

Laboratory Seminars Overview



TOGETHER WE POWER THE WORLD

ELECTRIC APPARATUS CONDITION ASSESSMENT USING LABORATORY DIAGNOSTICS

As the premiere provider of Knowledge Services for the Power Industry, Doble Engineering is pleased to offer seminars on electric apparatus assessment using laboratory diagnostics. This interactive one or one and a half day seminar, held at various locations, combines theoretical background with practical experience and examples. Case Studies are given to illustrate the types of problems found in the field. The one and a half day seminar provides more depth and case studies on these topics.

Course Topics for Laboratory Diagnostics Seminars

- Quality of New and Service Aged Oils
- Aging Characteristics of Insulating Materials
- Sampling
- Dissolved Gases in Oil
- Furanic Compounds and Degree of Polymerization – for paper aging
- Water in Oil
- Metals in Oil
- OCB and LTC Diagnostics



Discuss Your Specific Problems

Benefit from the theories and skills learned during this seminar. Doble encourages seminar participants to bring their unique real-world problems for discussion. Send any specific problem you wish to address to us in advance to facilitate more detailed and beneficial discussions.

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What You Will Learn

1. About the quality of oils available on the market today and the tests used to determine their qualities.
2. To detect accelerated or excessive deterioration so that oils can be reconditioned, reclaimed, or replaced before causing apparatus problems.
3. What effects the aging of insulating materials and cost effective means for reducing the aging.
4. How to save time and money by obtaining samples correctly the first time. The quality of laboratory results is only as good as the sample. Avoid the common pitfalls of acquiring samples, which are not representative of the oil in the apparatus or storage tank.
5. To diagnose apparatus problems with the valuable diagnostic tool, dissolved gas-in-oil analysis.
6. To assess the condition of the cellulosic insulation and detect the presence of incipient-fault conditions.
7. To determine how to correctly analyze the moisture-in-oil results and estimate the moisture content in the paper insulation.
8. To detect contaminants and aid in locating incipient-fault conditions detected by other means.
9. To detect excessive bearing wear for oil pumped cooling systems.
10. To detect other wear metals and particulate contamination found in electric apparatus.

On-Site Seminars Ask about our on-site seminars tailored to your specific needs.

Seminar Fees

1-Day Seminar: \$395 USD per person

1½-Day Seminar: \$550 USD per person

The Fee covers the seminar materials, break refreshments, lunch on the premises (full days) and a certificate of seminar completion. We prefer Enrollment in Advance. Accepted forms of Payment are Cash, Check (payable in U.S. Dollars to Doble Engineering Company), MasterCard, Visa, or American Express.

Cancellation Policy

If you cannot attend, please notify us at least seven days before the course starts, and we will refund your fee. Cancellations received later than seven days before the course are subject to a \$50 late cancellation fee. Cancellations made after the course starts are subject to the full course fee. You may enroll a substitute at any time before the course starts.

Accommodations

See our website www.doble.com or contact us for local hotel recommendations. Please contact hotels directly to make reservations. Seminar attendees are responsible for their own lodging costs.

About the Presenters

Doble Seminars are presented by one or more of the following experienced staff members.

Paul Griffin, Vice President of Laboratory Services, Doble Engineering Company Paul received his MS Degree from the University of Rhode Island. He has been with Doble since 1979 and held the position of Laboratory Manager before becoming Vice President. Since joining Doble, Paul has published over 50 technical papers pertaining to testing of electrical insulating materials and laboratory diagnostics. He is a Fellow of ASTM and a member of Committee D-27 on Electrical Insulating Liquids and Gases. He was formerly ASTM Subcommittee Chairman on Physical Test, ASTM Section Chairman on Gases in Oil, and the Technical Advisor to the U.S. National Committee for participation in the International Electrotechnical Commission Technical Committee 10, Fluids for Electrotechnical Applications. Paul is a member of IEEE, the IEEE Insulating Fluid Subcommittee of the Transformer Committee, and the American Chemical Society. He is the U.S. Representative on CIGRE Working Group 15.01 Fluid Impregnated Insulating Systems and serves on several CIGRE Task Forces. Paul has received the ASTM Committee D-27 Charlie Johnson Award and the ASTM Award of Merit.

Lance Lewand, Laboratory Manager, Doble Engineering Company Lance received his BS Degree from St. Mary's College of Maryland. He has been with Doble since 1992 where he is the Project Manager of Materials Laboratory research and is also the Product Manager for Doble's moisture-in-oil sensor, called the DOMINO. He has also been a member of ASTM D-27 since 1989. Since joining Doble, Lance has published numerous technical papers pertaining to sampling and testing of electrical insulating materials and laboratory diagnostics. Lance was formerly Manager of Transformer Fluid Test Laboratory and PCB and Oil Field Services at MET Electrical Testing Company in Baltimore, MD for seven years. His years of field service experience in this capacity provide a unique perspective, coupling laboratory analysis and field service work.

TO REGISTER sign up on our website at www.doble.com, call 1.617.926.4900 or e-mail labservices@doble.com

Seminar Locations

The courses will be held at Doble facilities or selected locations.

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