



ELECTRICAL RESEARCH AND DEVELOPMENT ASSOCIATION



TESTING OF INSTRUMENT TRANSFORMERS

Electrical Research and Development Association (ERDA) is a not for profit autonomous organization offering its services under three verticals namely Testing and Evaluation, Field Services & R&D and Expert Services to Power Utilities, Process Plants and Manufacturing Industries.

Instrument transformers find wide application in power systems for measuring and protection. They are one of the most important equipment for recording of energy and protection purpose. ERDA has been serving the instrument transformer industry by providing services for testing and calibration of current transformers and voltage transformers according to national and international standards.

TESTING AND EVALUATION

ERDA has been regularly upgrading its test facilities based on the needs of the industry. Testing facilities for type, routine, acceptance and special tests are available at ERDA, Vadodara as per following details:

- Voltage Transformers up to 220kV, 0.05 Class, as per IS: 16227, IEC: 61869 and IS: 3156
- Current Transformers up to 8000A, 0.05 Class, as per IS: 16227, IEC: 61869 and IS: 2705
- Short Circuit test on 400kV class CT up to 70kA for 1 second or 70kA for 3 seconds
- Partial Discharge measurement up to 220kV products
- Impulse test facility up to 1600kVp, 80kJ
- Capacitance and Tan δ measurement up to 245kV Instrument Transformers
- Dry/Wet Power Frequency Voltage withstand test up to 600kV
- Measurement of Radio Interference Voltage
- Ferro Resonance test on Capacitive Voltage Transformers
- Transient Response Analysis on Instrument Transformers
- Thermal Stability test on Instrument Transformers

Along with the testing facility, major available calibration facilities at ERDA, Vadodara are as below:

- Computerized calibration of Current Transformers up to 8000A rated primary current & accuracy class up to 0.05, with calibration report generation
- Computerized calibration of Voltage Transformers up to 220kV & accuracy class up to 0.05, with calibration report generation
- Calibration of Instrument Transformer test system bridges, Ratio meters, CT/PT Analyzers



CT and VT Accuracy Test Panel with Automated Report Generation Facility



120 kA Short Circuit Test Control Panel

The facilities for CT/PT testing and calibration at ERDA (West), Navi Mumbai are as follows:

- Voltage Transformers up to 33kV, 0.2 Class, as per IS: 16227, IEC: 61869 and IS: 3156
- Current Transformers up to 3200A, 0.05 Class, as per IS: 16227, IEC: 61869 and IS: 2705
- High Voltage Impulse Testing facility up to 300kVp, 15kJ

FIELD SERVICES

ERDA offers services at site including substations using mobile facility as per following details:

- Calibration of CTs up to 6300A and VTs up to 33kV
- Type and Routine Tests on CTs and PTs up to 33kV
- Calibration of EPD, CT/PT Analyzers, Ratio meters, CT/PT bridge
- Error analysis of metering system (comprising of CTs, PTs and Energy Meters)
- Future expansions are planned for accuracy testing and calibration up to 220kV CTs/PTs at customer site

R&D AND EXPERT SERVICES

As part of expert services, ERDA offers following services at site including substations using mobile facility which is as mentioned below:

- Capacitance & Tan Delta Measurement
- Partial Discharge Measurement (Through RFI & Acoustic Emission Measurement Method)



1600 kVp High Voltage Impulse Generator



Partial Discharge Measurement



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