and same to be provided along with the bid.

21.14 The Bidder must guarantee supply of spares and availability of support service for at least 10 years with effect from date of commissioning of the Test Bench supplied under the Tender / Order, if order is awarded to them by M/s OIL. Bidder needs to provide written compliance along with bid.

Annexure: 1

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				
3.1.6				
3.1.7				
3.1.8				
3.1.9				
3.1.10				
3.1.11				
3.1.12				
3.1.13				
3.1.14				
3.1.15				
3.1.16				
3.1.17				
3.1.18				
3.1.19				
3.1.20				
3.1.21				
3.1.22				
3.1.23				

NIT item No	Agree	Not Agree	Remarks	Technical Literature / Brochure(Reference Page No.) where applicable
4.1.1				
4.1.2				
4.1.3				
4.1.4				
4.2.1				
4.2.2				
4.2.3				
4.2.4				
4.2.5				
4.2.6				
4.2.7				
4.2.8				
4.2.9				
4.2.10				
4.2.11				
4.2.12				
4.2.13				
4.2.14				
4.2.15				
4.2.16				
4.2.17				
4.2.18				
4.2.19				
4.3.1				
4.4				
4.5				

NIT item No	Agree	Not Agree	Remarks	Technical Literature / Brochure(Reference Page No.) where applicable
4.6				
4.7				
4.8				
4.9				
4.10				
4.11				
4.12				
5				
6				
7				
8				
9				
10				
11.1				
11.2				
12				
13				
14				
15.1				
15.2				
15.3				
15.4				
15.5				
16.1				
16.2				
16.3				

NIT item No	Agree	Not Agree	Remarks	Technical Literature / Brochure(Reference Page No.) where applicable
16.4				
16.5				
16.6				
16.7				
17.1				
18				
19.1				
19.2				
19.3				
19.4				
19.5				
20.1				
20.2				
20.3				
21.1				
21.2				
21.3				
21.4				
21.5				
21.6				
21.7				
21.8				
21.9				
21.10				
21.11				
21.12				

NIT item No	Agree	Not Agree	Remarks	Technical Literature / Brochure(Reference Page No.) where applicable
21.13				
21.14				
21.15				

Signature of the Bidder

Designation:

Company Name:

Seal of Company

Date:

Annexure: 6-1

BILL OF MATERIAL

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 Multifunction Calibrator with Pressure Sensors (Pressure range: vacuum to 20 bar, 0-700 bar)	1 lot
3	Panel mounted type 5.5 Digital Multimeter	1 No
4	Pneumatic/Vacuum Panel with 3 Settable Regulators, Built In Hand Pump as per TS	1 Set
5	Hydraulic Hand Pump as per TS	1 No
6	Digital Pneumatic Test Gauge : Range (0 to 20 bar) as per TS	1 No
7	Digital Hydraulic Test Gauge : Range (0 to 700 bar) as per TS	1 No
8	Programmable DC Power Supply 0 to 32 VDC, 5A	1 No
9	Panel mounted type 0-250V,5A Variable AC Power Supply	1 No
10	Panel mounted type Soldering/De-Soldering Station	1 No
11	230V, 15/5A AC Sockets (DIN Type) with suitable plug and converter as per TS	4 Sets
12	Mains Power Control – MCB,ELCB, LED Indicator and Emergency Stop Push Button as per TS	1 Set
13	All necessary Fittings, reducers, connectors, probes, BSP & NPT adaptors ($^1/_8$ inch, ¼ inch, ½ inch & $^3/_8$ inch) & other accessories as required excluding very high pressure section (2000bar)	4 lot
14	Flanges for Calibrating Capillary type Gauges & Transmitters (Remote Seal)	1 lot
15	Standard Tool Kit	1 No
16	Anti-static mat with Wrist band	4 No
17	Heavy Duty Mat	1 No
18	Chairs	2 No
19	UPS – 2KVA	1 No
20	Installation, Testing, Commissioning	1 AU

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 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

Annexure: 8-1

List of Preferred Makes

Sl. No.	Item	Make
1	Test Bench	Beamex, Fluke, GE(Druck), Wika/Scandura, YIL, Time Electronics
2	Panel mounted type Multifunction Calibrator with Pressure Sensors & HART	Beamex, Fluke, GE(Druck), Wika/Scandura, YIL, Time Electronics, AOIP SAS, Meriam Process echnologies
3	Panel mounted type 5.5 Digital Multimeter	Beamex, Fluke, GE(Druck), keysight, Wika/Scandura, YIL, Time Electronics, Extech Instruments Corporation
4	Pneumatic/Vacuum Panel with 3 Settable Regulators, Built In Hand Pump as per TS	Beamex, Fluke, GE(Druck), Wika/Scandura, YIL, Time Electronics
5	Hydraulic Hand Pump as per TS	Beamex, Fluke, GE(Druck), Wika/Scandura, YIL, Time Electronics
6	Digital Pneumatic Test Gauge : Range (0 to 20 bar) as per TS	Wika,Scandura GE(Druck), Crystal, Fluke, Time Electronics
7	Digital Hydraulic Test Gauge : Range (0 to 700 bar) as per TS	Wika,Scandura GE(Druck), Crystal, Fluke, Time Electronics
8	Programmable DC Power Supply 0 to 32 VDC, 5A	Aplab, Scheneider, Siemens, Phoenix, Tektronix, B&K Precision
9	Panel mounted type Soldering/De-Soldering Station	Hakko ,Weller, Digikey
10	Panel mounted type 0-250V,5A Variable AC Power Supply	Aplab, Scheneider, Siemens, Phoenix, Tektronix, B&K, Precision,AE, Agronic,Regole
11	All necessary Fittings, reducers, connectors, probes, BSP & NPT adaptors (1/8 inch, ¼ inch, ½ inch & 3/8 inch) & other accessories as required excluding very high pressure section (1000bar)	Beamex, Fluke, GE(Druck), Wika/Scandura, YIL, Swagelok,Parker
12	Standard Tool Kit	Phoenix, Stanley, Taparia

Annexure: 18-1

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

Sl. No.	Item	Certificate Validity (In Years)
1	Multifunction Calibrator with Pressure Sensors & HART	1
2	5.5 Digital Multimeter	1
3	Digital Pneumatic Test Gauge : Range (0 to 20 bar)	1
4	Digital Hydraulic Test Gauge : Range (0 to 700 bar)	1

Annexure: 22.14-1

In case of bought out, OEM or authorised dealer authorization/ support letter for following critical items:

Sl. No.	Description
1	Panel mounted type Multifunction Calibrator with Pressure Sensors & HART
2	Panel mounted type 5.5 Digital Multimeter
3	Programmable DC Power Supply 0 to 32 VDC, 5A
4	Digital Pneumatic Test Gauge : Range (0 to 20 bar)
5	Digital Hydraulic Test Gauge : Range (0 to 700 bar)

Schedule 10-1

List of Recommended / Mandatory Spare Parts for 02 Year Maintenance and Operation
(To be filled up by Bidder)

Sl No	Parts	Description Of Spare	Recommended Quantity	Unit Price	Remarks
1	MCB				
2	ELCB				
3	Switches				
4	Oil				
5	Set of Quick Connecters				
6	Socket & Plug				

Signature of the Bidder

Designation:

Company Name:

Seal of Company

Date:

Schedule 11.1-1

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

Sl 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	Set of Seals & O Rings	

Signature of the Bidder

Designation:

Company Name:

Seal of Company

Date:

Schedule 11.2-1

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		

Signature of the Bidder

Designation:

Company Name:

Seal of Company

Date:

Schedule 14-1

List of Exclusions

(To be filled up by Bidder)

Sl No	Reference Clause of TS	Details of Exclusions	Reasons

Signature of the Bidder

Designation:

Company Name:

Seal of Company

Date:

Schedule 14-2

List of Deviations
(To be filled up by Bidder)

Sl No	Reference Clause of TS	Details of Deviations	Reasons

Signature of the Bidder

Designation:

Company Name:

Seal of Company

Date:

Schedule 16.5-1

Site Acceptance Test(SAT)					
Manufacturer's Name & Address	Item: Design and Supply of Pressure, Temperature, and Electrical 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			

Prepared By Checked By Approved by

Technical Bid Checklist **Annexure-EEE**

Tender No.	
Bidder's Name :	

SL. NO.	BEC / TENDER REQUIREMENTS	Compliance by Bidder	
		Indicate 'Confirmed' / 'Not Confirmed' / Not applicable	Indicate Corresponding page ref. of unpriced bid or Comments
1	**Confirm that validity has been offered as per NIT.**		
2	**Confirm that Bid Security / Earnest Money has been submitted as per NIT (Wherever Applicable) ?**		
3	**Confirm that you shall submit Performance security (in the event of placement of order) (Wherever Applicable) ?**		
4	**Confirm that duly signed Integrity Pact has been submitted as per NIT (Wherever Applicable) ?**		
5	**Confirm that you have submitted documentary evidence of successfully executing one Purchase order as stipulated in NIT in any of the preceding 5 financial years (*)**		
6	**Confirm that you have submitted Balance Sheet and Profit and Loss Account of any of the preceding 3 financial years certified by a chartered accountant.**		
7	**Confirm that the bid has been signed using Class 3 digital certificate with Organisation's Name as per NIT.**		
8	**Confirm that you have not taken any exception/deviations to the NIT .**		

NOTE: Please fill up the greyed cells only.

(*) Purchase Orders along with copies of any of the documents in respect of satisfactory execution of the Purchase Orders should be submitted – (i) Satisfactory Inspection Report (OR) (ii) Satisfactory Supply Completion / Installation Report (OR) (iii) Consignee Receipted Delivery Challans (OR) (iv) Central Excise Gate Pass / Tax , Invoices issued under relevant rules of Central Excise / VAT (OR) (v) any other documentary evidence that can substantiate the satisfactory execution of the purchase order cited above.

Response Sheet **Annexure-FFF**

Tender No.	
Bidders Name	

Bidders Response Sheet

Sl No.	Description	Remarks
1	Place of Despatch	
2	Whether Freight charges have been included in your quoted prices	
3	Whether Insurance charges have been included in your quoted prices	
4	Make of quoted Product	
5	Offered Validity of Bid as per NIT	
6	Bid Security Submitted (if applicable)	
6	Details of Bid Security Submitted to OIL (if applicable)	
	a) Bid Security Amount (In Rs):	
	b) Bid Security Valid upto:	
7	Whether you shall submit Performance Security in the event of placement of order on you (if applicable)	
8	Integrity Pact Submitted (if applicable)	
9	Whether you have submitted documentary evidence of successfully executing one Purchase order as stipulated in NIT in any of the preceding 5 financial years (*)	
10	Whether you have submitted Balance Sheet and Profit and Loss Account of any of the preceding 3 financial years certified by a chartered accountant.	
11	Delivery Period in weeks from placement of order	
12	Complied to Payment terms of NIT (if applicable) otherwise to Standard Payment Terms of OIL or not.	
13	If bidder is MSE whether you have quoted your own product	
14	If Bid security submitted as Bank Guarantee, Name and Full Address of Issuing Bank including Telephone, Fax Nos and Email id of branch manager	

NOTE: Please fill up the greyed cells only.

(*) Purchase Orders along with copies of any of the documents in respect of satisfactory execution of the Purchase Orders should be submitted – (i) Satisfactory Inspection Report (OR) (ii) Satisfactory Supply Completion / Installation Report (OR) (iii) Consignee Receipted Delivery Challans (OR) (iv) Central Excise Gate Pass / Tax , Invoices issued under relevant rules of Central Excise / VAT (OR) (v) any other documentary evidence that can substantiate the satisfactory

ANNEXURE - GGG

(TO BE FILLED UP BY ALL THE VENDOR IN THEIR OWN LETER HEAD)
(ALL FIELDS ARE MANDATORY)

Tender No.	**:……**
Name of Beneficiary	**:M/s.……**
Vendor Code	**:……...**
Address	**:...…….**
	...……...
Phone No. (Land Line)	**:...…….**
Mobile No.	**:...…….**
E-mail address	**:...…….**
Bank Account No. (Minimum	
Eleven Digit No.)	**:...…….**
Bank Name	**:...…….**
Branch	**:...…….**
Complete Address of your	**:...…….**
Bank	**:...…….**

IFSC Code of your Bank

a) RTGS	**:……...**
b) NEFT	**:……...**
PAN	**:……...**
VAT Registration No.	**:……...**
CST Registration No.	**:……...**
Service Tax Registration No.	**:……...**
Provident Fund Registration	**:……...**

I/We confirm and agree that all payments due to me/us from Oil India Limited can be remitted to our above mentioned account directly and we shall not hold Oil India Limited responsible if the amount due from Oil India Limited is remitted to wrong account due to incorrect details furnished by us.

……
Office Seal **Signature of Vendor**

Counter Signed by Banker:
Seal of Bank:

Enclosure: Self attested photocopies of the following documents-

1) **PAN Card**
2) **VAT Registration Certificate**
3) **Service Tax Registration**
4) **CST Registration**
5) **Provident Registration Certificate**
6) **Cancelled cheque of the bank account mentioned above (in original).**
7) **Bank Statement not older than 15 days on the date of submission.**