



QCMC 2012

Qualitrol Condition Monitoring Conference

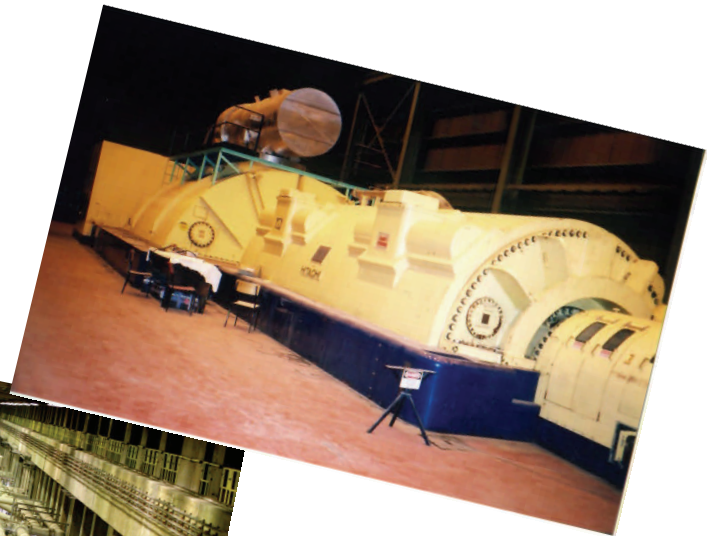
19–21 November 2012

JWMarriott Hotel

Abu Baker Al Siddique Rd, Deira, next to Hamarain Shopping Center

Dubai, United Arab Emirates

CONFERENCE SCHEDULE



QUALITROL[®]
Defining Reliability

Invitation



I want to extend a warm invitation for you to attend the annual 2012 Qualitrol Condition Monitoring Conference (QCMC) in Dubai. The QCMC will provide discussions on condition monitoring of the key electrical assets used in various transmission and generation applications: transmission grid, power transformers and rotating machines. We are pleased to host two renowned external speakers at this year's QCMC:

- ◆ Dr Arun Phadke (Benjamin Franklin 2008 award Laureate, IEEE Fellow, Distinguished Professor Emeritus at Virginia Tech, a renowned author of several books). Dr Phadke will deliver a lecture on "Wide Area Remedial Action Schemes based on Synchrophasors".
- ◆ Bill Moore (member of IEEE and CIGRE and a Fellow Member of the ASME, past chairman of the ASME Power Division, past recipient of the EPRI Innovator Award, and the "Author's Award" from Hydro Review Magazine). Mr. Moore will speak on the subject of Stator and Rotor Maintenance, Tests, and Inspections.

Over the past decade, equipment condition monitoring has become an essential tool to plan maintenance, extend the time between outages, minimize maintenance costs and maximize asset utilization. However, condition monitoring can only be effective if owners of electrical equipment have a sound understanding of the design of the equipment, know its failure processes as well as the repair options. Thus the QCMC is devoted not just to presentations on condition monitoring tools, but also to educating attendees on the practical aspects of implementing condition-based maintenance in key transmission and generation assets.

The QCMC is a technical conference, offering both in-depth half-day courses on condition monitoring methods, as well as presentations on state-of-the-art aspects of electrical equipment design, failure and repair. The information is presented in a non-commercial environment by world-class experts offering a range of points of view. The QCMC will be an excellent opportunity to network with peers in different organizations. I look forward to seeing you in Dubai.

Raj Karanam

President, Qualitrol

PRESENTERS



Dr. Arun Phadke worked in the Electric Utility industry for 13 years before joining Virginia Tech in 1982. He became the American Electric Power Professor of Electrical Engineering in 1985 and held this title until 2000 when he was recognized as a University Distinguished Professor. He became University Distinguished Professor Emeritus in 2003, and continues as a Research Faculty member of the Electrical and Computer Engineering Department of Virginia Tech. Dr. Phadke was elected a Fellow of IEEE in 1980. He was elected to the National Academy of Engineering in 1993. He was Editor in Chief of Transactions of IEEE on Power Delivery. He became the Chairman of the Power System Relaying Committee of IEEE in 1999-2000. Dr. Phadke received the Herman Halperin award of IEEE in 2000. Dr. Phadke has also been very active in CIGRE. He has been a member of the Executive Committee of the US National Committee of CIGRE, and was the Chairman of their Technical Committee. He was previously the Vice President of USNC-CIGRE and served as Secretary/Treasurer. In 1999 Dr. Phadke joined colleagues from Europe and Far East in founding the International Institute for Critical Infrastructures (CRIS). He was the first President of CRIS from 1999-2002, and currently serves on its Governing Board. Dr. Phadke received the "Doctor Honoris Causa" from Institute National Polytechnic de Grenoble (INPG) in 2006. He received the Distinguished Alumnus Award from IIT Kharagpur, India. In March 2008 Dr. Phadke received (with Stanley H. Horowitz) the Karapetoff award from the Honor Society HKN, and in April 2008 Dr. Phadke (with James S. Thorp) received the Benjamin Franklin Medal.



Bill Moore, P. E., is Director of Technical Services for National Electric Coil. Based out of Columbus, Ohio, his department provides high level technical service in the areas of product development, proposals, advanced engineering design, research and development, machine data configuration and sales and marketing support. Prior to joining NEC in 1997, Bill held utility power plant management positions with Florida Power & Light, working at three different power plants, over a ten year time span. A licensed professional engineer in Ohio and Florida, he started his 32 year power industry career as a generator design engineer with Westinghouse. He has been awarded several design related generator patents and has published and presented over 65 papers in the power generation field. He is a frequent short course lecturer on generator industry issues at major conferences, and for utilities and insurance companies around the world. Bill is a member of the IEEE, CIGRE and is a Fellow Member of the ASME. He was a past chairman of the ASME Power Division. He is a past recipient of the EPRI Innovator Award, and the "Author's Award" from Hydro Review Magazine, and also received two Best Paper Award's from IEEE. He has a Master's and Bachelor's of Science degrees from the University of Pittsburgh, and Notre Dame University, respectively, along with an M.S. in Engineering Management from the Florida Institute of Technology.

PRESENTERS



David Cole has an honors degree in Electrical and Electronics Engineering. David spend three years at the High Voltage Laboratory of BICC Power Cables to develop a method of locating partial discharge sites in drum lengths of polymeric cable using travelling wave techniques. He has been with Qualitrol for twenty five years in various roles such as technical support and sales and marketing, primarily working with fault recorders, sequence of events recorders, circuit breaker test sets and fault locators in high voltage substations and power station environments. David spent 5 years as Product Manager for travelling wave fault locators and multi function fault recorders developing the strategic road map for the products and driving growth through innovation and new product developments. He is currently a Senior Technical Applications Specialist for Qualitrol's IP range of products. David is a member of the IEE and has au-

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Ian Culbert is a Rotating Machines Specialist at Iris Power. Before joining Qualitrol-Iris Power, Ian was an induction motor designer with both Parsons Peebles in Scotland and Reliance Electric in Stratford, Ontario. He then joined Ontario Hydro/Ontario Power Generation in 1977 as a motor and small generator specialist. Prior to his retirement from this company, in 2002, Ian was responsible for providing support to Ontario Power Generation's nuclear plant engineers on motor and standby generator design, performance, maintenance, repairs and environmental qualification. Ian has co-authored several papers on motor and generator electrical component condition assessment, has been principal author of three EPRI motor repair and reconditioning specifications. He is also co-author of "Electrical Insulation for Rotating Machines". Ian currently chairs the IEEE Working Group revising IEEE 43 on insulation resistance testing. Mr. Culbert is a Registered Professional Engineer in the Province of Ontario, Canada.

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Paul Donegan is the Software Engineering Manager at Qualitrol DMS. His main development interests focus on intelligent distributed systems, generalised communication mechanisms, object based storage and condition based *rules engines* with domain-specific rule sets that assist in the determination of real-time condition of plant. Since joining DMS in 2003 he has been responsible for the design and development of condition monitoring solutions within the T&D sector with development of the partial discharge monitoring products, including

SmartPDM, PD Portable, SmartCoupler and the SmartSUB integrated condition monitoring platform. During this time he lead the design and development of the standards based communications layer including IEC61850 protocol whilst taking responsibility for the NERC compliance of DMS products.



Ashish Kulshrestha received his Bachelor of Engineering degree from S.G.S. Institute of Technology and Science (Indore, India) with major in Electronics & Instrumentation. Ashish has over 19 years of experience in Power Management, Automation and Substation System Integration. He is a senior member of IEEE (member PES-PSRC (IEEE C37) member H19, C4 WG), member of ANSI, member of USTAG and a US nominated expert on IEC TC57, WG10 (IEC61850) since 2001. Mr. Kulshrestha has successfully

integrated over two dozen transmission substation and power plants globally. Ashish has authored and co-authored various papers on design and implementation of IEC61850 in substation and generation applications. In past, Ashish worked at GE Energy, where we held a variety progressive positions in Technology, Operations, Marketing and Sales. Ashish is currently working at Qualitrol as their global leader for technical applications specialist team. Ashish is also very active volunteer with various US non-profits. He is a board member at two US non-profits, Sanjivni (Stem Cell registry for South Asians) & ERF (Uplifting poverty in India). Ashish is also a member and patron, Mind and Life Institute (mindandlife.org): Intersection between modern science and Buddhist science. He also teaches Junior Achievement as a volunteer at local Elementary and Middle schools.



Emilio Morales is a Technical Application Specialist in Transformer applications at Qualitrol Company LLC. His main focus is to support solutions in comprehensive monitoring for Transformer applications. Emilio attended Nuevo Leon State University in Mexico from 1975 to 1979, receiving his Bachelor of Science degree in Electro Mechanical Engineering in 1980. Emilio has spent his entire career in design in the power transformer manufacturing industry. His has over 30 years of experience in

design which includes transformers up to 500 MVA and 500 kV as well as furnace and rectifier transformers and different types of reactors. He is a member of the IEEE/PES Transformer Committee and actively participates in various task forces. Emilio previously worked with GE-Prolec, Ohio Transformer, Sunbelt Transformer and Efacec Power Transformers.



Ing. Mag.(FH) **Robert Neumann** is Sales Manager for Power Quality Systems at Qualitrol. From 1996 until 2003 he worked in the telecommunication industry in Austria. In 2004 he joined the Qualitrol group as Product Manager for Power Quality Monitoring systems. In 2011 he moved into a sales management position. He obtained his technical high school diploma in Electronics at TGM Vienna and graduated in European Economy and Business Management at the University of Applied Sciences (FH des bfi Wien, Vienna).



Mladen Sasic has twenty years of international experience in design, production, installation, testing and maintenance of Power generation, transmission and distribution equipment. He obtained a Bachelor of Science in Electrical Engineering-Electrical Power Engineering degree from the University of Sarajevo. Mladen is a member of the Association of Professional Engineers of Ontario, Canada, as well as a member of IEEE, CSA Technical Subcommittee on Safety Requirements for Electric Equipment for Measurement Control. He has contributed to the

Handbook of Electrical Motors and has co-authored and presented more than 30 technical papers at various international conferences. Since 1993, Mladen has been a member of Iris Power and is currently Manager of the Rotating Machines Technical Services Group.



Greg Stone is an electrical engineer with a Ph.D. in electrical engineering from the University of Waterloo, Canada. From 1975 to 1990, Dr. Stone worked for the Research Division of Ontario Hydro, at the time the largest electric power utility in North America. He eventually became responsible for the testing of high voltage equipment such as the 1200 large motors and generators in Ontario Hydro's system. Greg Stone was also one of the developers of on-line partial discharge test methods to evaluate the condition of the high voltage insulation in stator

windings that are used on most large generators and many large motors in North America. Since 1990, Dr. Stone has been employed at Iris Power in Toronto Canada, a company he helped to form (now a Qualitrol company). Iris Power designs, manufactures and sells on-line partial discharge test equipment for machines. Greg Stone has published over 125 technical papers and has been awarded 3 patents. He has chaired several IEEE committees that created standards for evaluation and testing of rotating machines. He is past President of the IEEE Dielectrics and Electrical Insulation Society, and continues to be active on many other IEEE committees. He represented Canada on the International Electrotechnical Commission's IEC 2J (Rotating Machine Insulation), and later became its Chair. He is also the Canadian delegate to IEC 15E (Insulation Test Methods). In 1992 Dr. Stone was elected a Fellow of the IEEE; he was awarded the IEEE Forster Distinguished Service Award in 1993 and was awarded the IEEE Third Millennium Medal in 2001. Dr. Stone is a registered professional engineer in Ontario.

MONDAY, NOVEMBER 19

	Track 1 Rotating Machines	Track 2 T&D
09:00–10:45	Recent Problems with Air Cooled Motor and Generator Stator Windings <i>Greg Stone, Qualitrol-Iris Power, Canada</i>	Transformer Monitoring: Technology, Current Trends & Future Options <i>Emilio Morales Cruz, Qualitrol, USA</i>
10:45–11:00	<i>Refreshment Break</i>	
11:00–12:30	Stator Inspections, Tests and Maintenance Practices to Increase Reliability of Air-Cooled Generators <i>Bill Moore, National Electric Coil, USA</i>	Integrated Condition Monitoring Systems Using IEC61850 <i>Paul Donegan & Ashish Kulshrestha, Qualitrol, USA</i>
12:30–14:00	<i>Lunch</i>	
14:00–15:00	Rotor Inspections, Tests and Maintenance Practices to Increase Reliability of Air-Cooled Generators <i>Bill Moore, National Electric Coil, USA</i>	Wide Area Remedial Action Schemes Based on Synchrophasors <i>Dr Arun G Padhke, Professor-Virginia Tech, USA</i>
15:00–16:00	Stator Motor Off-Line Testing <i>Ian Culbert, Qualitrol-Iris Power, Canada</i>	
16:00–16:15	<i>Refreshment Break</i>	
16:15–17:15	Effect of Variable Speed Drives on Stator Windings <i>Greg Stone, Qualitrol-Iris Power, Canada</i>	Travelling Wave Fault Location Principals and their Application on Overhead Lines <i>David Cole, Qualitrol, UK</i>
17:15–19:00	<i>Conference Reception</i>	

TUESDAY, NOVEMBER 20

	Track 1 Rotating Machines	Track 2 T&D	
09:00–10:00	Stator Endwinding Vibration—Off-line Testing and On-Line Monitoring <i>Mladen Sasic, Qualitrol-Iris Power, Canada</i>	Analysis of Case Studies to Demonstrate how Modern Fault Monitoring Systems can Improve Power System Reliability and Availability <i>David Cole, Qualitrol, UK</i>	
10:00–11:00		Power Quality Measurements – Review of International Standards, Measurement Parameters and Deployment Techniques <i>Robert Neumann, Qualitrol, Europe</i>	
11:00–11:30	Refreshment Break		
11:30–12:30	Recent Improvements in PD Interpretation <i>Greg Stone, Qualitrol-Iris Power, Canada</i>	PRODUCT TRAINING— Group 1 ◆ IDM and ReplayPlus training including communication techniques and data analysis	PRODUCT TRAINING— Group 2 ◆ Overview of IEC61850
12:30–14:00	Lunch		
14:00–15:00	On-line Synchronous Rotor Testing <i>Mladen Sasic, Qualitrol-Iris Power, Canada</i>	◆ TWS hardware and software platforms overview ◆ PQ hardware and the capabilities of in iQ+ for automatic report generation	Overview of ◆ C37.118-1-2011 IEEE Standard for Synchrophasor Measurements for Power Systems ◆ C37.118-2-2011 IEEE Standard for Synchrophasor Data Transfer for Power Systems
15:00–16:00	Motor Current Signature Analysis (MCSA) to Detect Induction Motor Rotor Problems <i>Ian Culbert, Qualitrol-Iris Power, Canada</i>		
16:00–17:00	<i>PDA/TGA/EL CID User Group Meeting</i> The User Group invites feedback on problems and successes with on-line partial discharge testing and recommended improvements. Feedback on EL CID testing is also solicited. Open to PDA/TGA/EL CID owners only.		

WEDNESDAY, NOVEMBER 21

	Rotating Machines
09:00—17:00	<p>Introduction to Stator Winding Partial Discharge Interpretation</p> <p>This course will briefly review the failure processes that on-line PD monitoring can detect, as well as the most common detection methods. The different types of data presentation (pulse magnitude and phase resolved PD plots) are then discussed. Identifying the most deteriorated windings using the Iris PD database, machine comparison and PD trend over time is discussed in detail, as is the identification of the failure mechanisms causing the PD.</p> <p><i>Instructor: Greg Stone, Qualitrol-Iris Power, Canada</i></p>
12:00—13:30	<i>Lunch</i>
09:00—17:00	<p>Quality Tests and Inspections for Motors During Manufacture and Repair</p> <p>This course will cover quality tests on and inspections for the major components of squirrel-cage induction and synchronous motors while they are being manufactured or repaired. These quality checks will include electrical tests on stator windings, rotor windings and stator cores; tests and measurements on mechanical components such as bearings and complete rotors; and component visual inspections. Final acceptance testing of assembled new motors and repaired motors after reassembly will also be covered.</p> <p><i>Instructor: Ian Culbert, Qualitrol-Iris Power, Canada</i></p>

QCMC 2012—Conference Registration

Registration Includes: Admission to all conference sessions on Monday; one copy of Conference Proceedings; user group meeting. Also included are morning and afternoon Refreshments; Lunch on Sunday and Monday; and a Reception on Monday evening.

PLEASE PRINT CLEARLY

Last (Family) Name: _____ First Name: _____

Company _____

Address: _____

City: _____ State/Prov: _____ Country: _____ Zip/PostalCode: _____

Business Telephone: _____ Fax: _____ Email: _____

Please indicate dietary requirements: _____

	US \$
Conference Registration Please circle the session you will attend—choose ONLY ONE MONDAY: Rotating Machines OR T&D TUESDAY: Rotating Machines OR T&D	No charge
WEDNESDAY: Short Course Registration—please check the course you wish to take: 1. Partial Discharge in Rotating Machines	\$75
2. Motor Testing	\$75

Method of payment: Credit Cards will only be charged in US\$. Type of Credit Card: MC VISA

Credit Card No: _____ Expiry Date: _____

Name on Card: _____ Signature: _____

Email This Completed Form To: resi.zarb@qualitrolcorp.com