# PARTIAL DISCHARGE COURSE

## May 19-21, 2020 Manchester, UK

Partial discharges (PD) are small electrical sparks that occur as the stator winding insulation deteriorates. By measuring PD, one can plan when to do maintenance or when to rewind a stator.

#### **Seminar Objectives**

- to understand the basics of stator winding insulation systems and why they deteriorate
- to understand basic PD theory
- to understand how PD detection devices work
- to interpret the test data collected and relate the data to specific failure mechanisms, to enable you to plan maintenance



#### Who Should Attend?

The course is designed for engineering and maintenance personnel who either purchase, install, test, maintain and/or repair motors and/or generators. Consultants, manufacturers and repair shop personnel would also benefit from this course. The course is mainly intended for those involved with motors or generators rated 3kV and above.

### **Instructor: Dr. Howard Sedding**

Dr. Howard Sedding graduated with a BSc in electrical and electronic engineering at the University of Strathclyde and then acquired MSc and PhD degrees. Most of Dr. Sedding's career was spent working at the Research Division of Ontario Hydro, later known as Kinectrics. Howard was involved in, or responsible for, numerous projects related to the specification, testing, monitoring and maintenance of solid, liquid and gaseous electrical insulation systems in a wide range of high voltage electrical equipment. He is an active member of numerous technical committees, and has contributed to many IEEE and IEC standards concerned with electrical insulation. Specifically, he is the Chair of the Canadian committee for IEC TC112 (Evaluation and qualification of electrical insulating materials and systems), the International Secretary of IEC TC42 (High voltage and high current test techniques) and is the Canadian representative for Cigre SC A1 (rotating machines). Howard has authored and coauthored more than 150 technical papers. Currently, Howard is employed as an Insulation Engineer at Iris Power

### **AGENDA**

#### Day 1

8:30 a.m. - 4:30 p.m.

# Motor & Generator Stator Windings

- Stator Winding Design
- Coil Manufacturing Process
- Failure Mechanisms

#### Day 2

8:30 a.m. - 4:30 p.m.

#### **PD Theory**

- PD as a Symptom
- Partial Discharge or Corona
- Void Formation
- Electrical Discharges

#### **PD Detection**

- On-line and Off-line testing
- PD sensors
- Noise Cancellation

#### Day3

8:30 a.m. - noon

#### **Interpreting Test Results**

- Data Presentation
- Trend Analysis
- Polarity Predominance
- Load Effect
- Temperature Effect
- Non-classic PD pulses
- Multiple Failure Mechanisms
- PD Characteristics of Failure Mechanisms

Please refer to registration form on page 2



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To register for the seminar please send completed form with credit card information to fax 905-677-8498 or e-mail to khoward@qualitrolcorp.com.

Name:			REGISTRATION Only 15 seats available, so register now.	
Title			Registration includes lunch and breaks daily.	
Company:			A complete set of notes is also included.  PRICE DOES NOT INCLUDE HOTEL  ACCOMMODATIONS.	
Address:			Confirmation will be issued upon receipt of	
			payment.	
City, State				
Postal/Zip:	Phone:			
E-mail :			COST \$1295.00 USD	
Special Dietary needs:			Send registration to:  Karen Howard	
_	Please print e-mail address clearly		Fax: 905-677-8498 Phone: 905-364-4568 <u>khoward@qualitrolcorp.com</u>	
Payment ma	ade via:(check one box)			
	Master Card	P.O. #	LOCATION/VENUE	
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Signature:				

#### **CANCELLATION POLICY**

Cancellation received 30 days prior to seminar date will result in a \$75.00 US processing fee. Withdrawal received up to one week prior to the seminar will be subjected to a charge of \$150.00 US. There will be no refunds a week prior to the seminar. Delegate substitution is permitted.

