

BHARAT HEAVY ELECTRICALS LIMITED, BHOPAL

TRANSFORMER ENGINEERING DEPARTMENT

FORM NO: TRE-2003A

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ANNEXURE TO INDENT-CUM-ENQUIRY - 240694364

DESCRIPTION OF EQUIPMENT : PORTABLE PARTIAL DISCHARGE DETECTOR

WORK ORDER NO. : 61126-X-512-01

CUSTOMER : M/s PHPA-I, BHUTAN

SPECIFICATION OF PORTABLE PARTIAL DISCHARGE DETECTOR:-

1. GENERAL:-

Portable Partial Discharge Detector shall be used for monitoring the oil filled Power Transformers for partial discharges inside the transformer dielectrics using Acoustic emission method of Partial Discharge detection.

2. ESSENTIAL FEATURES:-

- 2.1 The Portable Partial Discharge Detector (PDD) should acoustically test transformer, while transformer still online.
- 2.2 The source of partial discharge is detected based upon the acoustic emission generated by discharges.
- 2.3 The PDD should be battery powered suitable to locate the fault either above or below the transformer core and shall comply with the requirement of relevant IEC and other standards.
- 2.4 For analysis and display, laptop with following configuration shall be considered:-

Screen size: 14 inch (min.)

Processor: Intel Core i3 or higher, 64bit or higher

OS: Window 8.1 professional (single language) or higher

RAM: 4 GB or higher

HDD: 500GB or higher

To be supplied along with carry bag & charger.

Supplier to quote price of laptop separately.

- 2.5 The equipment should be lightweight with rugged construction and properly packed in a case, self-test features for field calibration, simple easy to read LCD display and a rechargeable battery good for eight hours of continuous use.

- 2.6** The equipment should not require circuit or equipment outage or special preparation.

REV	DATE	ALT CKD	REV-	DATE	ALT- CKD-	REV 00	NAME	SIGN	DATE
						PREP	KUMAR GAUTAM	<i>WGA</i>	24-08-19
						CKD	K. G. KRISHNAN	<i>Cell</i>	24/8/19
DWI/TCB/TRE/010									

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- 2.7 The highly inductive environment of EHV sub-station and radio frequency signals should not influence the performance of PDD.
- 2.8 The equipment should measure a discharge acoustic emission pulse counts rate and display the value and compares it with a user selected alarm rate to detect potentially harmful partial discharges. Recommended levels of alarm settings are also furnished.
- 2.9 The equipment should use an integral pre- amplifier sensor to minimize external noise pick-up, electrically isolated by non- conducting wear face BNC connector.
- 2.10 To detect PD electrically, RFCT/HFCT shall also be provided.
- 2.11 The equipment shall also have a serial data input, output port (RS 232 port/USB), so that equipment display data can be monitored remotely and stored it in PC.
- 2.12 The offered equipment shall include all the items i.e. detector, sufficient sensors (min. 4 nos. suitable for large size 400 KV Power Transformer), RFCT/HFCT, couplets, battery charger (suitable for 240 volts, 1-ph., 50Hz. AC supply) etc. to complete the equipment in all respect for the purpose described in this specification.

3. TESTING:-

- 3.1 All applicable type tests report as per IEC and other relevant standard shall be submitted.
- 3.2 All applicable routine/acceptance tests as per IEC and other relevant standard shall be conducted.

4. TRAINING:-

The supplier shall provide training/ demonstration to our customer at **Bhutan site** on intimation by BHEL for using and maintaining the equipment for 1 man day. Supplier should quote the charges for the same, if any, in the offer separately.

5. INSPECTION & DISPATCH

- 5.1 Three sets of inspection, routine, acceptance and calibration test reports, operation and maintenance manual, descriptive catalogue/ leaflets shall be sent along with dispatch document. One set shall be supplied along with the equipment.
- 5.2 The supplier shall furnish a list of all fittings and components in the dispatch details giving description and quantity of each item (Quantity of each item shall be mentioned). All items shall be properly packed in wooden boxes so as to avoid scratches/damage in transit.

Note:- If any accessories required to fitted permanently on tank, supplier to furnish the details of the items as well as separate price for these items.

Supplier to submit compliance sheet as per annexure-A with the offer.

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ANNEXURE-A

Clause No.	Requirement	Yes/ No	Deviation, if any
1.	GENERAL		
2.	ESSENTIAL FEATURES		
3.	TESTING		
4.	TRAINING		
5.	INSPECTION & DISPATCH		