TRANSFORMER PROTECTION PROGRAM

Monday, February 10th

Doble Engineering Company Welcome & Introduction

Opening Keynote

Primer on Large Power Transformers

Transformer Design

Transformer Manufacturing

Shell-Form Design & Construction

Understanding Factory Testing Data

Transformer Specifications & Vendor Pre-Qualification

Dielectric Design & Insulating Materials Basics

Transformer Type Designs

- Autotransformers

- Generator Step-Up Transformers

- Shunt Reactors / Variable Shunt Reactors

Transformer Design & Manufacturing: Ask the Experts Panel

Tuesday, February 11th

Slippery Slopes - Journey through Transformer Differential Protections

Demonstration of Testing CTs using Vanguard CT Tester

Transformer Resistance & Turns Ratio Measurement

Sudden Pressure Relays - Concept, Construction, Application & Testing

Bucholz Relays - Concept, Construction, Application & Testing

Wednesday, February 12th

Analysis of Interesting Transformer Differential Protection Events

Determining CT Requirements for Generator and Transformer Protective Relays

Concepts & Enhancements of Transformer Protection

Transformer Field Testing

Early Warning System-Transformer Overload

Impact of Subharmonics on Power Transformers

Thursday, February 13th

Transformer Withstand Capability & Protection during External Faults

Overview of Generator Protection (Part 1)

Overview of Generator Protection (Part 2)

Generator Neutral Grounding & Associated 100% Stator Winding Protection

NERC Related Requirement for Backup Protection using Distance & 51V Relays

Overview of Motor Protection