Seminar by Joint IEEE Ottawa-Montreal Section DEIS Chapter,
IEEE Ottawa PES, IMS Chapters, and EPMG of INMS/NRC

The IEEE Ottawa Section is inviting all interested IEEE members and other engineers, technologists, and students to a seminar on dielectrics and electrical insulation.

Towards Development of Diagnostic Technique for High Voltage Polymer Insulated Power Cables using the DC Polarization/Depolarization Measurements

by
Mahmoud Abou-Dakka
National Research Council of Canada

DATE: November 05, 2009.
TIME: 10:40 p.m. Registration and Networking; 11:00 a.m. – 12:00 p.m. Seminar.
PLACE: National Research Council, 1200 Montreal Road, Ottawa, Building M-36, Kelvin Room
PARKING: No fee at the visitor's parking. Please respect restricted areas.

Abstract: Polymer insulated power cables used in the transmission and distribution of electric power are subject to degradation due to defects, contaminants moisture, etc. This can lead to unpredicted cable failure many years prior to its expected lifetime. To avoid unexpected power failures the utilities have to resort to a periodic assessment of the operating conditions of their equipment. This is done by performing diagnostic measurements, development of which is a very active field.

At NRC, by using a noiseless, very fast high voltage switch we have improved measurements of the dc polarization-depolarization currents in polymeric insulation that could be used on considerable lengths of actual high voltage power cables.

In this presentation, the general principle of the technique and its application on laboratory- aged cross-linked polyethylene and ethylene propylene rubber (EPR), will be discussed. The polarization current characteristics change in a consistent manner with aging time. The evolution of these characteristics could be thus used as a measure of the degree of insulation degradation and provide a link with the rate of cable failures.

Dr. Mahmoud Abou-Dakka: Mahmoud Abou-Dakka is Senior Research Officer at the National Research Council of Canada. He obtained his B Sc. Degree from Damascus University, Syria and his M.Sc. and Ph.D. from the "Université de Montpellier II", Montpellier, France. He joined the NRC in January, 1994. He has been involved in the development of measuring techniques for the determination of space charge distribution in solid dielectrics and in the development of diagnostic measurement techniques for power apparatus. He is a Senior Member of IEEE and a registered Professional Engineer in Ontario and Quebec.

Admission: Free. Registration required for security reasons.
To ensure a seat, please register by e-mail contacting: maboudakka@ieee.org