TUTORIAL: Understanding Power Transformer Factory Test Data
Sponsored by the Transformers Committee
Sunday, September 30, 1:30 PM - 5:30 PM
Grand Ballroom

PART ONE: TRANSFORMER FACTORY TEST SPECIFICS

If you witness a factory acceptance test, write a transformer purchase specification or review historical factory test data, this is a must-see tutorial.

This afternoon tutorial will provide an in-depth description of the significance of a transformer factory test included in the typical “new transformer” test plan. We will cover all final factory tests as specified in IEEE C57.12.00-2010 and C57.12.90-2010. For each test, we will discuss definition and objective, physics behind the measurement, setup and test methodology, acceptance criteria, examples of abnormal data and recourse if data is abnormal.

Mark F. Lachman, Ph.D., P.E.
Director of Diagnostic Analyses, Doble Engineering Company
With over 30 years in the power industry, Mark Lachman experience includes development of off-line and on-line diagnostics (Doble 1988-2001) as well factory testing of power transformers (Delta Star, San Carlos, CA, 2005-2011). He returned to Doble Engineering Company in 2011 and is contributing to advancing interpretation of apparatus diagnostic data.

PART TWO: EXPERIENCE WITNESSING FACTORY TESTING

While performing factory testing, there have been cases where an assembled transformer does not meet the acceptance test requirements or defects are found and need to be addressed. Draining the oil and un-tanking a large power transformer can be costly and have a negative impact on the final delivery schedule so you want to address these issues before the oil is in place.

During a recent factory test of a rebuilt transformer, the test team reported an unusual internal problem. This case study will explain the type of tests that were applied and the rationale behind them in order to reasonably understand the source of the defect and then guide the crew in the right direction to rectify the defect in an intelligent manner.
**Barry Mirzaei, Sustainment Manager; Hydro One Networks, Inc.**

Barry Mirzaei is Sustainment Manager in Stations Sustainment department at Hydro One. He is a licensed professional engineer registered in Ontario, Canada. During past 25 years, Mr. Mirzaei has worked in transformer industry as a transformer design engineer, transformer test engineer, high voltage test laboratory manager and in electric utility sector as a technical manager focused on stations sustainment. Currently Mr. Mirzaei is the Vice Chair of the Doble Bushings, Insulators and Instrument Transformers committee and is a member of the Doble Transformer and Insulating Materials committees. He is also member of IEEE and CIGRE and has been involved with R & D projects with EPRI, University of Toronto and University of Quebec.

**Domenico E. Corsi, Principal Engineer; Doble Engineering Company**

Domenico (Dom) E. Corsi is a Transformer Engineer for Doble Power Services, concentrating on electrical power apparatus testing, condition assessment and forensics. Prior to joining Doble Engineering Company, Mr. Corsi held positions with Ohio Transformer Corporation and ABB Power T&D Company. Over the last 15 years, he has held different position from design engineering to engineering management. Mr. Corsi has received a B.E. in Electrical Engineering (Electric Power Systems) from Gannon University and a M.S. in Electric Power Engineering from Rensselaer Polytechnic Institute. He is the Chairman of the IEEE Transformer’s Committee Task Force for the Revision of C57.17. Arc Furnace Transformers, member of the IEEE, member of the IEEE Power Engineering Society and member of the IEEE Standards Association.

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