Annexure-I

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

INVITATION FOR BID
LOCAL COMPETITIVE BID

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

Tender No	Bid Closing/ Opening Date	Item & Qty
SDI1868P17 DT: 26.07.2016 (SINGLE STAGE COMPOSITE BID SYSTEM)	**22.09.2016**	**LT PANEL – 05 NOS**
SDI1867P17 DT: 26.07.2016 (SINGLE STAGE COMPOSITE BID SYSTEM)	**22.09.2016**	**3 PHASE RELAY TESTING KIT-01 NO**
SDI1983P17 DT: 03.08.2016 (SINGLE STAGE COMPOSITE BID SYSTEM)	**22.09.2016**	**HIGH MAST – 05 NOS**
SDI2082P17 DT: 06.08.2016 (SINGLE STAGE TWO BID SYSTEM)	**22.09.2016**	**AUTOMATED BIOCHEMISTRY ANALYZER-01 NO**
SSI1898P17 DT: 27.07.2016 (SINGLE STAGE COMPOSITE BID SYSTEM)	**22.09.2016**	**HYDRATED LIME-240 MT**
SDI1914P17 DT: 28.07.2016 (SINGLE STAGE COMPOSITE BID SYSTEM)	**22.09.2016**	**MULTIFUNCTIONAL PRINTING SYSTEM –QTY = 01 NO**
SDI2107P17 DT:08.08.2016 (SINGLE STAGE COMPOSITE BID SYSTEM)	**22.09.2016**	**RACK – HEAVY DUTY-1 NO**

Tender fee (Non-refundable): Rs 1,000.00; Bid Closing/Opening Time: **(11 Hrs.) IST/(14 Hrs.) IST**; Period of sale of documents **till One week prior to bid closing date**.. The complete bid documents and details for purchasing bid documents, participation in E-tenders are available on OIL's e-procurement portal https://etender.srm.oilindia.in/irj/portal as well as OIL's website www.oil-india.com.

NOTE: All addenda, Corrigenda, time extension etc. to the tenders will be hosted on above website and e- portal only and no separate notification shall be issued in the press. Bidders should regularly visit above website and e-portal to keep themselves updated.

OIL INDIA LIMITED
(A Government of India Enterprises)
PO : Duliajan – 786602
Assam (India)
TELEPHONE NO: (91-374) 2808719
FAX NO: (91-374) 2800533
Email: ranjanbarman@oilindia.in ; erp_mm@oilindia.in

FORWARDING LETTER

Tender No. : **SDI1867P17 DT; 26.07.2016**

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 3 PHASE RELAY TESTING KIT - QTY = 01 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 = 0374-2807171 , 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 – 1**.

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 RFX Response.

Special Notes:

1.0 Technical and Financial Criteria:

In addition to the general BRC/BEC, following Technical and Financial criteria shall be considered as on the original Bid Closing Date. **(Documentary evidence to be provided along with the bid in Technical RFx -> External Area - > Tender Documents failing which the offer shall be rejected)**.

Criteria	Complied / Not Complied. Documentary evidence submitted / not submitted
a) Bidder should have experience of successfully executing atleast 1 (one) similar order for Three Phase Numerical Secondary Injection Relay Testing Set for Rs. 16.70 lakhs in preceding 5 (five) years. Similar work means supply, commissioning and training of 3-phase relay testing kit.	
b) Annual financial turnover of the firm in any of the preceding 3 financial years should not be less than Rs. 16.70 lakhs.	
c) Net Worth of the firm should be Positive for preceding financial / Accounting year.	

Note -For (a): Documentary evidence in respect of the above should be submitted in the form of copies of relevant Purchase Orders along with copies of any of the documents in respect of satisfactory execution of each of those Purchase Orders, such as – (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 each of the purchase orders cited above.

Note -For (b) & (c): 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'.

Note: 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-II.

OR

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

2.0 Vendors having OIL's User ID & password may 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).

Alternatively application showing full address/email address with Tender Fee (Non-refundable) of Rs. 1,000.00 in the form of crossed "Payee Account only "Bank Draft/Bankers' Cheque drawn by Bank and valid for 90 days from the date of issue of the same or in the form of Indian Postal Orders payable to the OIL is to be sent to DGM-Materials, Oil India Limited, P.O. Duliajan, Assam-786602. Application shall be accepted only upto one week prior to the Bid closing date (or as amended in e-portal). The envelope containing the application for participation should clearly indicate "REQUEST FOR ISSUE OF USER ID AND PASSWORD FOR E TENDER NO …" for easy identification and timely issue of user ID and password. On receipt of requisite tender fee, USER_ID and initial PASSWORD will be communicated to the bidder (through e-mail) and will be allowed to participate in the tender through OIL's e- Procurement 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).

3.0 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.

3.1 Please ensure that Technical Bid / all technical related documents related to the tender are uploaded in the Technical RFx Response-> User - > Technical Bid only.

4.0 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.

5.0 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.

6.0 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.

7.0 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.

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

9.0 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.

10.0 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.

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

12.0 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.

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-

(R BARMAN)
SR MANAGER MATERIALS (IP)
FOR : DGM-MATERIALS

Annexure - CCC

Tender No & Date: SDI1867P17 DT; 26.07.2016

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): **A) TECHNICAL:** 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. **B) 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 67,000/-** in OIL's prescribed format as Bank Guarantee or a Cashier's cheque or Demand Draft 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 22.03.2017). Cashier's cheque or Demand Draft shall be valid for minimum 90 days or as per RBI's guidelines, drawn on "Oil India Limited" and payable at Duliajan, Assam** **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 failing which OIL reserves the right to cancel the order and forfeit the Bid Security. Bidders should undertake in their bids to submit Performance Security as stated above.

The Performance Security shall be in any one of the following forms :
(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.
(b) A Cashier's cheque or Demand Draft with validity of minimum 90 days or as per RBI's guidelines, drawn on "Oil India Limited" and payable at Duliajan, Assam.

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.
(e) Delivery: Material should be delivered within 6 months from the reciept of order from OIL. Testing and Training of Instrument should be within 1 month from the reciept of work clearence 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:
1. The manufactured product should be strictly as per OIL's tender specification.

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 NIT terms and conditions of NIT.

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ANNEXURE-IA

TECHNICAL SPECIFICATIONS WITH QUANTITY

Tender No & Date: SDI1867P17 DT; 26.07.2016

	Complied / Not Complied. (Remarks if any)
ITYEM NO. 10 **PROCUREMENT OF THREE PHASE NUMERICAL SECONDARY INJECTION RELAY TESTING SET. Qty = 01 NO** **SPECIFICATIONS FOR A PORTABLE THREE-PHASE RELAY TESTING EQUIPMENT.** 1) SCOPE : The specifications are for: 1.1) High accuracy, intelligent and fully automatic Numerical/Digital relay testing kits, to be used for field testing of Medium and High voltage protection Relay on lines, Transformers, Feeders etc. 1.2) And Covers inspection and test of the injection set as well as Schedule of Guaranteed Technical particulars to be filled, signed by the Manufacturer/Dealers and submitted the offer for evaluation. 1.3) Also stipulated the minimum requirements for the secondary injection set acceptable for use in the company and it shall be responsible for the manufacturer/dealer to ensure adequacy of design, good workmanship and good engineering practice in the manufacture of the test equipment for OIL. 2) STANDARDS REFERENCE: The following standards contain provisions which, through reference in this text, constitute provisions of this specification. Unless otherwise stated, the latest edition of the reference documents (including any amendment) applies: IEC 61010-1 : Safety requirements for electrical equipment for measurement, control and laboratory use. IEC 60950 : Information technology equipment-safety, General requirements. IEC 60664-1&3 :2002/IS 15382(Part 1) : Insulation coordination for equipment within low-voltage systems Part-1: principle, requirement and test. Part-3: use of coating to achieve insulation coordination of printed board assemblies. IEC 60112: 2003 IS 2824:2007 : Method for the determination of the proof and comparative tracking indices of solid insulating materials. IEC 61326 : Electrical equipment for measurement, control and laboratory use. IEC 60068 : Environmental testing-Part 2-6 : Test - Vibration (sinusoidal) Part 2-27: Shock. IEC 60529 : IP Code (Degree of protection) IEC 60320 : Application couplers for household and similar general purposes	

Part-1: General requirement.

3) TERM AND DEFINATIONS:
Purpose of this specification, the definitions given in the reference standards shall apply together with following abbreviations:
EMTP : Electromagnetic Transient Program
Mu : Merging Unit
CTI : Comparative Tracking Index
PLC : Performance Level Category.
ADC : Analogue direct current
DAC : Digital alternating Current

4) GENERAL REQUIREMENTS:
4.1) Design and Construction
4.1.1. The portable three phase relay Test unit (secondary injection set, Numerical) shall conform to IEC 60950 and IEC 60950 1 & 3, standard and the requirement of this specification.
4.1.2 The injection set shall be a light weight portable unit (Not more than 18 kg) that can perform complete testing Distance, Differential , Over current, Earth fault, Voltage and Frequency relay together with calibration of equipment as ammeter, voltmeter and transducers.
4.1.3. It shall be fully automated, intelligent and of high accuracy with no additional calibration kit/tool and shall be equipped with most recent software for easy operation, data analysis and test plan scheduling.
4.1.4. The test set shall also be microprocessor based protective relay test set. The microprocessor module shall be integrated communication processor featuring.
4.1.5. The set shall provide basic functional testing of electro-mechanical, solid state and microprocessor-based, generator transmission and distribution relays.
4.1.6. It shall be capable of being upgraded in hardware instrumentation-features /options and software, which provides for customization to meet various field and laboratory application.
4.1.7. The system shall be form to provide full testing capability; voltage and current sources sensing, breaker simulation, logic output and logic input for both single and three phase relaying.
4.1.8. All amplifiers shall be direct coupled and all power rating to test high burden ground, directional ground and differential E/M relays as well as full panel of relays.
4.1.9. In order to achieve maximum power to test relays the test system shall be provided with multiple current and voltage ranges. Control of the parametric values shall come from individual control.
4.1.10. The system shall be optionally capable of providing a holistic approach to protection system testing with realistic three phase power system simulation including
a) Steady-state sine wave calibration using signal representing faulted- phases
b) Dynamic tests using time-synchronously controlled sine wave representing pre-fault, fault and post fault values derived from computer models.
c) Transient testing using both actual collected data from protection relay Event recording, Digital fault recorders(DFR) and computer module(e.g. E.M.T.P)
4.1.11. The above system shall not exceed one instrument when full three phase high power current are required.
4.1.12. The set shall provide variable voltage and current, precise phase angle control, wide frequency range, integral digital timer and battery simulator. The set shall provide a three phase wye connection voltage and three phases wye connected current simultaneously and two three phase wye current sources simultaneously.
4.1.13. It shall incorporate digital readouts of each applied source quantity. The display shall indicate magnitude; phase angle and frequency of applied/ source quantities simultaneously.

The set shall incorporate PC controls for varying the source output parameter, when the manual mode. The set shall accommodate a PC based automated testing program.
4.1.14. The set shall be capable of testing all types of impedance relay, phase comparison relay, directional over current relays, normal over current relays, under voltage relays, differential relays, high impedance bus difference relays, over and under frequency relay and voltage or current negative sequence filter networks.
4.1.15. The set shall be modular in design, capable of providing a single three-phase voltage and current test system, as well as three single-phase voltage and current test sets.

4.2. OPERATION:
4.2.1) The portable injection test set shall be laptop controlled manufactured to meet IEC 60950 requirements.
4.2.2) The accuracy of the test results shall not be dependent on the quality of the input signal.
The injection set shall be capable of generating its own test signal. A minimum of 6(six) AC current outputs and 6(six)/4(four)AC voltage output are required.
4.2.3). The injection set shall have a minimum of four(4) binary freely programmable out that can handle up to 300 volts DC, 8A.
4.2.4) It shall have a minimum of two(2) analogue DC inputs that can handle up to ± 2mA, ±10 VDC, and an auxiliary DC supply of up to 300 VDC.
4.2.5) It shall have automatic in built suppression system for Electrostatic & Electromagnetic interferences in a substation as per IEC 60326 class A requirements. The equipment shall also have automatic test procedures which are easy and simple to follow and use.
4.2.6) The test set shall have an illuminated (red colour) power supply on/off switch; the test set shall also have a provision for combined generator A.C output test signals and a test cable with enough cores to carry all the A.C quantities from test set to device being tested. This cable should be able to carry maximum test set rated current and Voltages and should be at least 2 meters long.

4.3) TEST RESULTS:
4.3.1) Test preparations and analysis of results and parameters shall be prepared off-line and tests executed automatically.
4.3.2) The equipment shall generate the test reports automatically, and possibility of exporting them to MS WORD or EXCEL for detailed analysis should be available.
4.3.3) The tester shall be equipped with a standard data communication interface for connection to remote data processing laptop.
4.3.4) The injection test shall be capable of data uploading and downloading to laptop through RS 232 or USB port and/or Ethernet.

5 TESTING CAPABILITES:
5.1)The test set shall be capable of automatically carrying out the following pre-commissioning field tests:
a) Advanced Differential Relay and scheme testing, Bias slope characteristic plotting and timing.
b) Advanced Over-current and Earth fault Relay and Scheme testing, characteristic plotting, pickup and timing for various line angles and binary input/output signals monitoring in an automated sequence.
c) Advanced Trans play for trouble shooting faults records,
Relay evaluation with transient files, End-to End testing and generating test reports.

6. Operation features:
6.1 Monitoring circuit:The set shall incorporate monitoring circuitry capable of giving and

audible and visual indication of contact opening and closure. The monitoring circuit properties shall be as follows:
(i) Senses dry contact opening and closing.
(ii) Senses application of AC or DC voltage
(iii) Response Time: 0.1 millisecond maximum.
(iv) Dry contact Mode source: At least two inputs capable of 12V/20mA
(v) At least one input shall be monitor, input status change of less than 180 u Sec.
(vi) Extensible to support up to 16 inputs.

7. Contact outputs:
7.1)The set shall provide eight user selectable dry contact outputs with the following properties;
(i) Input Voltage: 240 AC/DC.
(ii) Switching Current: 0.5 Amps make/break and/or up to 4 outputs capable of 8.0Amps make/break.
(iii) Response time: 0.1 millisecond maximum pick up and drop out for 0.5 Amps output with 2.5ms operating time for 8.0A make/break outputs.
(iv) The set shall either comprise eight (8) 0.5A outputs or
four (4) 0.5 outputs and four (4) 8.0A volts peak.
(v) Isolation: 500V peak.
(vi) Extensible to support up to 16 outputs.

8. Digital Timers:
8.1) The digital timer properties shall be:
(i) Senses dry contact closing and opening
(ii) Senses application of AC or DC voltage.
(iii) Separate start and stop gates for timer control.
(iv) Up to 24 hours of recording time
(v) Timer shall have the capability of using inputs as state change triggers to provide total control of state transitions under dynamic and transient type testing
(vi) Auto-ranging Digital Timers with 0-999.9 ms/sec/cycles range.
(vii) Accuracy of timer should be ± 0.001% of reading, ±50 µsec, with resolution of 100µsec.
(viii) Precision time protocol(PTP)IEEE:1588-2008, IEEE C37 238-2011(power profile)

9. Transducer Metering Input Measurement.
The set shall incorporate measuring inputs for transducer analogue and digital outputs. The associated software shall be capable of automated and manual testing of Voltage, Current, and Frequency, Watt, Var, Watt-hour, AC phase, Power factor, Var-hour, Volt-Ampere-hour Transducers and energy meters.

10. Analogue Input Measurement:
The set shall be capable of recording all the internal source generated signals and up to 8 additional sources in combinations of analogue and digital signals. Additional analogue input measurement can be made of voltage or current signals.
Maximum input voltage: 250 AC RMS or DC

11. Self-Diagnostic and Calibration.
The general design, use and power-up of the set shall perform an exhaustive series of self-diagnostics and calibration checks as follows:
a) At power-up
(i) Upon calibration error detection, the instrument will be in operable. This prevents

conducting a test with the instrument out of calibration.
(iii) Updated calibration of offset in the DACs.
(iv) Check calibration constants.

b) During use of the instrument, there shall be:
(i) Continuous safety current too high.
(ii) Hardware and software distortion monitoring and supervision of power amplifiers
(iii)Inverter peak current too high.
(iv) Source current exceeds 1.5 second transient rating.
(v) Source clipping (distortion) error.
(vi) Supply voltage out of range
(vii)Inverter temperature too high.

12. Ratings:
The specification requirement ratings for the voltage and current inputs are as per Table 1 and 2, Power supply and Mechanical Data as per Table 3
Table 1: Voltage output
1.1)AC Voltage,Setting range:
i.)4 phase AC (L-N) : 4x 0-300V (VL4(t)autometically calculated VL4 = VL1+VL2+VL3) or free programable)
ii)Three phase AC L-N) : 3 x 0-300V
iii) Single Phase Ac (L-L) : 1x 0-600v
1.2)DC Voltage : 4 x 0-300V
1.3) Power
i) 3-phase AC(L-N) : 3x 100VA, at 100-300V
ii) 4-phase AC (L-N) : 4x75VA at 100-300V
4x50VA at at 85-300V
iii)1-phase AC (L-N) : 1x200VA at 100V-300V

iv) 1-phase AC (L-L) : 1x275VA at 100-300V
1x250VA at 200-600V
V) DC (L-N) : 1x420W at +/-300 V
1x360W at +/-300V
1.3) Accuracy : Error < 0.015% rd3 + 0.005 % rd3 typ at 0 to 300V
Error < 0.04% rd + 0.01 %
rd3 guar at 0 to 300V
1.4)Distortion (THD + N) : 0.015 % typ, < 0.05 % guar

1.5) Range : 150V / 300V
1.6) Resolation : 5 mv / 10 mv in range 150V / 300V
1.7) Connection : 4mm (0.16 in)banana socket /combination socket(1,2,3, N)
1.8) Generator
i) Range of sine signal
Frequency : 10 to 1000Hz
ii) Range of Harmonics/
interharmonics :10 to 3000Hz
iii) Range of transient signals : DC 3.1 KHz
iv) Accuracy / drift : +/- 0.5 ppm/+/-1ppm
v) Resolution : < 5 uHz

vi) Phase angle range : -360 degree + 360 degree.
a) Resolution : 0.001degree
b) Error at 50/60Hz : < 0.005 degree, typ, <0.02 degree guar
1.7) Bandwidth (-3dB) : 3.1kHz
1.8)Simulated power
a) Accuracy : Error<0.05%rd typ.<0.1%rd guar
1.9)S P calibrration of
temperature drift : <0.001%/degree C typ. <0.005% degree C guar
Table 2: Current output
2.1)AC Current, Setting range:
i)6 phase AC (L-N) : 6x0....12.5A
ii)3 phase AC (L-N) : 3x0....25A (group A II B)
iii)Single phase AC(3L-N) : 1x0....75A (group A II B)2x0...37.5A
2.2)DC Current
i)DC (3LxN) :1x0 35A (group A IIB)2x0...17.5A
2.3)Power
i) 6-phase AC (L-N) : 6x80 VA typ.at8.5A, 6x 70VA guar at 7.5A

ii) 3-phase AC (L-N) :3x160VA typat 17 A (group A II B)
3x140 VA guar at 15A (group A II B)

iii) Single phase AC (3L-N) :1x 480VA typ at 51 A (group A II B)2x240VA at 25.5A :1x420VA guar at 45A (group A II B)2x210VA at 22.5A
vi)Single phase AC (L-L) :1x 320VA typ.at 8.5A (group A II B)
2x 160VAat 8.5A
1 x 280VA guar at 15A(group A II B)
2x 140VA at 7.5A
vii) Single phase AC(L-L-L-L): 1x320 VA typ.at 8.5A
(40 VRMS group A and B in series)
1x280VA guar at 7.5A
(40 VRMS group A and B in series)
viii) DC(3L-N) :1x480W typ.at +/-35A (group A II B)2x240Wat +/-17.5A
1x470W guar.at +/-35A(group A II B)2x 235W at 17.5A

2.4) Accuracy : Error <0.015% rd +0.01%rg guar at 0...12.5A
: error<0.04% rd +0.01% guar at 0....12.5A

2.5)Distortion (THD+N) : <0.025 % typ<0.07% guar
2.6)Range : 1.25A/12.5A (group A,B)or2.5A/25A (group A ll B)
2.7)Resolution : 50uA/100uA/500uA/1mA
(For respective range)

2.8)Max.complience voltage
(L-N/L-L) : 15Vpk/60Vpk
Connection : 4mm (0.16 in)banana socket/combination socket (group A only)
Table 3:
3.1)Power supply and Mechanical Data:

1) POWER SUPPLY:
i)Single-phase, nominal : 220V AC…….250 V AC, 16A
ii)Single-phase permissible : 215 V AC…..264 V AC (L-N or L-L)
iii)Frequency, nominal :50HZ
iv)Power consumption :<3500VA(<700VA for short time <10sec)
v) Connection :C22 conforming to IEC 60320
3.2) Environmental conditions
i)Operating temperature :-10…+50°C (+14…..+131 ° F)
ii)Storage temperature :-20…+70 °C (-4…..+158 ° F)
iii)Humidity range
Rel. humidity :5…..95%, non - condensing
iv)Shock (operating) :15g/11 s half sine as per IEC 60068-2-27
v)Vibration (operating) :Frequency range from 10 Hz to 150Hz,continuous acceleration(20 m/s2),10cycles per axis as per IEC 60068-2-6
3.3) EMC immunity
Performance criteria of
the equipment :IEC 61326-1 Class A

3.4) Safety
i)Rated Impulse Voltage
for equipment -1.2/50µs : 6000 V as per IEC 61010-1
ii)Over voltage category :Class IV as per IEC 61010-1
iii)Pollution category :Class 2 as per IEC 61010-1
iv)Insulation material
group :Group II- 400#CTI<600(PLC=1) as per IEC60112
v)Minimum clearances for
equipment to withstand
steady state voltage,
temporary over-voltage
and to avoid partial
discharge :5.5 mm as per IEC 60664-1

vi)Creepage distance for
equipment subject to
long term stresses : 1.8 mm as per IEC 60664-1

vii)Minimum acceptable
creepage distances on
printed circuit boards : 1.0 mm as per IEC 60664-1

viii)Maximum recurring peak
voltage related to
creepage distance on
printed wiring boards : 913V as per IEC 60664-1
ix) Width of grooves by
pollution degree on
x)printed circuit boards :1.0mm as per IEC 60664-1
xi)Partial discharge
requirements :As per IEC 60664-1 Annex C

xii)Solid insulation design :Shall withstand short term and long term stresses as per IEC 60664-1 clause 3.3 *If the internal emission source(s) is operating at frequency below 9 KHz then measurements need only to be performed up to 230 MHz 13. Accessories (To be supplied with the equipment) 13.1 Laptop The laptop shall be designed and manufactured as per the requirements of IEC 60950 with minimum requirements as per Table The supplier shall be required to declare in Annex A offered Values for the laptop. Technical data for a laptop: Brand :Specify Model :Specify Year of manufacture :Specify Processor : 3rd generation,Intel® Core™ i7 processor Chipset :Compatible- Specify Motherboard :Compatible-Specify Memory(maximum) :16GB DDR3 memory 1 TB HDD storage Hard disk controller :Specify Hard disk ::Specify Shock resistant :Anti-shock mounting design to protect screen and hard disk drive from damage and data loss Keyboard :Spill Resistance keyboard Mouse :2 or 3 button with scroll wheel optical PC Mouse with pad-USB 3.0 Touch pad :Intelligent Touchpad optized for new window 8 interface witheasy scrill,zoom and roted functions Power Supply :Input -220V-250V Auto-sensing, 50Hz Battery life :6 hours or higher Optical drive :Dual layer DVD+/- RW Card slots :Secured Digital Card Reader Display :15.6 Bachlit LED HD Disply (1366x768)16:9 widescreen Integrated Web Camera :Integrated 720p HD webcam Network/Wireless :Integrated 10/100/1000Mbps Ethernet LAN, Integrated 802.11 a/b/g/n WLAN, Bluetooth Security :Booting/HDD User Password protection and Fingerprint Recognition. I/O Inputs ::Specify Operating system :MS Windows & Professional OEM version with original Media kit, & manuals (firewall enable and all security updates and patches and fixes up-to- date) or Equivalent higher version. Productivity software :Specify (Please quote the price for one unit of computer with and without Microsoft Office 2010) Anti-virus :Anti-virus software should be installed with licenses (specify) * (Please quote the price for one unit of computer with and without	

Anti-virus software)

Carrying bag :Include with the same brand of the notebook
Manufacturer Authorization and warranty :Attach Authorization letter and 3 years comprehensive on-site manufacture authorized warranty (labour & parts)

14. Cable Accessories:
The cable accessories requirements shall be as per Table 5. The bidder shall be required to declare in Annex A the additional cable accessories accompanying the equipment.

Cable accessories
a) Generator Combination cable: To carry all ac test quantities (at least 8 banana ended lead)
b) Flexible Test Leads (2.5mm^2,3m long) :At least 8 banana ended lead
c) Insulated crocodile clips (4mm^2) :At least 8 pieces
d) Flexible jumpers (2.5mm^2,3m long) :At least 4 banana ended leads
e) PC to test set Communication cable :Parallel port Ethernet and USB, or Optical Ethernet ,optical,IEC61850
f) Network communication cable : Parallel port Ethernet and USB, or Optical Ethernet, optical, IEC61850
g) Carrying Bag for accessories :Should be able to carry all the accessories, should be water proof
h) Others if anything are not mention above : specify

15. Quality Management System:
15.1. The supplier shall submit as quality assurance plan (QAP) that will be used to ensure that the portable three phase secondary injection set physical properties, tests and documentation, will fulfil the requirements stated in the contact documents, standards, specification and regulations. The QAP shall be based on include relevant parts to fulfil the requirement of ISO 9001:2008.
15.2. The manufacture's Declaration of conformity to applicable standards and copies of quality management certification including copy of valid and relevant ISO 9001:2008 certificate shall be submitted with tender for evaluation
15.3. The bidder shall indicate the delivery time of items, manufacturer's monthly & annual production capacity and experience in the production of the type and size of items being offered. A detailed list & contact addresses (including e-mail) of the manufacture's pervious customers for similar type of the portable three phase secondary injection set sold in the last five years as well as reference letters from at least four of the customers shall be submitted with the tender for evaluation.

16. TESTS AND INSPECTION:
16.1. The portable three phase relay injection set shall be inspected and tested in accordance with the requirement of IEC 61010-1,IEC 60664-1&3,IEC 61326, IEC 60112 and IEC 60529 standards. It shall be the responsibility of the supplier to perform or to have performed the

tests specified and whatever other tests he normally performs at works.

16.2. Copies of previous type tests reports issued by a third party testing laboratory that is accredited to ISO/IEC 17025 shall be submitted with the tender for the purpose of technical evaluation. The accreditation certificate to ISO/IEC 17025 for the same third party testing laboratory used shall also be submitted with the tender document (all in English language)

16.3. Copies of type test reports to be submitted with the tender (by bidder) for evaluation shall be as state below:

16.3.1. Type Tests for Equipment Performance

i) Electromagnetic compatibility (EMC)
ii) Switching Tests on the equipment
iii) Impulse overvoltage tests on the equipment clearance
iv) Dielectric voltage withstand tests on the equipment- controlled overvoltage
v) Functional tests of the equipment.

16.3.2. Type Tests for printed circuit board coating performance

i) Environmental, humidity and thermal conditioning tests
ii) Dielectric voltage withstand tests
iii)Comparative tracking index (CTI)
iv) Resistance to soldering heat
v) Flammable
vi) Coating adhesion
vii) Insulation resistance between conductor

16.4. Routine and sample test reports for the portable three phase relays test unit (secondary injection set, numerical) to be supplied shall be submitted to OIL for approval before shipment/delivery of the goods. OIL Engineers will witness tests at the factor before shipment.

16.5. On receipt of the goods OIL will perform any of the tests specified in order to verify compliance with this specification. The supplier shall replace without charge to OIL the portable three phase secondary Injection set, Which upon Examination, Test or use, fail to meet any of the requirement in the specification.

16.6. Tests to be witnessed at the factor before shipment shall be in accordance with IEC 61010-1, IEC 60664-1 &3, IEC 61326, IEC 60112 and IEC 60529 standards and this specification and shall include the following:

16.6.1. Routine Tests Equipment Performance

i) Insulation Resistance of the equipment
ii) Leakage current of the equipment
iii)Ground continuity of the equipment
iv) Ground Bond of the equipment
v) Polarization Test of the equipment
vi) Recurring peak Voltage Determination
vii)Dielectric voltage withstand Tests- Measuring clearances
viii)Functional tests of the equipment

17. MARKING AND PACKING:

17.1. The portable three phase relays injection set shall be packed in a standard rugged heavy duty robust case with cushion grip handles and rubberized gripping surface for outdoor use (protection category IP X5) in such a manner to avoid damage during transportation.

17.2. The equipment shall be portable, rugged and light weight. Its carrying case shall be shock proof, and impact resistant. Also shall be able to withstand a fall of one meter without damage to the equipment.

17.3. The housing shall be complete with a gasket to seals the lid when closed so as to protect

the instrument against water and dirt while the instrument is carried through rainstorms or other hazardous conditions. The lid shall be secured by two latches and a handle for portable. A compartment shall also provide for storage of test cables and cord.

17.4. The portable Three phase Relay secondary set shall be marked in a permanent manner with the following information in (in English language):

a) Standard to which the portable three phase relay secondary Injection Set complies

b) Name of manufacture:

c) Type of Portable Injection set (description of type, number and overall size of sections)

d) Year and month of manufacture and serial number

e) Maximum permissible measurement limits

f) The words ‘’OIL INDIA LTD" shall be engraved permanently on each portable three phase relays test unit (secondary injection set –numerical) While the other parameters shall be marked on a permanently label.

g) The overvoltage protection category and duty rating e.g. category IV-field

h) The portable three phase relays test unit (secondary injection set-numerical) shall be provided with a separate permanent label displaying advice to the user.

i) In addition, the portable three phase relay secondary injection set shall be marked with the necessary labels that conform to IEC 61010-1, clause 5.1.2 to 5.

18. DOCUENTATION AND TRAINING:

18.1. Warranty and Training

18.1.1. The portable 3 phase relays test unit (secondary injection set, numerical) shall be backed by a minimum 12- months factory warranty.

18.1.2. As, the test set is new to OIL, a training on the equipment shall be carried out by the supplier’s engineer on an OIL site.

18.1.3. After tender award, factory inspection and certification by two/one OIL; s engineers or third party shall be carried out before shipment of the Equipment.

18.1.4. Technical support and software, where applicable upgrades shall be provided free of charge to OIL for a period of not less than 36 months.

18.1.5. The bidder shall submit a clause by clause statement of compliance with the specifications together with copies of the manufacturer’s catalogues, brochures, Technical data and proven test reports clearly marked to support each clause, all in English for evaluation. The manufacturer’s type reference/designation of the item offered shall be indicated.

18.1.6. In the case of tender award, technical details for the portable 3 phase relays test unit (secondary injection set, numerical) shall be submitted to the procuring entity for approval before manufacture commences.

18.2. Documentation

18.2.1. The bidder shall submit its tender complete with technical documents required by Annex A (Guaranteed Technical Particulars) for tender evaluation. The technical document to be submitted (all in English language) for tender evaluation shall include the following:

a) Guaranteed Technical particulars signed by the manufacturer

b) A copy of the Manufacture’s catalogues brochures, drawings and technical data.

c) Sales records for the last five years and at least four customer reference letters

d) Details of manufacturing capacity and the manufacturer’s experience.

e) Copies of required type test reports by a third party testing laboratory accredited to ISO/IEC 17025;

f) Copy of accreditation certificate to ISO/IEC 17025 for the third party testing laboratory

g) Manufacturers letter of authorization, ISO 9001:2008 certificate and other technical documents required in the tender.

18.2.2. The successful bidder (supplier) shall submit the following documents/details to The OIL INDIA LTD for approval before manufacture:

a) Guaranteed Technical particulars signed by the manufacture
b) Design Drawing with details of portable three phase secondary injection set to be manufacture for OIL INDIA LTD.
c) Quality assurance plan (QAP) that will be used to ensure that the design, material; workmanship, tests, service capability, maintenance and documentation will fulfil the regulations. The QAP shall be based on and include relevant parts to fulfil the requirement of ISO 9001:2008
d) Details test program to be used during factory testing.
e) All documentation necessary for safety of the equipment as specified in IEC 61010-1 clause 5.4 shall be provided with the equipment.
18.2.3. The supplier shall submit recommendations for care, storage and routine inspection/testing procedure, all in English language, during delivery of the portable three-phase relays test unit (secondary injection set-numerical) to OIL stores.

ANNEXURE-1:
Guaranteed Technical particulars(to be fulfil and signed by the supplier and submitted together with copies of the manufacturer's catalogues, brochures, drawing, technical data, sales records and copies of test certificates for tender evaluation)

Tender no……..Bidder's Name & Address……
Description Bidder's offer
1 Name of the manufacture and country of origin specify
Type of Reference Number or Model Number specify
2 Applicable standard :specify
3 Term and Definitions: Specify

4 Requirements:
4.1 Design and Construction:
4.2 Operation:
4.3 Test Results:
5 Testing Capability:
i) Relay testing
ii) Circuit Breaker Testing
iii) Current Transformer Testing
iv) Recloser and sectionaliser Testing
v) Switchgear Testing

Power supply and Mechanical Data as per Table 3
Single- phase, nominal 220V AC…. 250 V AC, 16 A: Specify
Frequency, nominal 50Hz: Specify

Power consumption <3500VA (<700VA for short time< 10sec) : Specify

Connection socket C22 conforming to IEC 60320 Specify
Operating temperature -10…+55 °C (+14….+131 °F) Specify
Storage temperature -20…+70 °C (-4….+158 °F) :Specify

Humidity range- Rel. humidity 5….95%, non- condensing Specify
Shock (operating) 15g/11s half sine as per IEC 60068-2-27 : Specify

Vibration (operation) Frequency range from 10Hz to 150Hz, continuous acceleration 2 g (20 m/s^2),10 cycles per IEC 60068-2-6 : Specify

Performance criteria for equipment IEC 61326-1 Class A : Specify
Rated Impulse Voltage for equipment- 1.2/5 µs 6000 V as per IEC 60664-1, table :Specify

Overvoltage Class IV as per IEC 61010-1: Specify
Pollution category Class 2 as per IEC 61010-1: Specify
Insulation material group Group II-400 #CTI<600(PLC=1)as per : Specify

Minimum clearances for equipment to withstand steady state voltage, temporary over-voltages, and to avoid partial discharge 5.5 mm as per IEC 60664-1 : Specify

Creepage distance for equipment subject to long term stresses, 1.8 mm as per IEC 60664-1 : Specify

Minimum acceptable creepage distances on printed circuit boards 1.0 mm as per IEC 60664-1 : Specify

Maximum recurring peak voltage related to creepage distance on printed wiring boards 913V as per IEC 60664-1 : Specify

Width of grooves by pollution degree on printed circuit boards 1.0mm as per IEC 60664-1 : Specify

Partial discharge requirements As per IEC 60664-1 Annex C : Specify

Solid insulation design Shall withstand short term and long term stresses as per IEC 60664-1 clause 3.3 : Specify

13 Accessories:

13.1 Laptop:

* Brand Specify : Specify
* Model Specify : Specify
* Year of manufacture :Specify
*Processor Intel® Core™ i7-920 processor :Specify
* Clock speed 2.2GHz or Higher :Specify
*Chipset Compatible- Specify :Specify

*Motherboard Compatible -Specify :Specify *Memory(maximum) 2GB DDR3,1333MHz (upgradable up to 6 GB) :Specify *Cache memory 3MB L2 or Higher :Specify *Graphics 256MB Dedicated DDR3 Memory :Specify *Hard disk controller Serial ATA :Specify *Hard disk 500GB Or higher 5400RPM SATA Hard disk : Specify *Shock resistant Anti-shock mounting design to protect screen and hard disk drive from damage and data loss :Specify *Keyboard Spill resistant keyboard :Specify *Mouse 2 or 3 button with scroll wheel optical PC Mouse with pad- USB 3.0 :Specify *Touch pad Intelligent Touch with configurable vertical and horizontal scroll functions :Specify Power Supply Input -220V-250V Auto-sensing, 50Hz :Specify *Battery life 4 hours or higher : Specify *Optical drive Dual layer DVD+/- RW :Specify *Card slots Secured Digital Card Reader :Specify *Display and resolution :Specify	

*Integrated Web Camera 2 Mega Pixels or higher :Specify *Network/Wireless Integrated 10/100/ 1000Mbps Ethernet LAN, Integrated 802 .11 a/b/g/n WLAN, Bluetooth :Specify *Security Booting/HDD User Password protection and Fingerprint Recognition. :Specify *I/O Inputs Minimum 3x USB 3.0 Hi-Speed, 1x RJ45,1VGA :Specify * Operating system : Specify * OEM version with original Media kit, & manuals (firewall * enable and all security updates and patches and fixes up-to- date) support is required: Specify * Productivity software Latest version of open office and * Genuine Microsoft Office standard: * OEM, full or suitable licensing scheme: specify * The price for one unit of computer with and without Microsoft Office 201X : Specify * Anti-virus software should be installed with licenses :(specify) *Please quote the price for one unit of computer with and without Anti-virus software : Specify * Carrying bag Include with the same brand of the notebook : Specify * Manufacturer Authorization Attach Authorization letter and 3 years comprehensive on-site manufacture authorized : Specify * Warranty (labour & parts) : Specify 14 Other Accessories: Generator Combination cable To carry all ac test quantities: i)(at least 8 banana ended lead) :Specify ii) Flexible Test Leads (2.5mm²,3m long) At least 8 banana ended lead : Specify iii)Insulated crocodile clips (4mm²) At least 8 pieces Specify Flexible jumpers (2.5mm²,3m long) At least 4 banana ended leads : Specify iv) PC to test set Communication cable Parallel port Ethernet and USB, or Optical Ethernet ,optical, IEC61850 : Specify v) Carrying Bag for accessories Should be able to carry all the accessories, should be water proof. : Specify vi) Other if any specify : Specify 15. Quality Management Systems:Specify 16. Tests and Inspection : Specify 17. Marking and packing packing:Specify 17.1 Marking :Specify 18. Documentation, Warranty and Training:Specify	

18.1 Warranty and Training: Specify
18.2 Documentation
18.1 Manufacturer's Guarantee and Warranty
19 List of catalogues, brochures, technical data and drawing submitted to support the offer.
20 List customer sales records submitted to support the offer.
21 List Test certificates submitted with tender
22 List test & calibration reports to be submitted to KPLC for approval before shipment
23 Statement of compliance to specification (indicate deviations if any & supporting documents)

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SPECIFICATIONS FOR A PORTABLE THREE-PHASE RELAY TESTING EQUIPMENT.

1) SCOPE :

The specifications are for:
1.1) High accuracy, intelligent and fully automatic Numerical/Digital relay testing kits, to be used for field testing of Medium and High voltage protection Relay on lines, Transformers, Feeders etc.
1.2) And Covers inspection and test of the injection set as well as Schedule of Guaranteed Technical particulars to be filled, signed by the Manufacturer/Dealers and submitted the offer for evaluation.
1.3) Also stipulated the minimum requirements for the secondary injection set acceptable for use in the company and it shall be responsible for the manufacturer/dealer to ensure adequacy of design, good workmanship and good engineering practice in the manufacture of the test equipment for OIL.

2) STANDARDS REFERENCE

The following standards contain provisions which, through reference in this text, constitute provisions of this specification. Unless otherwise stated, the latest edition of the reference documents (including any amendment) applies:

IEC 61010-1 : Safety requirements for electrical equipment for measurement, control and laboratory use.
IEC 60950 : Information technology equipment-safety, General requirements.
IEC 60664-1&3
:2002/IS
15382(Part 1) : Insulation coordination for equipment within low-voltage systems Part-1: principle, requirement and test. Part-3: use of coating to achieve insulation coordination of printed board assemblies.
IEC 60112: 2003
IS 2824:2007 : Method for the determination of the proof and comparative tracking indices of solid insulating materials.
IEC 61326 : Electrical equipment for measurement, control and laboratory use.
IEC 60068 : Environmental testing-Part 2-6 : Test - Vibration (sinusoidal) Part 2-27: Shock.

IEC 60529 : IP Code (Degree of protection)

IEC 60320 : Application couplers for household and similar general purposes Part-1: General requirement.

3) TERM AND DEFINATIONS

Purpose of this specification, the definitions given in the reference standards shall apply together with following abbreviations:

EMTP : Electromagnetic Transient Program
Mu : Merging Unit
CTI : Comparative Tracking Index
PLC : Performance Level Category.
ADC : Analogue direct current
DAC : Digital alternating Current

4) GENERAL REQUIREMENTS

4.1) Design and Construction

4.1.1. The portable three phase relay Test unit (secondary injection set, Numerical) shall conform to IEC 60950 and IEC 60950 1 & 3, standard and the requirement of this specification.

4.1.2 The injection set shall be a light weight portable unit (Not more than 18 kg) that can perform complete testing Distance, Differential , Over current, Earth fault, Voltage and Frequency relay together with calibration of equipment as ammeter, voltmeter and transducers.

4.1.3. It shall be fully automated, intelligent and of high accuracy with no additional calibration kit/tool and shall be equipped with most recent software for easy operation, data analysis and test plan scheduling.

4.1.4. The test set shall also be microprocessor based protective relay test set. The microprocessor module shall be integrated communication processor featuring.

4.1.5. The set shall provide basic functional testing of electro-mechanical, solid state and microprocessor-based, generator transmission and distribution relays.

4.1.6. It shall be capable of being upgraded in hardware instrumentation-features /options and software, which provides for customization to meet various field and laboratory application.

4.1.7. The system shall be form to provide full testing capability; voltage and current sources sensing, breaker simulation, logic output and logic input for both single and three phase relaying.

4.1.8. All amplifiers shall be direct coupled and all power rating to test high burden ground, directional ground and differential E/M relays as well as full panel of relays.

4.1.9. In order to achieve maximum power to test relays the test system shall be provided with

multiple current and voltage ranges. Control of the parametric values shall come from individual control.

4.1.10. The system shall be optionally capable of providing a holistic approach to protection system testing with realistic three phase power system simulation including

a) Steady-state sine wave calibration using signal representing faulted- phases
b) Dynamic tests using time-synchronously controlled sine wave representing pre-fault, fault and post fault values derived from computer models.
c) Transient testing using both actual collected data from protection relay Event recording, Digital fault recorders(DFR) and computer module(e.g. E.M.T.P)

4.1.11. The above system shall not exceed one instrument when full three phase high power current are required.

4.1.12. The set shall provide variable voltage and current, precise phase angle control, wide frequency range, integral digital timer and battery simulator. The set shall provide a three phase wye connection voltage and three phases wye connected current simultaneously and two three phase wye current sources simultaneously.

4.1.13. It shall incorporate digital readouts of each applied source quantity. The display shall indicate magnitude; phase angle and frequency of applied/ source quantities simultaneously. The set shall incorporate PC controls for varying the source output parameter, when the manual mode. The set shall accommodate a PC based automated testing program.

4.1.14. The set shall be capable of testing all types of impedance relay, phase comparison relay, directional over current relays, normal over current relays, under voltage relays, differential relays, high impedance bus difference relays, over and under frequency relay and voltage or current negative sequence filter networks.

4.1.15. The set shall be modular in design, capable of providing a single three-phase voltage and current test system, as well as three single-phase voltage and current test sets.

4.2. OPERATION

4.2.1) The portable injection test set shall be laptop controlled manufactured to meet IEC 60950 requirements.

4.2.2) The accuracy of the test results shall not be dependent on the quality of the input signal. The injection set shall be capable of generating its own test signal. A minimum of 6(six) AC current outputs and 6(six)/4(four)AC voltage output are required.

4.2.3). The injection set shall have a minimum of four(4) binary freely programmable out that can handle up to 300 volts DC, 8A.

4.2.4) It shall have a minimum of two(2) analogue DC inputs that can handle up to ± 2mA, ±10 VDC, and an auxiliary DC supply of up to 300 VDC

4.2.5) It shall have automatic in built suppression system for Electrostatic & Electromagnetic interferences in a substation as per IEC 60326 class A requirements. The equipment shall also have automatic test procedures which are easy and simple to follow and use.

4.2.6) The test set shall have an illuminated (red colour) power supply on/off switch; the test set shall also have a provision for combined generator A.C output test signals and a test cable with enough cores to carry all the A.C quantities from test set to device being tested. This cable should be able to carry maximum test set rated current and Voltages and should be at least 2 meters long.

4.3) TEST RESULTS:

4.3.1) Test preparations and analysis of results and parameters shall be prepared off-line and tests executed automatically.

4.3.2) The equipment shall generate the test reports automatically, and possibility of exporting them to MS WORD or EXCEL for detailed analysis should be available.

4.3.3) The tester shall be equipped with a standard data communication interface for connection to remote data processing laptop.

4.3.4) The injection test shall be capable of data uploading and downloading to laptop through RS 232 or USB port and/or Ethernet.

5 TESTING CAPABILITES:

5.1)The test set shall be capable of automatically carrying out the following pre-commissioning field tests:

a) Advanced Differential Relay and scheme testing, Bias slope characteristic plotting and timing.
b) Advanced Over-current and Earth fault Relay and Scheme testing, characteristic plotting, pickup and timing for various line angles and binary input/output signals monitoring in an automated sequence.
c) Advanced Trans play for trouble shooting faults records,
Relay evaluation with transient files, End-to End testing and generating test reports.

6. Operation features:

6.1 Monitoring circuit:The set shall incorporate monitoring circuitry capable of giving and audible and visual indication of contact opening and closure. The monitoring circuit properties shall be as follows:

(i) Senses dry contact opening and closing.
(ii) Senses application of AC or DC voltage
(iii) Response Time: 0.1 millisecond maximum.
(iv) Dry contact Mode source: At least two inputs capable of 12V/20mA
(v) At least one input shall be monitor, input status change of less than 180 u Sec.
(vi) Extensible to support up to 16 inputs.

7. Contact outputs:

7.1)The set shall provide eight user selectable dry contact outputs with the following properties;

(i) Input Voltage: 240 AC/DC.

(ii) Switching Current: 0.5 Amps make/break and/or up to 4 outputs capable of 8.0Amps make/break.

(iii) Response time: 0.1 millisecond maximum pick up and drop out for 0.5 Amps output with 2.5ms operating time for 8.0A make/break outputs.

(iv) The set shall either comprise eight (8) 0.5A outputs or four (4) 0.5 outputs and four (4) 8.0A volts peak.

(v) Isolation: 500V peak.

(vi) Extensible to support up to 16 outputs.

8. Digital Timers:

8.1) The digital timer properties shall be:

(i) Senses dry contact closing and opening

(ii) Senses application of AC or DC voltage.

(iii) Separate start and stop gates for timer control.

(iv) Up to 24 hours of recording time

(v) Timer shall have the capability of using inputs as state change triggers to provide total control of state transitions under dynamic and transient type testing

(vi) Auto-ranging Digital Timers with 0-999.9 ms/sec/cycles range.

(vii) Accuracy of timer should be ± 0.001% of reading, ±50 µsec, with resolution of 100µsec.

(viii) Precision time protocol(PTP)IEEE:1588-2008, IEEE C37 238-2011(power profile)

9. Transducer Metering Input Measurement.

The set shall incorporate measuring inputs for transducer analogue and digital outputs. The associated software shall be capable of automated and manual testing of Voltage, Current, and Frequency, Watt, Var, Watt-hour, AC phase, Power factor, Var-hour, Volt-Ampere-hour Transducers and energy meters.

10. Analogue Input Measurement

The set shall be capable of recording all the internal source generated signals and up to 8 additional sources in combinations of analogue and digital signals. Additional analogue input measurement can be made of voltage or current signals.
Maximum input voltage: 250 AC RMS or DC

11. Self-Diagnostic and Calibration.

The general design, use and power-up of the set shall perform an exhaustive series of self-diagnostics and calibration checks as follows:
a) At power-up

(i) Upon calibration error detection, the instrument will be in operable. This prevents conducting a test with the instrument out of calibration.

(iii) Updated calibration of offset in the DACs.

(iv) Check calibration constants.

b) During use of the instrument, there shall be:

(i) Continuous safety current too high.

(ii) Hardware and software distortion monitoring and supervision of power amplifiers

(iii)Inverter peak current too high.

(iv) Source current exceeds 1.5 second transient rating.

(v) Source clipping (distortion) error.

(vi) Supply voltage out of range

(vii)Inverter temperature too high.

12. Ratings

The specification requirement ratings for the voltage and current inputs are as per Table 1 and 2, Power supply and Mechanical Data as per Table 3

Table 1: Voltage output

1.1)AC Voltage,Setting range:

i.)4 phase AC (L-N) : 4x 0-300V (VL4(t)autometically calculated VL4 = VL1+VL2+VL3) or free programable)

ii)Three phase AC L-N) : 3 x 0-300V

iii) Single Phase Ac (L-L) : 1x 0-600v

1.2)DC Voltage : 4 x 0-300V

1.3) Power

i) 3-phase AC(L-N) : 3x 100VA, at 100-300V

ii) 4-phase AC (L-N) : 4x75VA at 100-300V
4x50VA at at 85-300V

iii)1-phase AC (L-N) : 1x200VA at 100V-300V

iv) 1-phase AC (L-L) : 1x275VA at 100-300V
1x250VA at 200-600V

V) DC (L-N) : 1x420W at +/-300 V
1x360W at +/-300V

1.3) Accuracy : Error < 0.015% rd3 + 0.005 % rd3 typ at 0 to 300V
Error < 0.04% rd + 0.01 %
rd3 guar at 0 to 300V

1.4)Distortion (THD + N) : 0.015 % typ, < 0.05 % guar

1.5) Range : 150V / 300V

1.6) Resolation : 5 mv / 10 mv in range 150V / 300V

1.7) Connection : 4mm (0.16 in)banana socket /combination socket(1,2,3, N)

1.8) Generator

i) Range of sine signal
Frequency : 10 to 1000Hz

ii) Range of Harmonics/
interharmonics :10 to 3000Hz

iii) Range of transient signals : DC 3.1 KHz

iv) Accuracy / drift : +/- 0.5 ppm/+/-1ppm

v) Resolution : < 5 uHz

vi) Phase angle range : -360 degree + 360 degree.

a) Resolution : 0.001degree

b) Error at 50/60Hz : < 0.005 degree, typ, <0.02 degree guar

1.7) Bandwidth (-3dB) : 3.1kHz

1.8)Simulated power

a) Accuracy : Error<0.05%rd typ.<0.1%rd guar

1.9)S P calibrration of
temperature drift : <0.001%/degree C typ. <0.005% degree C guar

Table 2: Current output

2.1)AC Current, Setting range:

i)6 phase AC (L-N) : 6x0....12.5A

ii)3 phase AC (L-N) : 3x0....25A (group A II B)

iii)Single phase AC(3L-N) : 1x0....75A (group A II B)2x0...37.5A

2.2)DC Current

i)DC (3LxN) :1x0 35A (group A IIB)2x0...17.5A

2.3)Power

i) 6-phase AC (L-N) : 6x80 VA typ.at8.5A, 6x 70VA guar at 7.5A

ii) 3-phase AC (L-N) :3x160VA typat 17 A (group A II B)
3x140 VA guar at 15A (group A II B)

iii) Single phase AC (3L-N) :1x 480VA typ at 51 A (group A II B)
2x240VA at 25.5A
1x420VA guar at 45A (group A II B)
2x210VA at 22.5A

vi)Single phase AC (L-L) :1x 320VA typ.at 8.5A (group A II B)
2x 160VAat 8.5A
1 x 280VA guar at 15A(group A II B)
2x 140VA at 7.5A

vii) Single phase AC(L-L-L-L): 1x320 VA typ.at 8.5A
(40 VRMS group A and B in series)
1x280VA guar at 7.5A
(40 VRMS group A and B in series)

viii) DC(3L-N) :1x480W typ.at +/-35A (group A II B)
2x240Wat +/-17.5A
1x470W guar.at +/-35A(group A II B)
2x 235W at 17.5A

2.4) Accuracy : Error <0.015% rd +0.01%rg guar at 0...12.5A
: error<0.04% rd +0.01% guar at 0....12.5A

2.5)Distortion (THD+N) : <0.025 % typ<0.07% guar

2.6)Range : 1.25A/12.5A (group A,B)or2.5A/25A (group A ll B)

2.7)Resolution : 50uA/100uA/500uA/1mA
(For respective range)

2.8)Max.complience voltage
(L-N/L-L) : 15Vpk/60Vpk

Connection : 4mm (0.16 in)banana socket/combination socket (group A only)
Table 3:

3.1)Power supply and Mechanical Data:

1) POWER SUPPLY:

i)Single-phase, nominal : 220V AC…….250 V AC, 16A

ii)Single-phase permissible : 215 V AC…..264 V AC (L-N or L-L)

iii)Frequency, nominal :50HZ

iv)Power consumption :<3500VA(<700VA for short time <10sec)

v) Connection :C22 conforming to IEC 60320

3.2) Environmental conditions

i)Operating temperature :-10…+50°C (+14…..+131 ° F)

ii)Storage temperature :-20…+70 °C (-4…..+158 ° F)

iii)Humidity range
Rel. humidity :5…..95%, non - condensing

iv)Shock (operating) :15g/11 s half sine as per IEC 60068-2-27

v)Vibration (operating) :Frequency range from 10 Hz to 150Hz,continuous acceleration(20 m/s2),10cycles per axis as per IEC 60068-2-6
3.3) EMC immunity
Performance criteria of
the equipment :IEC 61326-1 Class A

3.4) Safety

i)Rated Impulse Voltage
for equipment -1.2/50µs : 6000 V as per IEC 61010-1

ii)Over voltage category :Class IV as per IEC 61010-1

iii)Pollution category :Class 2 as per IEC 61010-1

iv)Insulation material
group :Group II- 400#CTI<600(PLC=1) as per IEC60112

v)Minimum clearances for
equipment to withstand
steady state voltage,
temporary over-voltage
and to avoid partial
discharge :5.5 mm as per IEC 60664-1

vi)Creepage distance for
equipment subject to
long term stresses : 1.8 mm as per IEC 60664-1

vii)Minimum acceptable
creepage distances on
printed circuit boards : 1.0 mm as per IEC 60664-1

viii)Maximum recurring peak
voltage related to
creepage distance on
printed wiring boards : 913V as per IEC 60664-1

ix) Width of grooves by
pollution degree on

x)printed circuit boards :1.0mm as per IEC 60664-1

xi)Partial discharge
requirements :As per IEC 60664-1 Annex C

xii)Solid insulation design :Shall withstand short term and long term stresses
as per IEC 60664-1 clause 3.3

*If the internal emission source(s) is operating at frequency below 9 KHz then measurements need only to be performed up to 230 MHz

13. Accessories (To be supplied with the equipment)

13.1 Laptop

The laptop shall be designed and manufactured as per the requirements of IEC 60950 with minimum requirements as per Table

The supplier shall be required to declare in Annex A offered Values for the laptop. Technical data for a laptop: Brand :Specify Model :Specify Year of manufacture :Specify Processor : 3rd generation,Intel® Core™ i7 processor Chipset :Compatible- Specify Motherboard :Compatible-Specify Memory(maximum) :16GB DDR3 memory 1 TB HDD storage Hard disk controller :Specify Hard disk ::Specify Shock resistant :Anti-shock mounting design to protect screen and hard disk drive from damage and data loss Keyboard :Spill Resistance keyboard Mouse :2 or 3 button with scroll wheel optical PC Mouse with pad-USB 3.0 Touch pad :Intelligent Touchpad optized for new window 8 interface witheasy scrill,zoom and roted functions Power Supply :Input -220V-250V Auto-sensing, 50Hz Battery life :6 hours or higher Optical drive :Dual layer DVD+/- RW Card slots :Secured Digital Card Reader Display :15.6 Bachlit LED HD Disply (1366x768)16:9 widescreen Integrated Web Camera :Integrated 720p HD webcam Network/Wireless :Integrated 10/100/1000Mbps Ethernet LAN, Integrated 802.11 a/b/g/n WLAN, Bluetooth	

Security :Booting/HDD User Password protection and Fingerprint Recognition. I/O Inputs ::Specify Operating system :MS Windows & Professional OEM version with original Media kit, & manuals (firewall enable and all security updates and patches and fixes up-to- date) or Equivalent higher version. Productivity software :Specify (Please quote the price for one unit of computer with and without Microsoft Office 2010) Anti-virus :Anti-virus software should be installed with licenses (specify) * (Please quote the price for one unit of computer with and without Anti-virus software) Carrying bag :Include with the same brand of the notebook Manufacturer Authorization and warranty :Attach Authorization letter and 3 years comprehensive on-site manufacture authorized warranty (labour & parts) 14. Cable Accessories The cable accessories requirements shall be as per Table 5. The bidder shall be required to declare in Annex A the additional cable accessories accompanying the equipment. Cable accessories a) Generator Combination cable: To carry all ac test quantities (at least 8 banana ended lead) b) Flexible Test Leads (2.5mm²,3m long) :At least 8 banana ended lead c) Insulated crocodile clips (4mm²) :At least 8 pieces d) Flexible jumpers (2.5mm²,3m long) :At least 4 banana ended leads e) PC to test set Communication cable :Parallel port Ethernet and USB, or Optical Ethernet ,optical,IEC61850 f) Network communication cable : Parallel port Ethernet and USB, or Optical Ethernet, optical, IEC61850 g) Carrying Bag for accessories :Should be able to carry all the accessories, should be water proof h) Others if anything are not mention above : specify	

15. Quality Management System.

15.1. The supplier shall submit as quality assurance plan (QAP) that will be used to ensure that the portable three phase secondary injection set physical properties, tests and documentation, will fulfil the requirements stated in the contact documents, standards, specification and regulations. The QAP shall be based on include relevant parts to fulfil the requirement of ISO 9001:2008.

15.2. The manufacture's Declaration of conformity to applicable standards and copies of quality management certification including copy of valid and relevant ISO 9001:2008 certificate shall be submitted with tender for evaluation

15.3. The bidder shall indicate the delivery time of items, manufacturer's monthly & annual production capacity and experience in the production of the type and size of items being offered. A detailed list & contact addresses (including e-mail) of the manufacture's pervious customers for similar type of the portable three phase secondary injection set sold in the last five years as well as reference letters from at least four of the customers shall be submitted with the tender for evaluation.

16. TESTS AND INSPECTION

16.1. The portable three phase relay injection set shall be inspected and tested in accordance with the requirement of IEC 61010-1,IEC 60664-1&3,IEC 61326, IEC 60112 and IEC 60529 standards. It shall be the responsibility of the supplier to perform or to have performed the tests specified and whatever other tests he normally performs at works.

16.2. Copies of previous type tests reports issued by a third party testing laboratory that is accredited to ISO/IEC 17025 shall be submitted with the tender for the purpose of technical evaluation. The accreditation certificate to ISO/IEC 17025 for the same third party testing laboratory used shall also be submitted with the tender document (all in English language)

16.3. Copies of type test reports to be submitted with the tender (by bidder) for evaluation shall be as state below:

16.3.1. Type Tests for Equipment Performance

i) Electromagnetic compatibility (EMC)

ii) Switching Tests on the equipment

iii) Impulse overvoltage tests on the equipment clearance

iv) Dielectric voltage withstand tests on the equipment- controlled overvoltage

v) Functional tests of the equipment.

16.3.2. Type Tests for printed circuit board coating performance

i) Environmental, humidity and thermal conditioning tests

ii) Dielectric voltage withstand tests

iii)Comparative tracking index (CTI)

iv) Resistance to soldering heat

v) Flammable

vi) Coating adhesion

vii) Insulation resistance between conductor

16.4. Routine and sample test reports for the portable three phase relays test unit (secondary injection set, numerical) to be supplied shall be submitted to OIL for approval before shipment/delivery of the goods. OIL Engineers will witness tests at the factor before shipment.

16.5. On receipt of the goods OIL will perform any of the tests specified in order to verify compliance with this specification. The supplier shall replace without charge to OIL the portable three phase secondary Injection set, Which upon Examination, Test or use, fail to meet any of the requirement in the specification.

16.6. Tests to be witnessed at the factor before shipment shall be in accordance with IEC 61010-1, IEC 60664-1 &3, IEC 61326, IEC 60112 and IEC 60529 standards and this specification and shall include the following:

16.6.1. Routine Tests Equipment Performance

i) Insulation Resistance of the equipment

ii) Leakage current of the equipment

iii)Ground continuity of the equipment

iv) Ground Bond of the equipment

v) Polarization Test of the equipment

vi) Recurring peak Voltage Determination

vii)Dielectric voltage withstand Tests- Measuring clearances

viii)Functional tests of the equipment

17. MARKING AND PACKING

17.1. The portable three phase relays injection set shall be packed in a standard rugged heavy duty robust case with cushion grip handles and rubberized gripping surface for outdoor use (protection category IP X5) in such a manner to avoid damage during transportation.

17.2. The equipment shall be portable, rugged and light weight. Its carrying case shall be shock

proof, and impact resistant. Also shall be able to withstand a fall of one meter without damage to the equipment.

17.3. The housing shall be complete with a gasket to seals the lid when closed so as to protect the instrument against water and dirt while the instrument is carried through rainstorms or other hazardous conditions. The lid shall be secured by two latches and a handle for portable. A compartment shall also provide for storage of test cables and cord.

17.4. The portable Three phase Relay secondary set shall be marked in a permanent manner with the following information in (in English language):

a) Standard to which the portable three phase relay secondary Injection Set complies

b) Name of manufacture:

c) Type of Portable Injection set (description of type, number and overall size of sections)

d) Year and month of manufacture and serial number

e) Maximum permissible measurement limits

f) The words ‘’OIL INDIA LTD" shall be engraved permanently on each portable three phase relays test unit (secondary injection set –numerical) While the other parameters shall be marked on a permanently label.

g) The overvoltage protection category and duty rating e.g. category IV-field

h) The portable three phase relays test unit (secondary injection set-numerical) shall be provided with a separate permanent label displaying advice to the user.

i) In addition, the portable three phase relay secondary injection set shall be marked with the necessary labels that conform to IEC 61010-1, clause 5.1.2 to 5.

18. DOCUENTATION AND TRAINING

18.1. Warranty and Training

18.1.1. The portable 3 phase relays test unit (secondary injection set, numerical) shall be backed by a minimum 12- months factory warranty.

18.1.2. As, the test set is new to OIL, so a two days training on the equipment shall be carried out by the supplier’s engineer on an OIL site. The supplier shall meet the cost of this training

18.1.3. After tender award, factory inspection and certification by two/one OIL; s engineers or third party shall be carried out before shipment of the Equipment.

18.1.4. Technical support and software, where applicable upgrades shall be provided free of charge to OIL for a period of not less than 36 months.

18.1.5. The bidder shall submit a clause by clause statement of compliance with the specifications together with copies of the manufacturer’s catalogues, brochures, Technical data

and proven test reports clearly marked to support each clause, all in English for evaluation. The manufacturer's type reference/designation of the item offered shall be indicated.

18.1.6. In the case of tender award, technical details for the portable 3 phase relays test unit (secondary injection set, numerical) shall be submitted to the procuring entity for approval before manufacture commences.

18.2. Documentation

18.2.1. The bidder shall submit its tender complete with technical documents required by Annex A (Guaranteed Technical Particulars) for tender evaluation. The technical document to be submitted (all in English language) for tender evaluation shall include the following:

a) Guaranteed Technical particulars signed by the manufacturer

b) A copy of the Manufacture's catalogues brochures, drawings and technical data.

c) Sales records for the last five years and at least four customer reference letters

d) Details of manufacturing capacity and the manufacturer's experience.

e) Copies of required type test reports by a third party testing laboratory accredited to ISO/IEC 17025;

f) Copy of accreditation certificate to ISO/IEC 17025 for the third party testing laboratory

g) Manufacturers letter of authorization, ISO 9001:2008 certificate and other technical documents required in the tender.

18.2.2. The successful bidder (supplier) shall submit the following documents/details to The OIL INDIA LTD for approval before manufacture:

a) Guaranteed Technical particulars signed by the manufacture

b) Design Drawing with details of portable three phase secondary injection set to be manufacture for OIL INDIA LTD.

c) Quality assurance plan (QAP) that will be used to ensure that the design, material; workmanship, tests, service capability, maintenance and documentation will fulfil the regulations. The QAP shall be based on and include relevant parts to fulfil the requirement of ISO 9001:2008

d) Details test program to be used during factory testing.

e) All documentation necessary for safety of the equipment as specified in IEC 61010-1 clause 5.4 shall be provided with the equipment.

18.2.3. The supplier shall submit recommendations for care, storage and routine inspection/testing procedure, all in English language, during delivery of the portable three-phase relays test unit (secondary injection set-numerical) to OIL stores.

ANNEXURE-1

Guaranteed Technical particulars(to be fulfil and signed by the supplier and submitted together with copies of the manufacturer's catalogues, brochures, drawing, technical data, sales records and copies of test certificates for tender evaluation)

Tender no……..Bidder's Name & Address……

Description Bidder's offer

1 Name of the manufacture and country of origin specify

Type of Reference Number or Model Number specify

2 Applicable standard :specify

3 Term and Definitions: Specify

4 Requirements:

4.1 Design and Construction:

4.2 Operation:

4.3 Test Results:

5 Testing Capability:

i) Relay testing
ii) Circuit Breaker Testing
iii) Current Transformer Testing
iv) Recloser and sectionaliser Testing
v) Switchgear Testing

Power supply and Mechanical Data as per Table 3

Single- phase, nominal 220V AC…. 250 V AC, 16 A: Specify

Frequency, nominal 50Hz: Specify

Power consumption <3500VA (<700VA for short time< 10sec) : Specify

Connection socket C22 conforming to IEC 60320 Specify

Operating temperature -10…+55 °C (+14….+131 °F) Specify

Storage temperature -20…+70 °C (-4….+158 °F) :Specify

Humidity range- Rel. humidity 5….95%, non- condensing Specify

Shock (operating) 15g/11s half sine as per IEC 60068-2-27 : Specify

Vibration (operation) Frequency range from 10Hz to 150Hz, continuous acceleration 2 g (20 m/s^2),10 cycles per IEC 60068-2-6 : Specify

Performance criteria for equipment IEC 61326-1 Class A : Specify

Rated Impulse Voltage for equipment- 1.2/5 µs 6000 V as per IEC 60664-1, table :Specify

Overvoltage Class IV as per IEC 61010-1: Specify
Pollution category Class 2 as per IEC 61010-1: Specify
Insulation material group Group II-400 #CTI<600(PLC=1)as per : Specify

Minimum clearances for equipment to withstand steady state voltage, temporary over-voltages, and to avoid partial discharge 5.5 mm as per IEC 60664-1 : Specify

Creepage distance for equipment subject to long term stresses, 1.8 mm as per IEC 60664-1 : Specify

Minimum acceptable creepage distances on printed circuit boards 1.0 mm as per IEC 60664-1 : Specify

Maximum recurring peak voltage related to creepage distance on printed wiring boards 913V as per IEC 60664-1 : Specify

Width of grooves by pollution degree on printed circuit boards 1.0mm as per IEC 60664-1 : Specify

Partial discharge requirements As per IEC 60664-1 Annex C : Specify

Solid insulation design Shall withstand short term and long term stresses as per IEC 60664-1 clause 3.3 : Specify

13 Accessories:

13.1 Laptop

* Brand Specify : Specify

* Model Specify : Specify

* Year of manufacture :Specify

*Processor Intel® Core™
i7-920 processor :Specify

* Clock speed 2.2GHz
or Higher :Specify

*Chipset Compatible-
Specify :Specify

*Motherboard Compatible
-Specify :Specify

*Memory(maximum) 2GB DDR3,1333MHz (upgradable up to 6 GB) :Specify *Cache memory 3MB L2 or Higher :Specify *Graphics 256MB Dedicated DDR3 Memory :Specify *Hard disk controller Serial ATA :Specify *Hard disk 500GB Or higher 5400RPM SATA Hard disk : Specify *Shock resistant Anti-shock mounting design to protect screen and hard disk drive from damage and data loss :Specify *Keyboard Spill resistant keyboard :Specify *Mouse 2 or 3 button with scroll wheel optical PC Mouse with pad- USB 3.0 :Specify *Touch pad Intelligent Touch with configurable vertical and horizontal scroll functions :Specify Power Supply Input -220V-250V Auto-sensing, 50Hz :Specify *Battery life 4 hours or higher : Specify *Optical drive Dual layer DVD+/- RW :Specify *Card slots Secured Digital Card Reader :Specify *Display and	

resolution :Specify *Integrated Web Camera 2 Mega Pixels or higher :Specify *Network/Wireless Integrated 10/100/ 1000Mbps Ethernet LAN, Integrated 802 .11 a/b/g/n WLAN, Bluetooth :Specify *Security Booting/HDD User Password protection and Fingerprint Recognition. :Specify *I/O Inputs Minimum 3x USB 3.0 Hi-Speed, 1x RJ45,1VGA :Specify * Operating system : Specify * OEM version with original Media kit, & manuals (firewall * enable and all security updates and patches and fixes up-to- date) support is required: Specify * Productivity software Latest version of open office and * Genuine Microsoft Office standard: * OEM, full or suitable licensing scheme: specify * The price for one unit of computer with and without Microsoft Office 201X : Specify * Anti-virus software should be installed with licenses :(specify) *Please quote the price for one unit of computer with and without Anti-virus software : Specify * Carrying bag Include with the same brand of the notebook : Specify * Manufacturer Authorization Attach Authorization letter and 3 years comprehensive on-site manufacture authorized : Specify * Warranty (labour & parts) : Specify 14 Other Accessories Generator Combination cable To carry all ac test quantities: i)(at least 8 banana ended lead) :Specify ii) Flexible Test Leads (2.5mm^2,3m long) At least 8 banana ended lead : Specify iii)Insulated crocodile clips (4mm^2) At least 8 pieces Specify Flexible jumpers (2.5mm^2,3m long) At least 4 banana ended leads : Specify iv) PC to test set Communication cable Parallel port Ethernet and USB, or Optical Ethernet ,optical, IEC61850 : Specify	

v) Carrying Bag for accessories Should be able to carry all the accessories, should be water proof. : Specify vi) Other if any specify : Specify 15. Quality Management Systems:Specify 16. Tests and Inspection : Specify 17. Marking and packing packing:Specify 17.1 Marking :Specify 18. Documentation, Warranty and Training:Specify 18.1 Warranty and Training: Specify 18.2 Documentation 18.1 Manufacturer's Guarantee and Warranty 19 List of catalogues, brochures, technical data and drawing submitted to support the offer. 20 List customer sales records submitted to support the offer. 21 List Test certificates submitted with tender 22 List test & calibration reports to be submitted to KPLC for approval before shipment 23 Statement of compliance to specification (indicate deviations if any & supporting documents)	
ITEM NO. 20 **TESTING AND COMMISSIONING OF INSTRUMENT AT OIL SITE. – QTY = 01 AU** 1. Bidder to commission the supplied instrument at OIL site. 2. Bidder to provide a training programe about supplied instrument at OIL site with the help of OEM representative's. 3. Any required infrastructures to carry out training program to be arranged by bidder. 4. Transportations (to & fro) and Accomodation at Duliajan during the time of commissioning and training of instrument is the scope of bidder.	

SPECIAL TERMS AND CONDITIONS:-

1). Offer shall be complete in all respect to meet the technical specifications as per NIT. The bidder shall be manufacturer of 3 phase secondary injection relay testing set or authorized dealer of 3 phase secondary injection relay testing set. In case of authorized dealer, valid dealership certificate must be submit along with bid.
2). The bidder should quote for (a) supply of 3 phase secondary injection relay testing set and (b) commission the same at OIL site and also to provide training to OIL officer about the supplied instrument.
3). The Bidder shall have experience of supply minimum 1 set of 3-phase secondary injection relay testing set of minimum value of Rs. 16,70,000 to any Central Govt/ State Govt/ PSU during last five year as on bid closing date and shall submit a documentary evidence as a proof.
4). Material should be delivered within 6 months from the reciept of order from OIL. Testing and Training of Instrument should be within 1 month from the reciept of work clearence from OIL.
5). Similar work means supply, commissioning nd training of 3-phase relay testing kit.
6). Bidder to submit manufacture test certificate and calibration certificate of the offer instrument.
7). Bidder should fill attached check list and submit alongwith the offer.

NOTE:

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

CHECK LIST

Sl. No.	NIT Clause	Comply or Not Comply with reason	Supporting documents with page no/sheet in the offer.
1	Special note no.1 under header note of NIT for submission of technical literature/etc.		
2	Special note no.2 under header note of NIT for submission of valid dealership certificate in case of dealer.		
3	Special note no.3 under header note of NIT for submission of test and calibration certificate.		
4	Note. No.2 under special terms and condition of NIT.		
5	Note. No.3 under special terms and condition of NIT.		
6	Clause no. 1.1 to 1.3 under Item description of NIT.		
	Relevant standards of offered instrument as per clause no.2 under Item Description of NIT.		
7	Clause no. 4.1.1 to 4.1.15.under item description of NIT.		
8	Clause no. 4.2.1 to 4.2.6.under item description of NIT.		
9	Clause no. 4.3.1 to 4.3 under item description of NIT for submission of test results.		
10	Clause no.12 under item description of NIT for mentioning of technical rating.		
11	Clause no.13 under item description of NIT for accessories of instrument.		
12	Clause no.16.1 to 16.6 under item description of NIT for testing and inspection.		
13	Marking is per clause no. 17 under Item Description of NIT.		
14	Submission of documents and agreeing for commissioning & training as per clause no.18 under Item Description of NIT.		

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.**