

## **Condition assessment of Current transformers**

**Course Code: TR-B-3, Duration: 1 day**

### **Overview of the Structure and Type of CT & design parameters**

- CT accuracies as per IEC - 60044 -1 (Metering core, Protection core, PS class)
- Live & Dead Tank CTs.
- Knee Point Voltage
- Insulation Level (Power frequency withstand , Lightning and switching impulse test)
- Partial Discharge limits
- Creep age distance

### **Factory & Commissioning test of Current Transformer (Procedures as per IEC - 60044)**

- Polarity Test
- Magnetization Curve and knee point voltage Test
- Ratio and phase angle error Test
- Composite error and ISF test
- HV Power frequency withstand test and Impulse test
- Partial discharge test
- Capacitance and Power Factor Measurement

### **Condition monitoring of CT**

- Capacitance and Power Factor Measurement (C1 and C2 test and their significance)
- Thermovision Scanning
- DGA and Routine testing of Oil (Norms of DGA interpretation by IEC and CIGRE guideline)
- Reasons of CT failure

- **Maintenance schedule and their importance**
  - Nitrogen Pressure Checking
  - Checking of bellow expansion
  - Visual inspection for leakage
  
- **Residual life assessment of oil filled CT**
  - Furan, DGA, acidity & moisture of CT oil
  - PDC+FDS method for moisture measurement of paper insulation
  - DP test of paper sample from aged and failed CTs
  - Capacitance and Power factor measurement & trend analysis
  - Partial discharge test by on-line electrical method and acoustic method
  
- **Case studies- CT incipient fault detection by condition based monitoring.**
  
- **Investigation of CT failure and finding of design, manufacturing weakness.**

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