



## **PLANNED TUTORIALS FOR THE 8<sup>TH</sup> INDIADOBLE POWER FORUM**

*Thursday, 2 December 2010*  
**9:00 AM to 6:00 PM**

### **TUTORIAL 1**

#### **Measurement of Capacitance and Tangent Delta (Power factor) – Theory and practice**

Measurement of Capacitance and Power factor provides a quick check of the health of the insulation system of HV Apparatus. This tutorial elaborates the theory behind this measurement and will deal with the best practices to be adopted in the field while carrying out these measurements on different HV equipment to obtain meaningful results. Focus will also be put on the co-relation of these tests with other measurements.

### **TUTORIAL 2**

#### **Analysis of SFRA results**

Measuring Sweep Frequency Response allows assessment of mechanical integrity of a transformer. Many a times the latent damage caused during transportation or external short circuit is difficult to detect. The tutorial will introduce not only the measurement concepts under differing transformer conditions- connections open or closed, residual magnetism and with/ without oil but will also concentrate on analysis and interpretation of results obtained

### **TUTORIAL 3**

#### **Condition Assessment of Switchyard Equipment by RFI technique**

Accurate assessment of the insulation condition of Substation equipments is essential for safe and economic operation of the power system .This tutorial will cover the concept of detecting partial-discharge (PD) activity through radio-frequency (RF) measurements that gives a fast and first hand information of the health of outdoor substation equipments. The major advantage of this PD detection technique lies in its ability to detect PD sources in energized plant without the need for outages or disconnecting electrical connections.

This tutorial will introduce measurement concepts, understanding of detection and the subsequent analysis of PD from the obtained RF signals and will also discuss practical issues related to the effective discrimination of discharge phenomena from ambient RF emissions.

### **TUTORIAL 4**

#### **Moisture in Transformers**

The insulating oil serves not only as a insulating medium but also works as a cooling agent in major HV apparatus. This tutorial will ascertain the methods to evaluate the oil results to diagnose and asses the condition of the HV apparatus.