

International Conference on Condition Monitoring,
Diagnosis and Maintenance

CMDM 2017 | 4th edition

September 25 - 27, 2017, Radisson Blu Hotel, Bucharest, Romania

- Modern Management Technology -

In the period between the two world wars, the city's elegant architecture (bauhaus and art deco) and the sophistication of its elite earned Bucharest the nickname of "Little Paris"

Interwar Bucharest
"The Little Paris"

TH

CMDM 2017 - INTERNATIONAL CONFERENCE ON CONDITION MONITORING, DIAGNOSIS AND MAINTENANCE 2017

On behalf of the Romanian National Committee of CIGRE, it is our great pleasure to welcome our distinguished guests of the fourth edition of the International Conference on Condition Monitoring, Diagnosis and Maintenance, event organized every two years by CIGRE Romanian National Committee as organizer and CNTEE Transelectrica (the Romanian TSO) as co-organizer, in Bucharest - Romania.

The main topics of CMDM 2017 cover the technical activities of minimum 7 (seven) CIGRE Study Committees: A1, A2, A3, B1, B2, B3, D1. Among the CMDM2017 topics we may mention: 1. Smart Grids; 2. Condition monitoring and diagnosis for power equipment and high voltage lines; 3. Condition monitoring and diagnosis in power plants; 4. Failure phenomena based on electrical, mechanical, chemical, and thermal causes; 5. Degradation assessment for power equipment; 6. Modern maintenance tools and technologies; 7. Advanced sensing techniques for condition monitoring and diagnosis; 8. Applications of artificial intelligence for data mining and condition assessment; 9. Substation automatization and automated metering; 10. Asset management tools for power equipment; 11. Distributed Resources and Renewables. CMDM 2017 includes also tutorials, technical papers sessions and a 3 days exhibition.

At its fourth edition, it is a major event for the national power system that provides an exceptional venue to CIGRE members and interested parties for presenting fundamental and technological developments and for promoting key suppliers of products and services for electrical power systems. The conference will bring together power systems engineers, decision makers, economists, academicians and others with interest in the power field. For more details on previous editions, please visit CMDM 2011, CMDM 2013 and CMDM 2015 websites: www.cmdm2011.org, www.cmdm2013.org and www.cmdm2015.org.

We would like to give our warm welcome to all the CMDM 2017 conference participants and to wish a successful and enjoyable meeting. We hope that everyone will find the CMDM 2017 both technically interesting and stimulating, and that your staying in Bucharest will be an unforgettable and pleasant one.

Romanian National Committee of CIGRE

Dr. Ciprian Diaconu
Chairman

Dr. Constantin Moldoveanu
Vice - Chairman

Dr. Ioan Dorin Hategan
Secretary



ABOUT PREVIOUS EDITIONS

CMDM 2011

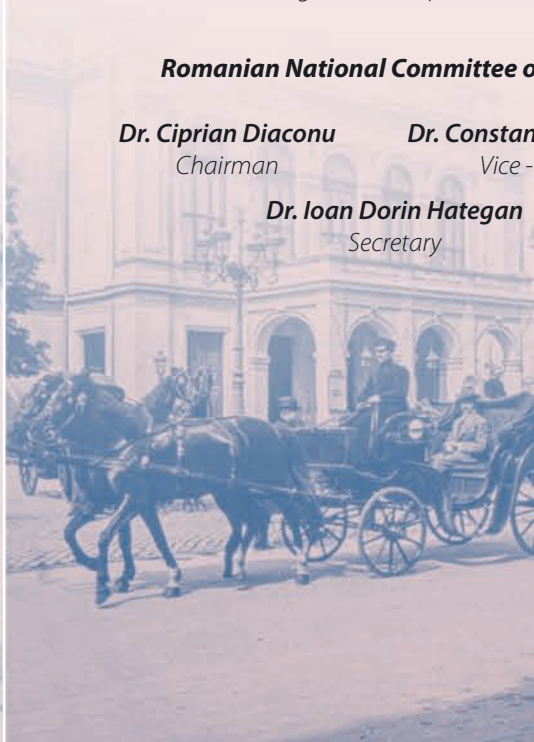
The first edition of the International Conference on Condition Monitoring, Diagnosis and Maintenance – CMDM 2011, was organized by the CIGRE's Romanian National Committee - as organizer and CNTEE Transelectrica - as co-organizer, under the patronage of the Romanian Ministry of Economy, Trade and Business Environment. The international event took place at Radisson Blu Hotel, Bucharest, Romania, on September 19 – 23, 2011.

Key facts of CMDM 2011:

- 253 registered participants, coming from 26 countries and a wide area of interest (public power sector, universities, private power sector, etc.), from national or international companies;
- 66 articles presented during 5 days;
- The conference included tutorials, technical paper sessions and a 3 days exhibition [more details on www.cmdm2011.org]

Main Topics

- Smart Grids
- Condition monitoring and diagnosis for power equipment and high voltage lines
- Condition monitoring and diagnosis in power plants
- Failure phenomena based on electrical, mechanical, chemical, and thermal causes
- Degradation assessment for power equipment
- Modern maintenance tools and technologies
- Advanced sensing techniques for condition monitoring and diagnosis
- Applications of artificial intelligence for data mining and condition assessment
- Substation automatization and automated metering
- Asset management tools for power equipment
- Distributed Resources and Renewables.





CMDM 2013

The second edition of the International Conference on Condition Monitoring, Diagnosis and Maintenance - CMDM 2013 was organized by the Romanian National Committee of CIGRE, as organizer and CNTEE Transelectrica (the Romanian TSO) and A-LST-R (the Romanian technical authority in the field of Live Maintenance), as co-organizers.

The international event took place at Radisson Blu Hotel, Bucharest, Romania, on September 2-5, 2013.

The conference also had a joint session with SC A1 (the SC A1 CIGRE Meeting and Colloquium took place at Hotel Howard Johnson, 31st August – 7th September 2013, Bucharest).

As a summary of CMDM 2013, joint session CIGRE – SC A1, we may mention:

- 260 registered participants, coming from 32 countries and a wide area of interest (public power sector, universities, private power sector, etc.), from national or international companies;
- 50 articles presented during 4 days technical paper sessions;
- 6 tutorials presented by international recognized experts;
- 4 days exhibition dedicated to key suppliers of products and services for electrical power systems.

Main topics

- Smart Grids
- Condition monitoring and diagnosis for power equipment and high voltage lines
- Condition monitoring and diagnosis in power plants
- Failure phenomena based on electrical, mechanical, chemical and thermal causes
- Degradation assessment for power equipment
- Modern maintenance tools and technologies
- Advanced sensing techniques for condition monitoring and diagnosis
- Applications of artificial intelligence for data mining and condition assessment
- Substation automation and automated metering
- Asset management tools for power equipment
- Distributed resources and renewable energy.



CMDM 2015

The third edition of the International Conference on Condition Monitoring, Diagnosis and Maintenance - CMDM 2015 was organized by the CIGRE's Romanian National Committee, as organizer and CNTEE Transelectrica (the Romanian TSO) as co-organizer.

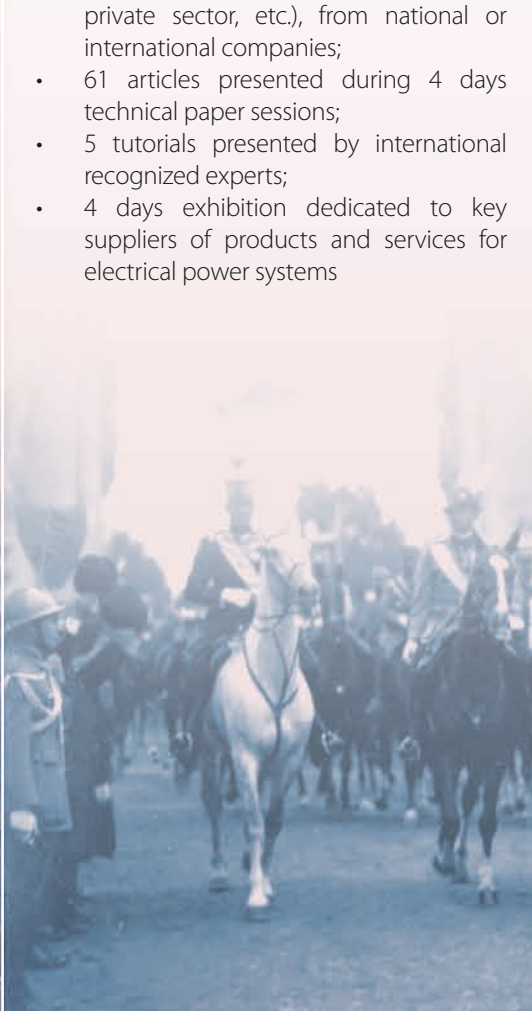
The international event took place at Athénée Palace Hilton Bucharest Hotel - Le Diplomate Ballroom (a listed historic monument, recognized as a heritage site by UNESCO), on 5th – 8th October 2015.

As a summary of CMDM 2015, we may mention:

- 200 registered participants, coming from 22 countries and a wide area of interest (public power sector, universities, power private sector, etc.), from national or international companies;
- 61 articles presented during 4 days technical paper sessions;
- 5 tutorials presented by international recognized experts;
- 4 days exhibition dedicated to key suppliers of products and services for electrical power systems

Main topics

- Smart Grids
- Condition monitoring and diagnosis for power equipment and high voltage lines
- Condition monitoring and diagnosis in power plants
- Failure phenomena based on electrical, mechanical, chemical, and thermal causes
- Degradation assessment for power equipment
- Modern maintenance tools and technologies
- Advanced sensing techniques for condition monitoring and diagnosis
- Applications of artificial intelligence for data mining and condition assessment
- Substation automatization and automated metering
- Asset management tools for power equipment
- Distributed Resources and Renewables.



Key Speakers & Tutorials:

PRESENTER

TUTORIAL TITLE

PRESENTER DESCRIPTION

Hiroki Ito, Ph.D.

CIGRE Reliability surveys and Lifetime management of Equipment in the context of power system evolution

Hiroki Ito joined Mitsubishi Electric Corporation in 1984, where he had engaged in the research and development on high-voltage DC and AC gas circuit breakers. From 1989 to 1991, he worked in the Coordinated Science Laboratory at University of Illinois, USA. He was the director of Mitsubishi Electric High voltage & High power testing laboratories from 2005 to 2012. Since 2012, he is the Senior Chief Engineer of Energy & Industrial System Group, Mitsubishi Electric Corporation.

In CIGRE, Hiroki Ito was the Convener of CIGRE WG A3.22 and 28 that investigated the specifications of UHV substation equipment to support IEC standardization works. He is also the member of IEC62271-310 MT40: Electrical endurance tests of Circuit breakers, and IEC62271-302: Controlled switching.

He is currently the Chairman of CIGRE Study Committee A3: High voltage equipment since 2012.

Terry Krieg, BE (Elec) - Hons, FIEAust

21st Century Condition Monitoring - Challenges and Opportunities

This tutorial will look at some of the challenges facing the power industry, some of the work of CIGRE Study Committee B3 and also some of the pitfalls and issues encountered by utilities in improving asset management and introducing new technologies and condition monitoring practices.

Terry Krieg is the Chairman of the CIGRE Substation Study Committee B3 (Substations) since 2011.

He is a South Australian power electrical engineer and consultant with over 40 years power industry experience and provides consulting services to the power industry via his company.

He has held senior management and technical positions at a number of Australian power utilities in generation, transmission and distribution where he led the introduction of new approaches to substation design standardization, on line condition monitoring, asset management and risk management (including responsibility for the commissioning the interconnection of the state to the Victorian power network in 1989).

An Honours (First Class) graduate of the University of South Australia (Bachelor of Engineering - Electrical), he is a Fellow of the Institute of Engineers Australia (FIEAust) and a Registered Professional Engineer Queensland (RPEQ). He is an endorsed assessor for the asset management specification, BSi PAS-55:2008 and assists companies to develop asset management practices aligned to ISO 55000. In addition, Terry is a Graduate of the Australian Institute of Company Directors.

PRESENTER

TUTORIAL TITLE

PRESENTER DESCRIPTION

Cunningham Hugh, BSc(Eng), MIEI

Savings through Optimized Maintenance in Air Insulated Substations

This tutorial is based the work of CIGRE Working Group B3.32, and CIGRE technical brochure No.660 titled – Savings through Optimized Maintenance in Air Insulated Substations

Hugh Cunningham is an Electrical Engineer with over 18 years experience in HV substations engineering. Currently he is Head of Substation Design Standards for ESB International in Ireland.

In CIGRE, he is active in Study Committee B3 and has contributed to the following technical brochures:

- Technical Brochure 354 – Guidelines to Cost Reduction of Air Insulated Substations
- Technical Brochure 532 – Substation Upgrading and Upgrading
- Technical Brochure 614 - Substations for Severe Climatic Conditions

He was Convenor of CIGRE Working Group B3.32 who published CIGRE Technical Brochure No.660 Saving through Optimized Maintenance for Air Insulated Substations and a member of CIGRE WG B3.38 – Risk Management in HV Substations.

Claudio Marchetti, BSc

Digital Substation for the future

Claudio Marchetti has been with ABB for more than 25 year with power electricity industry experiences and held different managing positions in Research and Development and Global Product Management. From 2009-2015 responsible in the area of Smart Grid as Global Solution Manager within Industrial Segment Initiative in ABB group. From 2015 responsible Global Product Management for Digital Substation within ABB Power Grids, Grid Integration.

Also active member in standardizations committee:

- IEC: Swedish member, IEC SG 3 (Strategic Group) and IEC SyC Smart Energy
- CEN/CENELEC/ETSI: SGCG – Member of the WG - Set of standards on Smart Grid
- SEK: Chairman for the Smart Energy working group in Sweden SEK-SK1.



PRESENTER

Gerhard Wieserner (Eng)

TUTORIAL TITLE

*IEC 61850
Communications for
Digital Substations*

PRESENTER DESCRIPTION

Gerhard Wieserner joined Siemens AG in 1992. During his time at Siemens AG he held different roles in technical consulting and sales.

Since 2012 Gerhard Wieserner is Product Sales Development Manager Electric Power Markets, for Industrial Communication networking and RUGGEDCOM portfolio EMEA. In this capacity, he identifies emerging market trends, works with customers and Siemens businesses to provide best in class industrial communication offers, specifically to drive Digitalization in the Electric Power Grid.

He holds an engineer diploma (Dipl.-Ing.) in Telecommunications Engineering from the College of Advanced Technology "Georg-Simon-Ohm" Germany.

Ciprian DIACONU, Ph.D.

*Technical risks and
solutions from periodic,
large surpluses or deficits
of available renewable
generation*

Ciprian Diaconu is Chairman of Romanian NC CIGRE, Director at the Romanian Transmission and System Operator - CNTEE Transelectrica.

In 30 years of experience in the High Voltage Networks, Mr. Ciprian Diaconu achieved considerable knowledge in development, operation and maintenance, project management and others.

Mr. Ciprian Diaconu graduated the Technical University of Bucharest in 1986 and in 2009 he obtained the PhD degree from Technical University of Timisoara in Asset Management.

During his activity in network utilities Mr. Ciprian Diaconu hold different managerial positions as Director, Deputy General Director, member of Directorate and member of the Supervisory Board within Romanian Transmission and System Operator - Transelectrica. Main responsibilities where: system development and grid connection, asset management and maintenance, development and rehabilitation projects.

From 2009-2015 he represented Transelectrica in the ENTSO-E's System Development Committee.

Within CIGRE he started activity in early 2000 as a one of the founders of Romanian National Committee.

He was member of Study Committee B3 "Substations" from 2006 to 2014, member of the Study Committee C1 "System development and Economics" from 2014 till today, member of several WG's within B5, B3, C1.

From 2010 Mr. Ciprian Diaconu hold the Chairman position of the Romania National Committee of CIGRE and also he was member of the CIGRE Administrative Council.



ORGANIZER:

Association of the Romanian National Committee - CIGRE (CNR- CIGRE) is officially recognized as the Romanian representative of the Board of International Council on Large Electric System (Conseil International des Grands Réseaux or Electriques), based in Paris, CIGRE hereinafter. CNR-CIGRE association is an independent, nongovernmental, apolitical nature, non-profit organization, according to the act of will expressly manifested in the constitutive acts by the founding members. The association has a technical & scientific profile . Currently CNR-CIGRE records 157 individual members and 32 corporate members.
www.cigre.org.ro

CO-ORGANIZER:

CNTEE TRANSELECTRICA is the Romanian Transmission and System Operator (TSO). For the 17 years of its corporate life Transelectrica has managed and operated the electricity power system and transmission grid, providing transmission services for electricity transactions among central and south-eastern countries. It ensures electricity transmission from generators to the large consumers connected to the grid; manages the power system and wholesale electricity market operation, the grid and market infrastructure development and guarantees a regulated third party access to the Romanian electricity transmission network under transparent, non-discriminatory and fair conditions to all market players. Transelectrica's main processes are adequacy of the transmission grid, power system reliable and safe operation, and support of open liberalised electricity markets. Transelectrica comprises 6 legal subsidiaries (Opcom, Teletrans, Smart, Icemenerg, Icemenerg Service, Formenerg), as well as 8 transmission branches in Bucharest, Bacau, Cluj, Constanta, Craiova, Pitesti, Sibiu, and Timisoara. The Company has been listed to the Bucharest Stock Exchange since August 2006.

www.transelectrica.ro

WITH SUPPORT of:

CIGRE Central Office which is based in Paris France, counts 58 National Committees to enhance its relationship and get closer to its Members. CIGRE National Committees offer to its Members direct access to services and supports. CIGRE counts more than 14 000 equivalent Members composed of researchers, academics, engineers, technicians, suppliers, and other decision makers, in over 90 countries. More than 3,500 experts from across the globe actively collaborate in structured work programmes with CIGRE. There efforts are coordinated by 16 Study Committees which are overseen by a Technical Committee. Research efforts are anchored to four interlinked objectives : designing and deploying the power system of the future, optimizing existing equipment and power systems, respecting the environment, and offering access to information to international key players in the electrical power systems' industry.

www.cigre.org

SILVER SPONSORSHIP:



ABB is a leading global technology company in power and automation that enables utility, industry, and transport & infrastructure customers to improve their performance while lowering environmental impact. The ABB Group of companies operates in roughly 100 countries and employs about 135,000 people. The accomplishments of ABB in Romania include key projects for power transmission and distribution, robotics solutions (with applications

for welding, painting, palletizing and handling, including preventive and reactive maintenance), Flame proof / AMD motors applications and AMI motors applications for thermo power plants, low voltage panels supplying power to various production units in the automotive and petrochemical industries, as well as the timber industry.

www.abb.com



Electrica is a market leader in electric power distribution and supply of Romania, as well as one of the most important player in energy services branch. Its top position is sustained both by its economic results, and by an experience in the field of almost 120 years. Electrica Group is operating at national level – organized in three zones for electric power distribution: Transylvania North, Transylvania South,

Muntenia North and all over the country for the electric power supply and for maintenance and energy services. Since July 2014, Electrica is a company with majority private capital, listed on Bucharest and London Stock Exchanges. Electrica is the only Romanian company in electric power distribution and supply of Romania.

www.electrica.ro



Siemens is one of the main technology companies in Romania, with a portfolio focused around three growth segments: electrification, automation and digitalization. With a local history of 112 years, Siemens owns four factories in Sibiu and Buzias,

where are produced systems and components for automation and industrial applications and four Research & Development centers in Bucharest, Brasov and Cluj-Napoca.

www.siemens.ro

BRONZE SPONSORSHIP:



E-Distributie operates and modernizes the electricity grids in Banat, Dobrogea and Muntenia with the aim to improve the quality of the distribution service. It distributed about 15 TWh of

electricity annually to more than 2.7 million end-users throughout a grid of over 91,000 km, with 283 stations and 22,379 substations.

www.e-distributie.com



Infrastructura moderna. Viata buna.

With 20 years of experience, **Electrogrup** was founded with the desire to provide innovative and high quality services in the area of power infrastructure. The business further expanded to telecom and civil energy infrastructure, developing complex projects at national and European level. The company collaborates with some of the most

important telecom operators, energy distributors and industrial park or renewable energy production units developers, providing them with turn-key design, implementation, maintenance and dispatching solutions.

www.electrogrup.ro



EnergoBit is a competitive, strong and trustworthy company in the sector of major electrical energy players.

Our company develops its activity driven by responsibility, top level performance, elegance and professional values and ethics. EnergoBit represents the story behind electricity proposing and offering a full range of services such as: energy audit and

technical design, production of electrical equipment (low and medium voltage), general contracting, maintenance and operation services. The company develops projects in the energy power services market, in Romania and abroad, delivering innovative and sustainable energy solutions, designed to meet customers' specific needs.

www.energobit.com



EXIMPROD is a Romanian group of companies founded in 1994, focusing its activities to supply products and services for T&D sector. Eximprod started with high voltage products in 2001, when we have introduced line insulators for 110, 220

and 400 kV. Our today's range of products include 123/145 kV equipment: Circuit Breakers, Instrument Transformers and Disconnectors.

www.epg.ro



Romelectro SA acts as EPC Contractor, Project Developer and Investor in the fields of power and heat generation, power transmission & distribution, environment and industry, in Romania and on international markets. Romelectro leads a Group of companies consisting of:

- ISPE, Institute for Studies and Power Engineering, Leader in consulting and engineering in power and environment,

- CELPI, manufacturer of steel structures of towers for electricity and telecommunication towers.
 - Electromontaj Carpati Sibiu, specialized in mounting, assembly, and commissioning services for electrical substations and OHTLs.
- In 2016 Romelectro founded Romelectro Arabia, a Saudi entity, acting as EPC Contractor in Gulf area.

www.romelectro.ro

Conference Agenda Summary

CMDM 2017 (4rd edition)

Radisson Hotel, Bucharest, Romania - September 25th -27th, 2017

PROGRAM TIME TABLE

CMDM 2017 (4rd edition)

Radisson Hotel, Bucharest, Romania - September 25th -27th, 2017

Monday, September 25, 2017, Atlas Conference Room, Radisson Hotel

10:00 - 11:00	Registration <i>Welcome Coffee</i>
11:00 - 13:00	<i>Opening Plenary</i> Exhibition Opening Tutorial 1 Tutorial 2
13:00 - 14:00	<i>Lunch and Break</i>
14:00 - 15:00	Session 1
15:00 - 16:00	Tutorial 3
16:00 – 16:30	<i>Coffee Break</i>
16:30 - 18:00	Session 2
19:00 - 22:00	Cocktail Reception - Radisson Hotel, Dacia Felix Restaurant

Exhibition
11:00 - 18:00
Prefunction
Area, 1st Floor

Tuesday, September 26, 2017, Atlas Conference Room, Radisson Hotel

09:00 - 10:00	Session 3
10:00 - 11:00	Tutorial 4
11:00 - 11:30	<i>Coffee Break</i>
11:30 - 13:00	Session 4
13:00 - 14:00	<i>Lunch and Break</i>
14:00 - 15:00	Session 5
15:00 - 16:00	Tutorial 5
16:00 - 16:30	<i>Coffee Break</i>
16:30 - 18:00	Session 6
19:00 - 22:00	Conference Networking Party - Hanu' Berarilor (Casa Oprea Soare)

Exhibition
09:00 - 18:00
Prefunction
Area, 1st Floor

Wednesday, September 27, 2017, Atlas Conference Room, Radisson Hotel

09:00 - 10:00	Session 7
10:00 - 11:00	Tutorial 6
11:00 - 11:30	<i>Coffee Break</i>
11:30 - 13:00	Session 8
13:00 - 14:00	<i>Lunch and Break</i>
14:00 - 15:00	Session 9
15:00 - 15:15	Closing Plenary

Exhibition
09:00 - 15:15
Prefunction
Area, 1st Floor

Monday, September 25, 2017 Atlas Conference Room

10:00 - 11:00	Registration Welcome Coffee
11:00 - 13:00	Opening Plenary Tutorial 1: CIGRE Reliability surveys and Lifetime management of Equipment in the context of power system evolution, presented by Mr. Hiroki Ito, Japan Tutorial 2: 21st Century Condition Monitoring - Challenges and Opportunities, presented by Mr. Terry Krieg, Australia
13:00 - 14:00	Lunch and Break
14:00 - 15:00	Session 1 Chair Hiroki Ito

Exhibition
11:00 - 18:00
Prefunction
Area, 1st Floor

Field Experience with Non-intrusive In-service Diagnostics of Circuit Breaker Based on Transient Electromagnetic Emissions
[R. Doche, R. Pater, S. Poirier, M. Germain, S. Gingras, CANADA](#)
Maintenance method for spring operating mechanism of gas circuit-breaker based on its deterioration investigation
[M. Katsumata, K. Kawakita, T. Mori, H. Otani, JAPAN](#)
Evaluation of Electrical degradation in High Voltage Circuit Breaker Monitoring
[N. Gariboldi, SWITZERLAND, P.L. Corliss, USA](#)
The role of condition assessment in the management of asset maintenance and replacement
[A. Wilson, H. Cunningham, UK](#)

The Role of Condition Monitoring in an Asset Management Organization
[T. McGrail, R. Heywood, USA](#)

Discussions
Tutorial 3 : Digital Substation for the future, presented by Mr. Claudio Marchetti

Coffee Break



16:30 - 18:00

Session 2

Chair Hugh Cunningham

Hydro power plant structural monitoring integrated to the Smart Grid by Internet of Things technology

L. C. Magrini, P. S. D. Kayano, F. Crispino, E. F. Carneiro, T. P. A. Cappi, A. L. C. Santos, BRASIL

Developing a Framework for Qualitative Assessment of Threats to Transmission System Operators Security

S. Voronca, ROMANIA

Existing solutions for digital substations

I. V. Bărburaș, I. Boiciuc, S. Bugnar, B. Borbely, ROMANIA

Considerations on Wide Area Back-up Protection of Power System using Phasor Measurement Units

A. Miron, M. Dragomir, R. Pentiu, C. Popa, C. Bobric, ROMANIA

Residential Load Management through Smart Plugs in Smart Grids

O. Ayan, M. Saçli, B. Emre, TURKEY

Investigation of Power Quality Analysis of Single-Phase Inverter Topologies for Solar Energy Systems

M. Saçli, O. Ayan, M. Silsüpür, B. Emre, TURKEY

Philosophy protection OHL from ETN 400 KV of INDIA and ROMANIA

V. Vîlcu, ROMANIA

Discussions

Cocktail Reception - Radisson Hotel, Dacia Felix Restaurant

19:00 - 22:00

Exhibition

11:00 - 18:00

Prefunction
Area, 1st Floor

10:00 - 11:00

Tutorial 4 : Savings through Optimized Maintenance in Air Insulated Substations, presented by Mr. Cunningham Hugh, Ireland & Mr. Alan Wilson, UK

11:00 - 11:30

Coffee Break

11:30 - 13:00

Session 4

Chair Ciprian Diaconu

Online Detection of Windings Distortion in Power Transformers by Direct Vibration Measurement Using a Thin Fiber Optics Sensor

P. Kung, R. Idsinga, J. Bin Fu, H.-Chaska V.-Durand, C. Shui Yang, CANADA

Analysis of the monitoring solutions of the transformer units within CNTEE Transelectrica SA, in order to implement the concept of digital substation

E. Stoicescu, C. Lisman, T. Chiulan, ROMANIA

Strategies for increasing the mechanical safety of Romanian overhead lines network. Overview of developments in design standards and their implications on future performance

E. Mateescu, G. Gheorghita, S. Wechsler, D. Mărginean, I. Hațegan, , L. N. Iacobici, M. Văju, ROMANIA

How to decrease or even avoid the conductor galloping in the case of single phase conductors and shield wires. A Romanian approach

G. A. Florea, A. Lipan, E. Mateescu, A. C. Rusu, I. Rodean, C. Baci, M. Florea, L. Lipan, ROMANIA

Evaluating the safety condition of high voltage composite insulators using the on-line leakage current monitoring and diagnostic systems, a Romanian experience

C. Moldoveanu, I. Hațegan, L. Iacobici, V. Brezoianu, A. Vasile, M. Ploeanu, V. Florea, E. Munteanu, C. Baci, ROMANIA

Monitoring system of transmission pylons' integrity

F. Capece, S. Atek, L. Lampani, P. Gaudenzi, ITALY

Big Data approach to monitoring of energy systems and partial discharge (PD) detection

A. Sinai, B. Boettcher, M. Menge, T. Gräf, T. Huecker, GERMANY

Discussions

Lunch and Break

13:00 - 14:00

14:00 - 15:00

Session 5

Chair Constantin Moldoveanu

Prevent degradation of Insulation in Transformers & Enhance Asset Life

Rajaram Shinde, INDIA

Diagnostic methods for detection of electrical equipment's faults, defects

A. Yu. Khrennikov, T. V. Ryabin, N. M. Aleksandrov, RUSSIA

Effect of Oxygen on Cellulose Aging Marker Behavior in Oil-immersed Power Transformers

F. Kato, R. Kuriyama, M. Miashita, T. Minagawa, R. Nishiura, H. Ito, JAPAN

Exhibition

09:00 - 18:00

Prefunction
Area, 1st Floor

Tuesday, September 26, 2017

Atlas Conference Room

9:00 - 10:00

Session 3

Chair Terry Krieg

Practical Experience with GSU Transformer Condition Monitoring: Managing Expectations, Extracting Value

T. McGrail, R. Heywood, USA

Actual issues of HV bushing condition monitoring

A. Kraiachich, A. Mordkovich, G. Tsfasman, RUSSIA

Development of Online Transformer Monitoring Programs

M. Tostrud, USA

Power transformer on-line monitoring & diagnostic system as a Smart grid solution

C. Moldoveanu, I. Hațegan, V. Brezoianu, A. Vasile, S. Zaharescu, ROMANIA

Transformer Online Monitoring roadmap (OLCM)

A. Al Qabtan, A. AL Rahbi, I. AL Blushi, A. Sharma, OMAN

Discussions

Exhibition

09:00 - 18:00

Prefunction
Area, 1st Floor

13:00 - 14:00

14:00 - 15:00

Investigation of Indicator Gas for Internal Fault on Ester Oil-immersed Transformer

R. Kuriyama, F. Kato, M. Miyashita, T. Minagawa, R. Nishiura, H. Ito, JAPAN

Key aspects of insulating fluids - HV performance, ageing behavior & fault markers

C. P. Wolmarans, B. Pahlavanpour, SWEDEN

Discussions

15:00 - 16:00

Tutorial 5: IEC 61850 Communications for Digital Substations, presented by Mr. Gerhard Wieserner , Germany

16:00 - 16:30

Coffee Break

16:30 - 18:00

Session 6

Chair, Florin Balasiu

Design and Maintenance Protection and Automation Systems in Romanian Power Grid

G. Moraru, ROMANIA

Substation automation system data base

A. Romanescu, S. Gheorghe, C. P. Lişman, V. Zaharescu, S. Kovács, L. N. Iacobici, M. Marcolţ, ROMANIA

Directional comparison zero sequence overcurrent protection scheme

I. C. Constantin, I. M. Ionescu, ROMANIA

Communications schemes used for transmission power lines

A. Iamandi, I.C. Constantin, ROMANIA

Connection solutions for RES in the Romanian power system - protection systems point of view

A. G. Ianţoc, V. Constantinescu, ROMANIA

Operating and Maintenance Evolution

I. Rodean, D. Morar, ROMANIA

Application of data visualization tool to assist the management of power equipment

Y. Yao, L. Zhanying, W. Song, L. Ruihai, CHINA

Discussions

19:00 - 22:00

Conference Networking Party - Hanu' Berarilor (Casa Oprea Soare)

Exhibition

09:00 - 18:00

Prefunction

Area, 1st Floor

Wednesday, September 27, 2017

Atlas Conference Room

9:00 - 10:00

Session 7

Chair Ioan Haţegan

Risk Factors and Prevention In Live Line Maintenance

M. N. Oltean, T. Făgărăşan, G. Cotrigăşan, ROMANIA

Using RFI survey methods to detect faulty high voltage equipment

A. Wilson, M. Hughes-Narborough, S. Krakenes, UK

Online Cable Insulation Testing using Partial Discharge Measurement under High Noise Environment

A. A. Khan, E. Morales Cruz, USA

Demonstration of an Online Continuous Monitoring System for Partial Discharge on Critical HV Cables

G. K. Earp, S. Baird, UK

Bridging the gap between analog, smart grid and digital substation

L. N. Iacobici, A. Romanescu, V. Zaharescu, S. Gheorghe, M. Marcolţ, ROMANIA

Discussions

10:00 - 11:00

Tutorial 6: Technical risks and solutions from periodic, large surpluses or deficits of available renewable generation, presented by Mr. Ciprian Diaconu, Romania

11:00 - 11:30

Coffee Break

11:30 - 13:00

Session 8

Chair George Florea

Using Drones, a new challenge in Live Line Maintenance

T. Făgărăşan, M. N. Oltean, ROMANIA

Electric Energy Storage Systems from theory to applied projects

M. Marcolţ, L. N. Iacobici, I. D. Haţegan, ROMANIA

Developing a power generation and storage system based on Smart Grids (Micro-Grid) solutions and technologies. Case study: Supply of internal services from Brazi Vest 400/220/110 kV substation from renewable energy

D. Balaci, I. Păvăloaia, C. Boguş, ROMANIA

Unbundled Smart Meter as a tool for empowering the end customer

M. Sănduleac, M. Albu, D. Stănescu, C. Diaconu, C. Stănescu, ROMANIA

Research on the classification of defect data of power equipment by using Naive-Bayes method

Y. Yao, L. Zhanying, W. Song, L. Ruihai, CHINA

Planning of voltage regulation in the Romanian transmission system taking into account power electronics based technologies

D. Bolborici, A. Ţolea, A. Talpoş, ROMANIA

Discussions

13:00 - 14:00

Lunch and Break

Exhibition

09:00 - 15:15

Prefunction

Area, 1st Floor

14:00 - 15:00

Session 9

Chair Gheorghe Moraru

An IIoT Based Approach for Grid Assets Analysis

A. Dumitrof, A. Neagu, C. Rotărescu, ROMANIA

Under-Frequency Load Shedding - new approaches in the Romanian Electric Power System

I. M. Ionescu, C. Constantin, ROMANIA

Wireless Devices for Electrical Equipment's Thermal Stress Monitoring

M. Dragomir, A. Dragomir, A. Miron, ROMANIA

Electric field modelling of high voltage composite insulators with the purpose of identifying fault causes

A. Talpos, A. Constantin, L. N. Iacobici, ROMANIA

Optimal electrical vehicle charging strategy for operating conditions improvement in distribution electrical grid,

A. T. Radu, M. Eremia, L. Toma, ROMANIA

Discussions

CLOSING PLENARY

15:00 - 15:15

Exhibition

09:00 - 15:15

Prefunction
Area, 1st Floor

CMDM 2017 EXHIBITION

CMDM 2017 Exhibition takes place in parallel with other activities of CMDM 2017 International Conference (scientific & technical sessions, tutorials, visits, etc.)

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