SC A1 ROTATING ELECTRICAL MACHINES

PS1: Developments of Rotating Machines and Experience in Service

A1-101 Unbalanced Magnetic Pull in Salient Pole Synchronous Machines A New Methodology to Calculate Orbital Eccentricity
J.J.E ROCHA - BRAZIL

A1-102 Fatigue Assessment in the Pole Fixation of Hydro-Generators
T. HILDENGER - BRAZIL

A1-103 Adjustable speed pumped storage system contributing in stabilization of power system
T. ISHIZUKI - J APAN

A1-104 Upgrade from the fixed speed to adjustable speed (Okutataragi Pumped storage power plant)
H. YAMASHITA - J APAN

A1-105 Ensuring High Quality Insulation System Of Large Motors - Design & Testing Requiring
D.K. CHATURVEDI - INDIA

A1-106 Efficiency and Cost-effectiveness comparison between Synchronous Reluctance Motor and Induction Motor
B. H. KANG - KOREA

A1-107 Root Cause Analysis of 450 MVA generator stator core fault
CHR. (CHRISTIAN) BOUWMEESTER - NETHERLANDS

A1-108 Impact of turbogenerator uprating on its transient response in case of grid events
LUIJ ROUCO - SPAIN

A1-109 Improved Generator Performance with a Nanocomposite High Voltage Insulation System for Stator Windings - A Status Report
J. R. WEIDNER - GERMANY

A1-110 Flexible Turbogenerator Converter System with Enhanced Grid Support Features - Design and Applications
K. CHAN - SWITZERLAND

A1-111 Voith Hydro's experience with the insulation aging
T. HILDINGER - GERMANY

A1-112 Loss reduction of salient pole synchronous generator damper winding by means of slot skew
J. ŠTUDIR - CROATIA

A1-113 Turbo Generator 4-pole 2235 MVA platform
P. LAFOSSAS - FRANCE

A1-114 Analytical and Numerical Computation of Wound Fields Synchronous AC Generators
S. BOUGHRARA - ALGERIA

A1-115 Calculation and Analysis of Dynamic Damper Bars’ Currents and Electromagnetic Force for a Generator/Motor Working as Synchronous Condenser
D.J. TAO - CHINA

A1-116 Development of Larger Output Indirectly Hydrogen-cooled Turbine Generator with High Heat Transfer Main Insulation
H. SAKO - SC A1
SC A1 ROTATING ELECTRICAL MACHINES
PS2: Asset Management of Rotating Machines

A1-201 Brazilian experience with the development and deployment of an online monitoring PD system on rotating machines based on virtual instrumentation
A.T. CARVALHO - BRAZIL

A1-202 Progress in Interpreting On-line Partial Discharge Test Results from Motor and Generator Stator Windings
H. SEDDING - CANADA

A1-203 Assessment of manufacture quality of stator windings insulation of rotating machines by means of macrographic analysis
RICARDO BAENA - SPAIN

SC A1 ROTATING ELECTRICAL MACHINES
PS3: Rotating Machines for Renewable and Dispersed Generation

A1-301 Development of a methodology for the design of axial flux Microgenerators
RICARDO CRIVICICH - ARGENTINA

A1-302 Reliability of electrical generators in wind turbines
A MCDONALD - UNITED KINGDOM

SC A2 TRANSFORMERS
PS1: Advances in Transformer Diagnostic and Monitoring

A2-101 Remote monitoring system and analysis of equipment performance for asset management
L.F. QUEIROZ - BRAZIL

A2-102 Determinants of Transformer Life and Sophistication of Deterioration Diagnosis Corresponding to Aging
T. KIDO - JAPAN

A2-103 Smart Monitoring of Power Transformers: Lessons Learned
T SAHA - AUSTRALIA

A2-104 New Online Vibro-Acoustic Tap-Changer Diagnostic Method - First Results and Practical Experience
M. FOATA - CANADA

A2-105 Denoising UHF signal for PD detection and location in transformers based on RBPF
C. K. CHOI - KOREA

A2-106 Advanced Dissolved Gas Analysis (DGA) Diagnostic Methods with Estimation of Fault Location for Power Transformer Based on Field Database
J.R. JUNG - KOREA

A2-107 PD Monitoring in service of Power Transformers for Condition Assessment
HUGO GAGO - SPAIN

A2-108 Diagnosing difficult transformer problems using online condition monitoring
S RYDER - UNITED KINGDOM

A2-109 Condition monitoring and diagnostic assessment of transformers
W ZHONGDONG - UNITED KINGDOM

A2-110 Transformer Health Index and Probability of Failure Based on Failure Mode Effects Analysis (FMEA) of a Reliability Centered Maintenance (RCM) Program
P. LORIN - SWITZERLAND

A2-111 Parameters influencing Partial Discharge Measurements and their Impact on Diagnosis, Monitoring and Acceptance Tests of Power Transformers
S. COENEN - GERMANY
A2-112  Assessment of Methanol as cellulose aging marker in mineral and ester oils
ML COULIBALY - FRANCE

A2-113  Expert System of Monitoring, Diagnostics and Control for Transformers (ESMDU_TRANS)
L. KONTOROVYCH - UKRAINE

A2-114  "Improvements of Large Power Transformer Condition Real Time Monitoring and Diagnosis Expert System - a Romanian Experience "
C. MOLDOVEANU - ROMANIA

A2-115  Interpretation of Results of Diagnostics of Power Transformers by Using the Frequency Response Analysis Method
S. DROBYSHEVSKI - RUSSIA

A2-116  Dynamic Behaviour of Fault Gases and Online Gas Sensors
S. TENBOHLEN - GERMANY

SC A2 TRANSFORMERS
PS2: EHV / UHV and EHV DC / UHV DC Transformers and their components

A2-201  Evaluation Method of VFT Stresses for Power Transformer Winding design - Interaction Experience between Manufacturer and Utility
A. VITA - BRAZIL

A2-202  Establishing Power Transformers Capability while under Geomagnetic Disturbances
R. GIRGIS - USA

A2-203  3 Phase 420 kV Shunt Reactor manufacturing and quality sensitivity for vibration control - A case study
VIJ AYAKUMARAN MOORKATH - INDIA

A2-204  The world's first 400 kV transformers filled with esters
G. PUKEL - AUSTRIA

A2-205  The proposal of permissible vibration level for power transformer and its accessories
W.H. CHOI - KOREA

A2-206  Short circuit design conception and validation of a 570 MVA, single-phase GSU-Transformer by SC-Withstand tests on a mock-up unit
JOSÉ PORRERO - SPAIN

A2-207  Advanced designs of variable shunt reactors with on-load tap-changers for wider regulation range
L. KIRCHNER - GERMANY

A2-208  Experience in operation with transformer 420 kV using natural Ester insulation liquid
R. FRITSCHIE - GERMANY

A2-209  No load long duration test experience to test the thermal performance of the transformer magnetic core
M. RYADI - FRANCE

A2-210  Research and Application of UHV AC Transformers and Shunt Reactors
X.N. WANG - CHINA

A2-211  Fast Controlled Shunt Reactor of Transformer type. Development and Application experience
A. ANTONOV - RUSSIA

SC A2 TRANSFORMERS
PS3: Transformer windings

A2-301  Accelerated Transformer Aging using Upgraded Kraft and Natural Ester Insulation System
A. LEMM - USA
V DAVYDOV - AUSTRALIA

A2-303 On-site replacement of OLTC, drying of winding insulation, induced voltage test with PD measurement of 250 MVA, 400/110 kV, 40 years old transformer
R. MALEWSKI - POLAND

A2-304 Experiences and innovations in transformer short-circuit current withstand testing
R.P.P. SMEETS - NETHERLANDS

A2-305 Design of 154kV power transformer using natural ester oil
B. H. BAE - KOREA

A2-306 A Study on Inflammable Gas Generation according to Small Gap Discharge within Floating Electrodes by Induced Voltage in Power Transformer
K. H. LEE - KOREA

A2-307 Dry-type subtransmission transformer: dry transformers for the 123 kV and 145 kV voltage class dry transformers for the 123 kV and 145 kV voltage class
M. CARLEN - SWITZERLAND

A2-308 Short-circuit testing of 66 kV / 31.5 MVA dry-type power transformer
M. CARLEN - SWITZERLAND

A2-309 Evaluation of the Thermal Performance of Transformer Windings by Numerical Investigations and Measurements
ST. TENBOHLEN - GERMANY

A2-310 Novel Thermal-Hydraulic Network Model for Shell-Type Windings. Comparison with CFD and Experiments
H CAMPELO - PORTUGAL

A2-311 Influence of the Lightning Impulse Shape on the Electrical Stresses on Windings Insulation of Power Transformers and Shunt Reactors
V. LARIN - RUSSIA

SC A3 HIGH VOLTAGE EQUIPMENT

PS1: High voltage equipment for emerging power system conditions

A3-101 Overview of Non-invasive Condition Assessment of T&D Switchgear
N. UZELAC - USA

A3-102 Reduction of the TRV for Terminal Circuit Breakers on Series Compensated Lines
B. SHPERLING - USA

A3-103 Survey on Requirements for Bus-transfer Current Switching
S. TSUKAO - JAPAN

A3-104 Voltage and Current Measurements for Smart Applications in Substations at Hydro-Québec
F. ZAVODA - CANADA

A3-105 Development of high voltage vacuum interrupter with earthed metal enclosure for the transmission line
J. S RYU - KOREA

A3-106 Development of HVDC Circuit Breaker with Fast Interruption Speed
B. C. KIM - KOREA

A3-107 Switching transients with simple transformer-line/cable configurations
A. (ANTON) JANSSEN - NETHERLANDS

A3-108 New test-methods for circuit breakers of 800kV and above
R.P.P. SMEETS - NETHERLANDS
A3-109 Test-circuits and testing of HVDC circuits breakers
R.P.P. SMEETS - NETHERLANDS

A3-110 Very fast transient over voltages on paper oil insulated inductive voltage transformers
JAVIER GARCÍA - SPAIN

A3-111 Inductive voltage transformers for auxiliary services power supply in substations. Design, specification and normative aspects and application example
ELOY RÉGIL - SPAIN

A3-112 Arresters with advanced cooling performance for protection of valves in HVDC converters
R. GOEHLER - GERMANY

A3-113 Environmentally Friendly Perfluoroketone-based Mixture as Switching Medium in High Voltage Circuit Breakers
J.D. MANTILLA - SWITZERLAND

A3-114 Detailed Analysis of livetanks, dead tanks and gas Circuit-Breakers using a new environmental friendly gas
S SILVANT - FRANCE

A3-115 Methodologies for pollution tests on composite housing
G. TESTIN - ITALY

A3-116 Transient behaviour of conventional and innovative capacitive voltage transformers: simulations and HV laboratory testing
C. SERAFINO - ITALY

A3-117 Research and Development of a Full-bridge Based Hybrid HVDC Circuit Breaker in Flexible HVDC Transmission Grid
G.F. TANG - CHINA

A3-118 The Establishment of Standard System for Accuracy Measuring on Harmonics of Electronic Voltage Transformers
X. LIU - CHINA

A3-119 Inadequate Damping Leading to Ferroresonance on Voltage Transformers: A Case Study
ALAA RAHMA - GULF STATES COMMITTEE

SC A3 HIGH VOLTAGE EQUIPMENT

PS2: Lifetimemanagementoftransmission&distributionequipment

A3-201 Challenges for managing overstresses and end of life of HV equipment
A.C. CARVALHO - BRAZIL

A3-202 Investigation on Contamination Deposit Performance and Pollution Withstand Voltage Characteristics of Polymer Devices
H. KAGAWA - JAPAN

A3-203 Transformation in Lifetime Asset Management of EHV Circuit Breakers - A Case Study
BALASAHEB DOIPHODE - INDIA

A3-204 Contactless thermal online-monitoring of electrical equipment under load to determine the load level and damage avoidance
T. GRAEF - GERMANY

A3-205 D-Watch - intelligent disconnector mechanism for digital substation
E. STELLA - ITALY

SC A3 HIGH VOLTAGE EQUIPMENT

PS3: Application of information technology tools for development & management of high voltage equipment

A3-301 Coupled Fluid-Mechanical Analysis Method in High-Voltage Circuit Breakers Design
C. Y. BAE - KOREA
A3-302 CFD analysis and numerical study of the hot gas flow inside the high voltage gas circuit breakers  
J. H. PARK - KOREA

A3-303 Reduced scale feasibility of temperature rise tests in substation connectors  
CARLOS ABOMAILEK - SPAIN

A3-304 Power quality enhancement through optimum combination of controlled switching and low scatter CB drives  
F. AIT-ABDELMALEK - FRANCE

A3-305 Development of mathematical and physical models for studying high-voltage resistive dividers in digital voltage transformers  
V.D. LEBEDEV - RUSSIA

**SC B1 INSULATED CABLES**

**PS1: Feedback from newly installed or upgraded cable systems**

E.F. KARABOLAD - BRAZIL

B1-102 Adoption of Premolded Joint and specialized cable installing method for the 275kV XLPE cable underground transmission line in a tunnel  
S. KOBAYASHI - JAPAN

B1-103 Transpower NZ North Auckland and Northland (NAaN) Project in Auckland, NZ  
R. RAHMAN - AUSTRALIA

B1-104 Field Experience on newly installed cable system in large metro cities of India  
DILIP M. MIRASHI - INDIA

B1-105 Mutual Inductive Interference of 400 kV Cable Systems  
R. MURATOVIC - AUSTRIA

B1-106 BC Hydro Experience to mitigate a hot spot along a 230kV XLPE cable circuit using a novel cooling solution  
S. CHERUKUPALLI - CANADA

B1-107 Development of AC 400kV XLPE Submarine Power Cable System  
S.B. LEE - KOREA

B1-108 Location of overvoltage limiters used for accessory protection to assure the insulation coordination of cable over-sheaths accessories of high voltage cable systems  
FERNANDO GARNACHO - SPAIN

B1-109 Cable system qualification process for the Italy - France HVDC intertie  
M. MARZINOTTO - ITALY

**SC B1 INSULATED CABLES**

**PS2: Best use of existing cable systems**

B1-201 Maintenance Strategies Developed for the Underground Transmission Systems of ISA - Interconexión Eléctrica  
J.C.R. LOPES - BRAZIL

B1-202 Utility Experience with Field Condition Assessment of High Voltage Underground Cable Systems  
E. BASCOM - USA

B1-203 Field Testing of high Voltage Cable: The Experience with AC Test on 115 kV Cables in MEA Thailand  
ASAWIN RAJ AKROM - THAILAND

B1-204 Using DTS Data to Establish Soil Thermal Resistivity Characteristics  
K. TANG - AUSTRALIA
B1-205 Learning from on-line monitoring of medium voltage power cables - with PD and fault location
E.F. STEENNIS - NETHERLANDS

B1-206 Measurements and FEA results of steel armour losses in three-core submarine XLPE cables
J.M. LEE - KOREA

B1-207 Improvement of Dissolved Gas Analysis Technique for Oil-Filled Cable Facilities and Practical Application of Gas Analysis Technique to XLPE Cable Facilities
M. SOGA - JAPAN

B1-208 Development of a robot for maintenance work in the spanish-french electrical interconnection tunnel
JAVIER AREVALO - SPAIN

B1-209 Sheath currents monitoring in high voltage isolated cables
ALEXANDRA BURGOS - SPAIN

B1-210 Transmission capacity management of subsea cables for the grid connection of offshore wind farms
C. RATHKE - GERMANY

B1-211 Maintenance strategies for MV/HV subsea cable networks
R GIUSSANI - UNITED KINGDOM

B1-212 Life Cycle Assessment (LCA) of a 380 kV double circuit HVAC cable transmission line
L. GUZZO - ITALY

B1-213 Belgian experience with real time temperature system in combination with distributed temperature sensing techniques
B. MAMPAEY - BELGIUM

J.Q. ZHANG - CHINA

B1-215 Submarine Cable Location. New technology - development and testing
C.E. HILLESUND - NORWAY

B1-216 Current Rating and Risk of Cavity-Induced Breakdown in Mass Impregnated Non-Draining HVDC Subsea Cables
M. RUNDE - NORWAY

B1-217 Application of Partial Discharge Diagnostic technique on High Voltage Cable sealing ends to predict catastrophic failures with supportive case study
K. SRIRAMAKAVACHAM - GULF STATES COMMITTEE

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**SC B1 INSULATED CABLES**

**PS3: Insulated cables in the Power System of the Future**

B1-301 A new voltage level for extruded DC cables
MARKUS SALTZER - SWEDEN

B1-302 Development of the Riser Cable System for Offshore Floating Wind Power Project
Y. TATENO - JAPAN

B1-303 Systematic Description of Dynamic Load for Cables for Offshore Wind Farms. Method and Experience
T. KVARTS - DENMARK

B1-304 Understanding losses in three core armoured submarine cables
FILIPE MIGUEL FARIA DA SILVA - DENMARK

B1-305 New transition joint for 132kV
BLAS NELSON GONZÁLEZ SARDI - ARGENTINA

B1-306 Use of aluminium for Cable Conductors and sheaths in EHV power cable systems
T. (TOMASZ) KOLTUNOWICZ - NETHERLANDS
B1-307  Effect of ultraviolet radiations and sandstorms on the flashover voltage of silicone rubber cable terminations  
L.S. NASRAT - EGYPT

B1-308  Simplified Undergrounding of 400 kV Overhead Lines with Superconducting Cable Systems  
M. STEMMLE - GERMANY

B1-309  After Laying Tests on Long HVAC and HVDC Extruded insulated Cable Systems  
F LESUR - FRANCE

B1-310  400kV - 2 x 1000MW Submarine Cable Crossing of the Dardanelles Strait  
F. KOKSAL - TURKEY

B1-311  Optimization of Sea Cable Structure Based on Load Carrying Capacity  
E.D. WANG - CHINA

B1-312  The world longest and deepest 430 kV XLPE submarine cable  
A STAMSAAS - NORWAY

B1-313  Thermal characterization of seabed along the NordLink cable route - results and comparison of measurements methods  
J.E. SIKKELAND - NORWAY

B1-314  Effect of Water Pipeline on Ampacity of Underground Cables: Case Study  
M. S. BAAZZIM - GULF STATES COMMITTEE

SC B2 OVERHEAD LINES

B2-101  HVDC transmission system associated to Belo Monte hydropower plant - studies and definitions applied to the basic design of a ±800 kV transmission line innovation and challenges for a new voltage level in Brazil  
M.C. ARAUJO - BRAZIL

B2-102  Increasing the transfer capacity of overhead lines on the connection of wind power plants, through correlation between climatic data and temperature of conductors at higher currents  
O. REGIS J R. - BRAZIL

B2-103  Prospective DC Conversion of a Major 345 kV AC Line  
B. MEHRABAN - USA

B2-104  Assessment of HTLS Conductors to Increase the Power Transfer in the Mexican Electric Transmission System  
R. CASTELLANOS - MEXICO

B2-105  Operational aspects of dynamic line rating. Application to a real case of grid integration of wind farms  
ANTONIO GONZÁLEZ - SPAIN

B2-106  Compact lines with pivoted insulated cross-arms. General stability design criteria  
PABLO RODRÍGUEZ - SPAIN

B2-107  A 500 kV HVAC circuit reconversion into a +/−500 kV HVDC bipole line in the Central Interconnected System (Chile)  
A. ALEGRIA - CHILE

B2-108  Verification of thermal rating calculations for high temperature low sag (HTLS) conductors  
T. FREHN - GERMANY

B2-109  Assessment on the ignition of electric arc and flashover distances between overhead transmission lines and the surrounding vegetation  
M. FORTELEONI - ITALY

B2-110  Monopole 220 kV tubular tower of steel tubes and cast steel without visible connections  
JONASSON ARNI BJ ÓRN - ICELAND

B2-111  Operation Experience of 1000 kV Ultra High Voltage AC Transmission Technology  
Y.B. SHU - CHINA
B2-112 Design Verification by Analysis of Transmission Lines Exposed to Large Topographic Variations, Temperature Changes and Extreme Ice Load Conditions
L.A. MOEN - NORWAY

B2-113 Design and engineering of a new 525 kV HVDC line in Norway
B. THORSTEINSSON - NORWAY

B2-114 Monitoring and forecasting ice loads on a 420 kV transmission line in extreme climatic conditions
L.A. MOEN - NORWAY

B2-115 Compact controllable 110 – 500 kV overhead lines
L. TIMASHOVA - RUSSIA

SC B2 OVERHEAD LINES
PS2: Project management, construction and maintenance

B2-201 Calculation Accuracy of High-Temperature Sags ACSR in Existing Lines
D. DOUGLASS - USA

B2-202 The Development of Electric Wires of High Tensile Strength and Corrosion Resistance, and Their Application to Renewal of 500 kV Long Span Transmission Lines Crossing the Strait
H. SASAKI - JAPAN

B2-203 Innovation in evaluating and managing the reliability of aged transmission structures
R KULKARNI - AUSTRALIA

B2-204 Execution Of Transmission Projects With Innovative Methods For Augmentation Of EHV Network In Mega City Of Mumbai - Challenges & Solutions
U.K. MAHARAJ A - INDIA

B2-205 A New Model for Developing, Constructing, Financing and Operating Major Transmission Projects in Alberta
E. GHANNOUM - CANADA

B2-206 A portable digital X-Ray system for the in-situ detection of ACSR broken strands at suspension clamps: field results and introduction onto Line Scout Robotic Technology
N. POULIOT - CANADA

B2-207 The new tower lifting method for the 345kV transmission lines
B. H. KIM - KOREA

B2-208 Research into an increased number of unexplained line outages of polymeric insulator sets used within the Czech transmission grid
JAN LACHMAN - CZECH & SLOVAK Reps.

B2-209 New methods to remove cost and reduce circuit outages during conductor replacement
S NEVE - UNITED KINGDOM

B2-210 novel HTLS thermo-mechanical model: applications to Italian OHTL
P. PELACCHI - ITALY

B2-211 Real Time Measurements for Online Monitoring and Intelligent Management of High Voltage Transmission Lines
C MOLDOVEANU - ROMANIA

B2-212 Field test of overhead line connector diagnostic method using the pulse current method
S.M. HELLESO - NORWAY

SC B2 OVERHEAD LINES
PS3: Application of new materials and technologies

B2-301 Innovation-Section: test-run for uprating 220 kV to 380 kV using insulated cross arms and coated conductors
K. REICH - AUSTRIA
B2-302 Testing Steel Lattice Towers with a Hybrid (Numerical / Experimental) Method
S. LANGLOIS - CANADA

B2-303 Development of Estimating Method for Conductor corrosion and High corrosion resistant Conductor for overhead transmission lines
N. SHIMIZU - JAPAN

B2-304 Appropriateness of concrete poles for 400 kV Wintrack II
A.J.P. (TON) VAN DER WEKKEN - NETHERLANDS

B2-305 Temperature Profile along an Overhead Line Conductor in and near the Tension Clamp
P.B. BUEHLMANN - SWITZERLAND

B2-306 Comparative Investigations of the Erosion Resistance and the Hydrophobicity Effects of Silicone Rubber used for Housings of AC and DC Insulators
F. SCHMUCK - SWITZERLAND

B2-307 CompactLine - a new Overhead Transmission Line Concept
S. BEHREND - GERMANY

B2-308 A new design of high voltage overhead line using composite poles
T RAULT - FRANCE

B2-309 Design, testing and installation of innovative 380 kV Dutton- Rosental towers
P. BERARDI - ITALY

B2-310 Development of Large Cross-Section Conductors for UHV DC Transmission Lines
K.J. ZHU - CHINA

B2-311 Proposals for additions to IEC requirements intended to verify quality of glass cap and pin insulators
K. HALSAN - NORWAY

B2-312 Spacer Damper Problems on Quad Bundle Lines in National Grid, Saudi Arabia
WALEEED AL-AMEER - GULF STATES COMMITTEE

B2-313 Corona noise comparison between the standard and surface treated conductors followed through with monitoring of a newly erected 400 kV line and with corona testing in high voltage laboratory
I. ROZMAN - SLOVENIA

SC B3 SUBSTATIONS
PS1: Advances in substation technology

B3-101 Non-Conventional Instrument Transformers for Improved Substation Design
L. KOJOVIC - USA

B3-102 Ceramic and Hybrid Support Insulators for UHVDC Systems
G. GOEDEL - AUSTRIA

B3-103 Substation Automation from Conventional to full Digital Technologies - Case Studies and Impact
PURSHOTTAM KALKY - INDIA

B3-104 High Power Underground Transmission for HV DC
H. KOCH - GERMANY

B3-105 170 kV pilot installation with a ketone based insulation gas with first experience from operation in the grid
T. DIGGELMANN - SWITZERLAND

B3-106 Application of a fluoronitrile gas in GIS and GIL as an environmental friendly alternative to SF6
D. GAUTSCHI - SWITZERLAND

B3-107 Dielectric testing of GIS RC-dividers for HVDC GIS/GIL substations with increased dielectric requirements
E. SPERLING - SWITZERLAND
B3-108 **Advanced insulation and switching concepts for next generation HV Substations**  
N. PRESSER - GERMANY

B3-109 **Basic features of the new 145kV metal-enclosed, SF6 gas insulated switchgear**  
D. GORENC - CROATIA

B3-110 **2nd generation DC grid access for offshore wind farms: “HVDC in an AC fashion”**  
P. MENKE - SC B3

B3-111 **Customer process for technical qualification of NCIT-products for high-voltage GIS applications**  
W OLSZEWSKI - FRANCE

B3-112 **First ABB PASS MOS 420kV installation in TERNA Substation**  
M. SPINELLI - ITALY

B3-113 **Pilot project principles for a digital substation**  
M. PETRINI - ITALY

B3-114 **An Autonomous Intelligent Robot for Electronic Equipment Inspection Used in Substation**  
L. LI - CHINA

B3-115 **High Frequency Current in the Power System and Its Influence on Transfer Accuracy of Electronic Current Transformer**  
C. ZHANG - CHINA

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**SC B3 SUBSTATIONS**

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B3-201 **Applying mixed technology switchgear (MTS) for adaptation of substations to meet new Brazilian power system requirements of availability**  
C.S.S. XAVIER - BRAZIL

B3-202 **Practical Considerations in Implementing an IEC 61850-based System in an Existing Transmission Substation**  
M. PIMENTA - USA

B3-203 **Integrating In-house IEC61850 Technology into Existing Substation: A Case of EGAT Substation Control System**  
VAWRAVIT KONGTHON - THAILAND

B3-204 **Countermeasures in a substations for large renewable energy adoption**  
K. UEHARA - JAPAN

B3-205 **Integrating IEC61850 into Existing Substations in MEA’s Distribution System**  
PICHIT J INTAGOSONWIT - THAILAND

B3-206 **Conversion Of A Conventional Substation To An IEC 61850 Based Automated Substation - A Case Study of 400KV Amreli Substation**  
N.M. SHETH - INDIA

B3-207 **50kV switchgear lost? Up & running in 30 hours solution!**  
P. (PIET) KNOL - NETHERLANDS

B3-208 **Bus-Node - A Novel Substation Concept**  
G.S. KOEPPL - SWITZERLAND

B3-209 **Implementation of Building Information Modelling (BIM) process in substation design software to increase design quality**  
M. KOKORUŠ - BOSNIA HERZEGOVINA

B3-210 **Mitigation of the Impact of Increasing Short Circuit Levels on Aging Transmission Substation Infrastructure in Ireland**  
J. DUNNEY - IRELAND

B3-211 **Integration of an IEC 61850 process bus in an existing substation**  
T BUHAGIAR - FRANCE
B3-212 Design and implementation of NTP and SNTP time synchronization using Ethernet architecture
NIRMAL NAIR - NEW ZEALAND

B3-213 Development of common technical requirements for monitoring and diagnostic systems to improve availability of substations
L.A. DARIAN - RUSSIA

B3-214 Completing the IEC 61850 substation - the need for metering
R. HUGUES - SC B3

SC B3 SUBSTATIONS

B3-301 RF Sensors Development and Condition Metric Development for Contaminated Substation Insulation
A. PHILLIPS - USA

B3-302 Current situation and Recent Challenges in Asset Management of Aging T&D Substation Facilities in Japan
T. KOBAYASHI - JAPAN

B3-303 Development of a Substation Fire Management Strategy and the implementation of Hypoxic Fire Prevention System
M VERRIER - AUSTRALIA

B3-304 Operational Experience In 1200kV (UHVAC) National Test Station, India
B.N. DE. BHOWMICK - INDIA

B3-305 Partial Discharge Diagnosis Method using Non-phase Synchronized UHF PD Pattern based on On-site Measurement Database for Substation
J.R JUNG - KOREA

B3-306 Experiences in Gas Insulated Substation tests, on factory and acceptance test on site after installation
M. GUZMAN - MEXICO

B3-307 Evaluation of the High Voltage Gas Insulated Substations (GIS) Based on Flashovers in the 220 kV Switchgears
ADEL EL FARASKOURY - EGYPT

B3-308 Removing risk of eventual discharges between GIS grounding parts and cable sheath connected to the substation earth through a separate grounding lead
FERNANDO GARNACHO - SPAIN

B3-309 Impact of Renewable Grid Code compliance on Substation design
JOSÉ MIGUEL GALLEGO - SPAIN

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C4-116 Electrochemical Energy Storage Systems and ancillary services: the Italian TSO’s experience  
G. BRUNO - ITALY 

C4-117 Impact of Photovoltaic Power Systems Control on Romanian Power Quality Measured in the Connection Common Points  
D. ILISIU - ROMANIA 

C4-118 Assessing Inverter Based Generation Exposure to Voltage Sags  
A SANTOS - PORTUGAL 

A. JABERT - JORDAN 

SC C4 SYSTEM TECHNICAL PERFORMANCE 

PS2: Challenges with modeling and evaluation of lightning performance and insulation coordination in the power system of the future 

C4-201 Application of the Leader Progression Model to evaluate the lightning performance of AC and DC EHV transmission lines  
P.M. MIGUEL - BRAZIL 

C4-202 Overview of statistical data on lightning outages of transmission lines in Japan  
M. MIKI - JAPAN 

C4-203 Economic Assessment of Lightning Performance Improvement of 69 kV Overhead Subtransmission Line on Monopole and Concrete Pole in MEA’s Power System  
ATT PHAYOMHOM - THAILAND 

C4-204 Overhead transmission lines lightning related performance study and investigation in Malaysia  
I. MOHAMED RAWI, M. Z. A AB KADIR - MALAYSIA 

C4-205 Assessment of Lightning Shielding Performance of a 400 kV Double-Circuit Fully Composite Pylon  
T. JAHANGIRI - DENMARK 

C4-206 Numerical investigations of transient voltages in high voltage networks related to Insulation Coordination  
S. PACK - AUSTRIA 

C4-207 Analysis of opportunities to improve the HVDC SwePol Link operation due to commutation failures  
M. PRZYGRODKI - POLAND 

C4-208 Investigating the Methodology and Implications of Implementing Long HVAC Cables in the Ireland and Northern Ireland Power System  
N. CUNNIFFE - IRELAND 

C4-209 Isolated systems interconnected via HV submarine XLPE cables  
G TREMOUILLE - FRANCE
C4-210 Switching transients on very long HV ac cable lines: simulations and measurements on the 230 kV Malta-Sicily Interconnector
F. PALONE - ITALY

C4-211 Electrical performance of 10 kV polymer insulator under lightning induced voltage condition
M.Z.A. AB-KADIR - MALAYSIA

C4-212 Effect of parallel 275 kV transmission line with oil pipeline on electromagnetic field calculation
M.Z.A. AB-KADIR - MALAYSIA

C4-213 Measurement Technology on Transient Processes of Lightning Striking Overhead Transmission Lines
S.J. XIE - CHINA

SC C4 SYSTEM TECHNICAL PERFORMANCE

C4-301 Simulating Single-Pole Opening Using a Detailed Protection Model and a Transient Stability Program
D. MACGREGOR - USA

C4-302 Development of surge simulation techniques based on the finite difference time domain method and its application to surge analysis
A. TATEMATSU - JAPAN

C4-303 Defining - and Computing the Margin in Critical Clearing Time: Eskom experience
FRANCO, LNF DE VILLIERS - SOUTH AFRICA

C4-304 "Shunt Compensation, Reliability Analysis and Condition Monitoring System measurements and simulations for an EHV mixed Overhead line - Cable connection
H. KHALILNEZHDAD - NETHERLANDS

C4-305 HVDC system modeling coherence between EMT and phasor domain tools
S. DENNETIERE - FRANCE

C4-306 Some meaningful example of sequence theory use limitation
R. BENATO - ITALY

SC C5 ELECTRICITY MARKETS AND REGULATION

C5-101 Aligning Regulatory Incentives and Price Signals in the Brazilian Wholesale and Retail Electricity Market
X. VIEIRA FO. - BRAZIL

C5-102 Market design of one hour ahead and real time market and implementation of cross-regional network operation in Japan
H. ASANO - JAPAN

C5-103 Is the regulatory regime of liberalised electricity markets appropriate for the future?
D SWIFT - AUSTRALIA

C5-104 A methodology for the analysis of market design at the horizon 2030
E CERQUIERA - UNITED KINGDOM

C5-105 New approach to congestion management for decentralized market coupling
I.V. BLINOV - UKRAINE

SC C5 ELECTRICITY MARKETS AND REGULATION

C5-201 Practices for Risk Assessment and Control in the Brazilian Electricity Market: state of the art
P.M. PATRICK - BRAZIL
C5-202 Market coupling, facing a glorious past?
R HIRVONEN - FINLAND

C5-203 The Importance of a Performance-Based Capacity Market to Ensure Reliability as the Grid Adapts to a Renewable Energy Future
G. VAN WELIE - USA

C5-204 HVDC Transmission Scheme for Sustainable Energy Supply
YING J JIANG-HÄFNER - SWEDEN

C5-205 Impacts of asset investment of renewable energy on market design and operation
K. OGIMOTO - J APAN

RONAYUT TEETONG - THAILAND

C5-207 Introduction of Sub-Hourly Market in Power Exchanges and Facilitating Large Scale Renewable Energy Integration in India
S.K. SOONEE - INDIA

C5-208 Preparation for implementation of a Capacity Mechanisms based on the cost based pool in the Korea electricity market
J.Y KIM - KOREA

C5-209 Regulatory structure and market model in Malaysia with the implementation of incentive bases regulations (IBR)
WAN ABDULLAH WAN SYAKIRAH - MALAYSIA

C5-210 Mexico`s Wholesale New Power Market
M.A. AVILA-ROSALES - MEXICO

C5-211 Restructuring of the Ancillary Services Market Arrangements on the island of Ireland to allow integration of higher levels of renewable generation
E. KENNEDY - IRELAND

C5-212 Capacity markets and the EU target model
G HAWKER - UNITED KINGDOM

C5-213 Capacity Remuneration Mechanisms: Results from a worldwide survey CIGRE Working Group C5-17
G. DOORMAN - SC C5

C5-214 Flow-based market coupling in the Central Western European region: Welcome to the market coupling 2.0
D GARREC - FRANCE

G. PETRETTO - ITALY

C5-216 Belgian Strategic Reserves – Implementation, Design Choices, and Market Outcome
H. HOSCHLE - BELGIUM

C5-217 Study of Key Issues for Direct Trading between Power Users and Plants
X. ZHANG - CHINA

C5-218 Capacity market. Change of the model shifting from deficit to excess
A. KATAYEV - RUSSIA

C5-219 Evaluating Regulatory Framework in Iran’s Electricity Sector: A Benchmarking Analysis
M. MOHAMMADI - IRAN

SC C5 ELECTRICITY MARKETS AND REGULATION

PS3: Distributed resource and demand response integration from the perspective of electricity market structures

C5-301 Evaluation of demand side management mechanisms and opportunities for their development in the Brazilian power industry
C. DORNELLAS - BRAZIL
C5-302 Experiences and Lessons Learned based on Distributed Generator of EGCO in Thailand Power Grid  
DR. GUMPANART BUMROONGGIT - THAILAND  

C5-303 Market Access for Renewables in the German Power Market and Market Design Challenges  
P. GIESBERTZ - NETHERLANDS  

C5-304 Comparison of market designs enabling DSR participation in the energy market  
B GUÉDOU - FRANCE  

C5-305 The impact of active demand on the electrical system and its actors estimated within the advanced project  
M. LOMBARDI - ITALY  

C5-306 Project SMART - lessons learned from the emergency DSR programmes involving residential consumers and the aggregator  
M. KRUPA - POLAND  

C5-307 DSO-TSO Interactions in Flexibility Contracting  
K. DE VOS - BELGIUM  

C5-308 The importance of market regulation in exploiting demand response on balancing market: Slovenian and Austrian case  
D. PARAVAN - SLOVENIA  

SC C6 DISTRIBUTION SYSTEMS AND DISPERSED GENERATION  
PS1: Integrated planning and operation for upgrading distribution networks  

C6-101 The growth of distributed generation in Brazil: opportunities, costs and difficulties found  
P.H.R.P. GAMA - BRAZIL  

C6-102 Messaging for Enterprise Distributed Energy Resource Management  
J. SIMMINS - USA  

C6-103 Learning from a 3.3 MW Utility Scale PV Plant Project  
T SAHA - AUSTRALIA  

C6-104 Dynamic distribution system planning considering distributed generation and uncertainties  
DANIEL FRANCO - ARGENTINA  

C6-105 A Probabilistic Monte-Carlo Simulation to Assess Distribution Network Reliability  
M. GAHA - CANADA  

C6-106 Advanced Self-Healing for Wide Area Power Outage and Network Reconfiguration for Feeder Uploading  
B. N. HA - KOREA  

C6-107 Impact of Distributed Energy Resources and Normally Open Switches on the Operational Performance of Low Voltage Distribution Networks  
EVANGELOS DIALYNAS - GREECE  

C6-108 An Adaptive Protection Infrastructure for Modern Distribution Grids with Distributed Generation  
GEORGIOS KORRES - GREECE  

C6-109 Protection coordination for distribution systems containing distributed generating units  
AHMED KAMEL - EGYPT  

C6-110 State estimation in MV distribution networks: experience in the Spanish smart grid project PRICE-GDI  
J OSÉ M. MAZA - SPAIN  

C6-111 Linear State Estimation in Low Voltage Grids Based on Smart Meter Data  
W. H. WELLSSOW - GERMANY  

C6-112 Intelligent control of online tap changer based on voltage stability margin estimation using local measurements  
H. FENG - GERMANY  

C6-113 South East Europe Distribution System Operators Benchmarking Study  
T. BARICEVIC - CROATIA
C6-114  Key findings of a study into the development of future GB systems integrating low carbon technologies and
smart solutions
J. KING - UNITED KINGDOM

C6-115  Impact of distributed generation on load shedding scheme in France: current status and perspectives
J. OTTAVI - FRANCE

C6-116  Technical-economic optimum development plan of the Distribution Network of Abidjan
S. AHOUSSOU - IVORY COAST - INDIVIDUAL

C6-117  Prosumers’ Battery Electrical Storage Systems: new ancillary services, impact on network planning and
operation
F. CAZZATO - ITALY

C6-118  Real field testing results of the innovative Medium Voltage control system developed in the Italian
Demonstrator of GRID4EU
D. STEIN - ITALY

C6-119  Linear Optimization for Active Distribution Systems Operation Considering Demand Response Mismatch
Y. WANG - CHINA

SC C6 DISTRIBUTION SYSTEMS AND DISPERSED GENERATION
PS2: Energy infrastructure for urban networks

C6-201  Local Adaptive Control of Solar Photovoltaics and Electric Water Heaters for Real-time Grid Support
B. BHATTARAI - DENMARK

C6-202  Towards Holistic Power Distribution System Validation and Testing - An Overview and Discussion of
Different Possibilities
T. STRASSER - AUSTRIA

C6-203  Optimized and Enhanced Grid Architecture for Electric Vehicles in Europe
S. UEBERMASSER - AUSTRIA

C6-204  Leveraging Smart Grids Assets for Building Smart Cities at Marginal Cost
REJI KUMAR PILLAI - INDIA

C6-205  Advancing the method of estimating the distribution system condition by utilizing smart meters
M. INAI - JAPAN

C6-206  Beyond Smart Meters: Management of the LV network
J. GARCÍA - SPAIN

C6-207  Navigating the complex world of Energy supply and demand
K. SINGH - UNITED KINGDOM

C6-208  Planning studies for active distribution grids in presence of EVs charging stations: simulation on a real test
grid
M. DI CLERICO - ITALY

C6-209  The Integrated Model for Marketing and Distribution Information - Integration Architecture, Implementation
and Validation
L. GE - CHINA

C6-210  Demonstrations of Communication Standards for Automated Demand Response and Smart Grid
J. YOSHINAGA - JAPAN

SC C6 DISTRIBUTION SYSTEMS AND DISPERSED GENERATION
PS3: Microgrids and offgrid hybrid systems

C6-301  NY Prize Community Grid Competition
S. VENKATARAMAN - USA
C6-302 Fast Demand Response as an Enabling Technology for High Renewable Energy Penetration in Isolated Power Systems  
M NEGNEVITSKY - AUSTRALIA

C6-303 No Load Diesel Application to Maximise Renewable Energy Penetration in Offgrid Hybrid Systems  
M NEGNEVITSKY - AUSTRALIA

C6-304 Business Cases for Isolated and Grid-connected Microgrids - Methodology and Applications  
G. JOOS - CANADA

C6-305 Decision to Interconnect Distributed Energy Resources into Distribution Networks  
S. S. CHO - KOREA

C6-306 Smart Region - Automation of Distribution System  
ZDENEK MÜLLER - CZECH & SLOVAK Reps.

C6-307 Battery Energy Storage Control Strategies for Deterministic and Stochastic Power Profiles  
A. OUDALOV - SWITZERLAND

C6-308 Smart grids for rural conditions and e-mobility - Applying power routers, batteries and virtual power plants  
V. BUEHNER - GERMANY

C6-309 Probabilistic Planning of Multi-Microgrids with Optimal Hybrid Multi-Generation sets  
E. GHIANI - ITALY

C6-310 The Hybrid Energy Storage System based on lithium-ion batteries and supercapacitors for Local Generation Systems  
A. NOVIKOV - RUSSIA

SC D1 MATERIALS AND EMERGING TEST TECHNIQUES

PS1: Compact Insulation Systems (AC and DC)

D1-101 Solid-gas insulation in HVDC gas-insulated system: Measurement, modeling and experimental validation for reliable operation  
R. GREMAUD - SWITZERLAND

D1-102 Interest of simulations to assess tests to be performed on DC GIS  
A. GIRODET - FRANCE

D1-103 Various Characteristics of GIS Insulation Systems and Test Method of Insulating Spacers for Residual DC Voltage  
S. OKABE - JAPAN

D1-104 Evaluation of small scale testing for high field conductivity of HVDC cable materials  
C. ANDERSSON - SWEDEN

D1-105 LONG TERM PERFORMANCE OF XLPE INSULATION MATERIALS FOR HVDC CABLES  
P.-O. HAGSTRAND - SWEDEN

D1-106 Study of dielectric properties of XLPE for HVDC cables during long-term ageing  
A. HASCOAT - FRANCE

D1-107 ZnO stress grading tape for stator windings for electrical machines located at  
L. DONZEL - SWITZERLAND

D1-108 DIELECTRIC PERFORMANCE BY ELECTRODE SURFACE PRETREATMENT AND MULTI-LAYER COATINGS IN GIS  
J. H. SON - KOREA

D1-109 Tracking and Erosion Tests for Composite Insulators under DC Voltage  
X.D. LIANG - CHINA

D1-110 Long-term performance of composite station insulators with larger diameters: laboratory tracking and erosion test vs. service experience  
I. GUTMAN - SWEDEN
D1-111 The Effect of Bird Streamers on the Insulation Strength of HVDC Lines
NISHAL, N MAHATHO - SOUTH AFRICA

D1-112 Performance of polymeric insulators in hybrid AC/DC overhead lines under polluted conditions
A. WAGNER - GERMANY

D1-113 GCCIA POLLUTION TEST STATION: An Optimizing Tool for Pollution Site Severity & Selection of Optimum Insulators Profile In Eastern KSA
AHMED AL-THAGAFI - GULF STATES COMMITTEE

SC D1 MATERIALS AND EMERGING TEST TECHNIQUES

PS2: New materials

D1-201 Electrical and thermal behaviour of synthetic transformer liquids
Q LIU - UNITED KINGDOM

D1-202 Preliminary study for use of vegetable esters in big power transformers
F. SCATIGGIO - ITALY

D1-203 The Thermal Stability of Al2O3 Modified Cellulose Insulation Paper
C. TANG - CHINA

D1-204 CHARACTERISTICS OF FLUORONITRILE/CO2 MIXTUR AN ALTERNATIVE TO SF6
K. POHLINK - SWITZERLAND

D1-205 Methodology to validate gases for switchgear applications
C PREVE - FRANCE

D1-206 Eco Friendly Thermoplastic Insulation for LV Switchgear Application
BEEMA THANGARAJAN AN R - INDIA

D1-207 Preparation of Exoergic Insulating Composite Material Using Electrostatic Adsorption Method
Y. MURAKAMI - JAPAN

D1-208 Comparative Investigation on Ester Insulating Liquids for High Voltage Applications
I. HOEHLEIN-ATANASOVA - GERMANY

SC D1 MATERIALS AND EMERGING TEST TECHNIQUES

PS3: Non-standardised stresses and emerging test techniques

D1-301 Developments for FRA automation
D TUSEK - AUSTRALIA

D1-302 Diagnostic control of oilpaper insulation based on method of “direct” measurement of paper moisture content
L.A. DARIAN - RUSSIA

D1-303 Development of a brand new spectrophotometric method for analysis of 2-furfuraldehyde in transformer oil as an indicator of paper degradation
JAVIER JIMÉNEZ - SPAIN

D1-304 CEMIG’s Experience at Dissolved Gas Analysis Applied to OLTC
C.D. SESSA - BRAZIL

D1-305 A study of liquid-immersed transformer reference insulation systems used to determine thermal class
H.M. WILHELM - BRAZIL

D1-306 A development of DC PD pattern recognition method using Modified CAPD together with PD finding for Gas insulated apparatus under DC voltage
J. Y. KOO - KOREA
D1-307 Influence of simultaneous and different pulse sources on PD patterns under DC voltage stress. Use of different approaches of clustering before generating PD patterns
MIGUEL A. SÁNCHEZ-URÁN - SPAIN

D1-308 A Review of Dielectric Strength with Distorted Lightning Impulses
RICARDO DÍAZ - ARGENTINA

D1-309 Insulation Evaluation of High-voltage Insulation Systems for Actual Overvoltage Waveforms and Practical Field Conditions
S. OKABE - JAPAN

D1-310 Correction of Errors of Large Impulse High Voltage Dividers with the De-convolution Method
Y LI - AUSTRALIA

D1-311 Investigation of mechanical strength for station post composite insulators subjected to variable loads
J. WANKOWICZ - POLAND

SC D2 INFORMATION SYSTEMS AND TELECOMMUNICATION

PS1: New applications to control power systems

D2-101 Smart: Intelligent and integrated platform for power operation centers
E. ROCHA N. - BRAZIL

D2-102 Implementation of PMU-Based Linear State Estimation into Energy Management Systems
A. BOSE - USA

D2-103 Leveraging Big Data and Modern Communication Protocols to Facilitate New Applications in Power Transmission and Distribution
S. RAVISH - USA

D2-104 Implementation of Information and Telecommunication Systems with the aim of Realization of Smart Grid in Japan
H. DOI - JAPAN

D2-105 Communications Infrastructure for Future Centralized Substation Protection and Control Systems
Y. LUSKIND - CANADA

D2-106 Implementation of Online Power System Network Analysis for the EMS in Korean Electric Power Control Center
Y. I. KIM - KOREA

D2-107 Results of applying a semantic interoperability strategy in Smart Grid applications for DSO in Mexico
A. ESPINOSA - MEXICO

D2-108 Classification of customers based on temporal load profile patterns
IGNACIO BENÍTEZ - SPAIN

D2-109 COCO: Construction Operational Control
ANDRÉS CADENAS - SPAIN

D2-110 Adding New Functions to the Energy Control System for Operating More Than a Decade in Taiwan
J. D. LEE - TAIWAN

D2-111 Ad-hoc WAMS - a Paradigm Shift
D. BRNObic - CROATiA

D2-112 Experiences from Intelligent Alarm Processing and Decision Support Tools in Transmission Smart Grid Control Centers
N. BARANOVIC - CROATIa

D2-113 Distributed control architecture for effective Distributed Energy Resources Management
G FOGGIA - FRANCE

D2-114 Leveraging big data analytics for customer engagement: the online and mobile solution adopted within the Enel Info+ project
M. LOMBARDI - ITALY
D2-115 Optimizing the Network and the Asset Lifecycle and Reduce Operational and Capital Costs through Predictive Analytics and Asset Health Management
S. HAGNER - SWEDEN

D2-116 Study and Practice of General State Estimation and Power Flow Hybrid Method for Modern Power Systems Control Center
Y.Q. YAN - CHINA

SC D2 INFORMATION SYSTEMS AND TELECOMMUNICATION

PS2: EPU response to evolving cyber security landscape

D2-201 Network Architecture and Cyber Security - Two Faces of the Same Coin
R. FERNANDEZ - AUSTRALIA

D2-202 Cyber Security Architecture for Operational Technologies (ICS/SCADA)
L. (LHOSSAIN) LHASSANI - NETHERLANDS

D2-203 Application and Management of Cybersecurity Measures for Protection and Control
D. HOLSTEIN - USA

D2-204 Application of Monitoring Standards for enhancing Smart Grids Security
G. DONDOSSOLA - ITALY

D2-205 Fuzzy Rule Based Expert System for SCADA Cyber Security
D. MLAKIC - BOSNIA HERZEGOVINA

SC D2 INFORMATION SYSTEMS AND TELECOMMUNICATION

PS3: Mobile operational applications, systems and infrastructure

D2-301 Wireless and Mobile Systems for Electric Power System Operation in Japan
S. MICHIWAKI - JAPAN

D2-302 Ensuring Uptime of WAMS Network with the Help of Common IT Tools - Case Studies
P.K. AGARWAL - INDIA

D2-303 Communication Networks for Indian Smart Grids
N.S. SODHA - INDIA

D2-304 Usefulness of AMI data communication systems to the development of Polish DSO smart MV and LV grids with regard to SCADA control systems
A. BABS - POLAND

D2-305 MAGIC - A Microgrid Agent Intelligent Control Device
NIKOS HATZIARGYRIOU - GREECE

D2-306 PLC MV telecommunications: An evolution path for sustainable private telecom networks enabling smart grid applications
TXETXU ARZUAGA - SPAIN

D2-307 IT and OT integration to improve outage management
J. STEPHENSON - UNITED KINGDOM

D2-308 Study on Evolution of Communication Infrastructure for Smart Grid Operation and Management
B.Y. HUANG - CHINA

D2-309 MPLS-TP AS IP TRANSPORT PLATFORM FOR CRITICAL SERVICES ON ELECTRICAL UTILITIES
H. CABRERA, J. RAMIREZ, O. BAUTISTA - VENEZUELA

D2-310 Communication network toward the realization of a new power distribution automatic control system
H. DOI - JAPAN
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