2010 CIGRE SESSION

TECHNICAL PROGRAMME

SC A1 ROTATING ELECTRICAL MACHINES

PS1: Developments in electrical machine design and experience in service

A1-101 ***Application of magnetic wedges for stator slots of hydrogenerators***

Z. MILOJKOVIĆ, J. POLAK, J. ŠTUDIR, M. PETRINIĆ, Z. MALJKOVIĆ

A1-102 ***Development and production of the world's largest capacity 2p-60 Hz-670 MVA and 4p-60 Hz-370 MVA hydrogen-cooled turbo-generators for a 60Hz-900 MW cross-compound thermal power plant***

H. KATAYAMA, M. KAKIUCHI, D. MURATA, S. NAKAYAMA, H. NAKAMURA, H. ITO

A1-103 ***Field verification of excitation control system with multi-input PSS via reactive power input for damping low-frequency power swing oscillations***

Y. KITAUCHI, H. MORITA, T. FUSE, E. TSUKADA

A1-104 ***Voltage control in wind farms: real experience and results***

E. FERNÁNDEZ-ANTÓN, J.C. PÉREZ-CAMPIÓN, C. COMBARROS-HERNÁNDEZ

A1-105 ***Formaldehyde emissions in large rotating electrical machines root cause analysis, background and prevention***

I. BERGMANN, R. DRAPER, F. RAMSAUER, G. LEMESCH

A1-106 ***Improvement of the voltage ride through capability of synchronous generators by excitation control***

L. ROUCO, C. GINET, K. CHAN, K. MAYOR, L. DÍEZ-MAROTO, R. CHERKAOUI

A1-107 ***Integration of a novel permanent magnet synchronous generator to utility grids using voltage sourced converter technology***

A. EDRIS, F. MCELVAIN, N. DANILOVIC, J. HELL, J. PINTER

A1-108 ***Experience in development and operation of new types of turbogenerators with vector type excitation system for wide-range reactive power control***

YU.G. SHAKARYAN, I.A. LABUNETS, P.V. SOKUR, T.V. PLOTNIKOVA, N.G. SHULGINOV, V.A. DIYACHKOV, YE.V. TUZLUKOVA, N.D. PINCHUK, I.A. KADI-OGLI, V.YE ZINAKOV

A1-109 ***Asynchronous generators as power systems' natural dampers***

K.R. ALLAYEV, G.M. FEDORENKO, V.I. POSTNIKOV, L.B. OSTAPCHUK

PS2: Lifetime management

A1-201 ***Optical system for hydrogenerator monitoring***

J.B. ROSOLEM, C. FLORIDA, J. SANZ

A1-202 ***Turbine generator 760 MVA supervisory system***

M.R. SINISCALCHI, C.L.M. PRATES

A1-203 ***Komati 9 AEG turbo-generator filtration run filter inspections***

K. NAIDOO

A1-204 ***Experience with continuous monitoring partial discharge testing in a predictive maintenance application of three similar hydro machines***

A. TABERNERO, B. BATLLE, O. MARTÍNEZ, A. VILLARRUBIA, S. RODRÍGUEZ, E. NAHARRO

A1-205 ***Field experiences monitoring partial discharges in rotating equipment***

J.C. CANO

A1-206 ***Detection of rotor winding shorted turns in turbine generators and hydrogenerators***

S.R. CAMPBELL, M. SASIC, G.C. STONE

A1-207 ***Improvement and uprating of turbo generator of high DAM hydro power plant in Egypt***

M. AWAD, A. ZEIT, D. FADL

A1-208 ***Challenges for the factory tests of an EPR range generator***

P. COULON, M. LICHTENBERGER, V. FERNAGUT, H. DEBRUYNE, L. DAVID, O. NICOLAS, M. BERLAMONT

SC A2 TRANSFORMERS

PS1: Transformer incidents in service

PS2: Transformer life

A2-212 ***Transformer life prediction using data from units removed from service and thermal modelling***

P. JARMAN, Z. WANG, Q. ZHONG, T. ISHAK

PS3: Transformer modelling

A2-301 ***Prediction of the oil flow and temperature distribution in power transformers by CFD***

S. TENBOHLEN, A. WEINLÄDER, R. WITTMAACK

A2-302 ***Modelling and measurements of VFT properties of a transformer to GIS bushing***

K. JOHANSSON, U. GÄFVERT, L. JOHANSSON

A2-303 ***Large generator step up transformers with low temperature hot spot for EDF nuclear power plants***

A. PRIETO, J. PORRERO, M. OLIVA, A. JALINAT

A2-304 ***Comparison of various approaches to transformer thermal modelling with direct temperature measurements***

O. ROIZMAN, V. DAVYDOV, A. PETERSEN, P. COLE, Y. ODARENKO

A2-305 ***Optimisation of transformer overload using advanced thermal modelling***

P. PICHER, F. TORRIANO, M. CHAABAN, S. GRAVEL, C. RAJOTTE, B. GIRARD

A2-306 ***Phenomena associated with switching capacitive currents in GIS substations and its effect on the winding of power transformer of a large power plant in Egypt***

M. AWAD, N. HEGGI, F. TAHON

A2-307 ***Transformer loadability based on directly measured hot-spot temperature and loss and load current correction exponents***

H. NORDMAN, O. TAKALA

A2-308 ***Determination of the stresses when energizing transformers: modelling of the electrical network and the transformer***

M. RIOUAL, T. NGNEGUEU, F. DEVAUX, S. NGUEFEU

A2-309 ***An insight into transformer winding response under the application of lightning impulse voltage***

C.C. ADALJA, M.L. JAIN

A2-310 ***CFD analysis and experiments of the winding with zig-zag cooling duct for power transformer***

J.Y. LEE, J.H. WOO, K.S. PARK, I.S. HWANG

SC A3 HIGH VOLTAGE EQUIPMENT

PS1: Development in HV equipment to cater for increasing system demands

A3-101 ***Use of modern technology to optimize switching of compensated lines***

T. JUNG, J.L. RAYON, F. AIT-ABDELMALEK, J. SAWADA, J. HOLLMAN

A3-102 ***Travelling waves at line fault clearing and other transient phenomena***

A.L.J. JANSSEN, D. DUFOURNET

A3-103 ***A diode based capacitor switch – a novel solution for power quality improvement***

M. GLINKOWSKI, E. DULLNI, M. BACKMAN, S. HALEN, D. CHU, H. MALAJ

A3-104 ***Special requirements on surge arrester design for UHV A.C. systems above 800 kV system voltage***

R. GÖHLER, K.-H. WECK, V. HINRICHSEN, M. CLEMENS, M. SCHUBERT, M. TUCZEK, R. APPEL

A3-105 ***1200 kV transmission network and development status of 1200 kV technology in India***

V. RAMAKRISHNA, R.N. NAYAK, M.C. BHATNAGAR, B.N. DE BHOWMICK, R.K. TYAGI

A3-106 ***Investigation of impact on short circuit current breaking condition in present high power transmission systems up to 500 kV***

K. IKEBE, Y. MAMETANI, T. SATO, J. KIDA, M. TOYODA, K. KAMEI

A3-107 ***Very fast transient overvoltages during switching of bus-charging currents by 1100 kV disconnector***

U. RIECHERT, W. HOLAUS, U. KRÜSI, D. SOLOGUREN

PS2: Lifetime management of HV equipment

A3-201 ***Adequacy of the short-circuit capabilities of a high voltage circuit-breaker in the context in which it is used***

R.E. CAMPOY, M.R. CEBREIRO

A3-202 ***Improving system and equipment performance by controlled switching***

A. CALAZANS, J.N. DE LIMA, N. VALENÇA, H.S. BRONZEADO

A3-203 ***Modelling the effect of maintenance on failure occurrence and lifetime management of high voltage circuit breakers***

C. NEUMANN, B. RUSEK, A. J. GAUL, C. SCHORN, S. FEDERLEIN, A. SCHNETTLER, G. BALZER, T. KRONTIRIS

A3-204 ***The extension of the remaining lifetime of 50 kV minimum-oil circuit breakers by cooperation of utilities and industries in the Netherlands***

T.G.M. VAN RIJN, F.S.W. DE VRIES

A3-205 ***An evaluation of the technical condition of the ageing electric equipment of electric power networks 110 – 750 kV in Russia. Making a decision about its further operation***

V.S. BOGOMOLOV, E.N. EFIMOV, A.S. HLYZOV, Y.N. LVOV, I.L. SHLEIFMAN, L.V. TIMASHOVA, N.V. YASINSKAYA, I.A. NAZAROV, S.Y. BATYAEV

A3-206 ***Reliability modelling of aged circuit-breakers using data from the design process***

T. LINDQUIST, U. ÅKESSON, C.E. SÖLVER

A3-207 ***Field measurements and modelling of high frequency transients during disconnect switch operations in EHV Substations. Assessment of their effects on current transformers***

M.D. DEL POZO, D.A. ESTEBAN, P.E. ISSOURIBEHERE, G.A. BARBERA, A. FUNES, A. LEDESEMA

A3-208 ***Experience of Egypt in management of ageing of high voltage substation equipment***

E. ELSHARKAWI, H. SAID, A. RAAFAT, S. ELREFAEI, D. ELAROUSI, M. BASYOUNI

A3-209 ***Switching overvoltage during disconnection of 765 kV reactor at substation la Arenosa in Venezuelan system***

A. VILLA

PS3: Prospects for introduction of new HV technologies

A3-301 ***Use of optical instrument transformers for high-voltage testing***

F. RAHMATIAN, D.F. PEELO

A3-302 ***New grading capacitors principle for high voltage circuit***

G. GAUDART

A3-303 ***Present status of high voltage vacuum circuit-breaker application and its technology***

K. IKEBE, H. IMAGAWA, T. SATO, H. ITO, M. KOSAKADA, Y. MATSUI

A3-304 ***Resistance to vapour permeation of factory new and of mechanically stressed composite hollow insulators***

V. HINRICHSEN, N. MÖHRING, T. WIETOSKA, H. HAUPT, A. BOCKENHEIMER, C. BERGER, I. GOTTSCHALK, N. KURDA, N. MIKLI, F. SCHMUCK, J. SEIFERT

A3-305 ***Short-circuit current limiter for electric network based on the magnetic-coupled reactor and fast-operating switch***

Y.G. SHAKARIAN, N.L. NOVIKOV, V.S. CHUPRIKOV, A.V. MALYSHEV, V.M. BATENIN, A.S. VESELOVSKY, A.V. KOZLOV, S.I. KOPYLOV, V.E. FORTOV, A.V. SHURUPOV, M.O. RAYCHENKO, S.V. UKOLOV

A3-306 ***Hybrid fault current limiters interaction with MV line differential relays and MV overcurrent relays***

J.M. ANICETO CALERO

A3-307 ***Towards a guide for testing emerging fault current limiters***

M. STEURER, B. MARCHIONINI, F. DARMAN, F. LAMBERT, M. NOE

A3-308 ***The challenge of SF6 gasless type switchgear for distribution and transmission voltage class in KOREA***

J.S. RYU, Y.K. KIM, S.J. TAK, S.W. PARK, J.B. KIM, C.W. PARK, M.S. KIM, W.P. SONG, H.S. LEE

A3-309 ***Testing of vacuum circuit breakers for transmission voltage and for generator current ratings***

R.P.P. SMEETS, S. KUIVENHOVEN, L.H. TE PASKE

A3-310 ***Design and construction of a Rogowski coil and a resistive shunt for detection and measurement of current impulse***

C. ROJO

SC B1 INSULATED CABLES

PS1: Technical challenges that have been overcome in newly installed underground and submarine cable systems

B1-101 ***Dynamic Rating of Transmission Cables***

E. JACOBSEN, J. F. NIELSEN, S.B. NIELSEN, S. T. SALWIN, J.U. PETERSEN, W. NOLDEN, K-H COHNEN

B1-102 ***The new technologies for replacement and uprating of EHV cable lines in Japan***

S. TSUCHIYA, T. KIGUCHI, M. NISHIUCHI, S. KATAKAI, T. NAKAJIMA, M. OWASHI

B1-103 ***Experiences in manufacturing, testing, installing and operating of 500 kV cable systems including PD monitoring***

A. AVILA

B1-104 ***HVAC submarine cable links between Italy and Malta. Feasibility of the project and system electrical design studies***

L. COLLA, M. GABRIELI, A. ILICETO, M. REBOLINI, B. ZECCA, P. GRIMA, J. VASSALLO, S. LAURIA

B1-105 ***200 kV DC extruded cables crossing the San Francisco Bay***

M. BACCHINI, R. GRAMPA, M. MARELLI, T. WESTERWELLER, D. PARQUET, S WEHN, D. LORDEN

B1-106 ***NorNed - world's longest power cable***

J.E. SKOG, H. VAN ASTEN, T. WORZYK, T. ANDERSRØD

B1-107 ***HV AC power transmission to the Gjøa platform***

M. JEROENSE, M. LARSSON-HOFFSTEIN, C. SONESSON, O. ELLEFSEN, T. TVEIT

B1-108 ***Transition joints for connection of fluid filled to extruded cables from 33 kV to 400 kV***

J.G. HEAD, R. LEWIS, D. QUAGGIA, H. GEENE

B1-109 ***Re-empowerment of 132 kV OF cables - Situation analysis***

A. VILLAFANE, L. BEITONE, A. MEDAGLIA, I. RUIZ

B1-110 ***Statistic of failures on underground high voltage power cables in Brazil***

C.D. PEIXOTO, E.K. FILHO, N.H.G.R. DE LOUREDO

B1-111 ***A novel method of restoring a 525 kV submarine cable following a catastrophic breakage of a termination at a cable landing site***

T. KOJIMA, S. CHERUKUPALLI, C. MCWHIRTER

B1-112 ***Insulation state analysis of existing AC 10 kV XLPE distribution cables in Jiangsu power grid of China***

X. CAO, Y. XU, Y. LIU, J. LIU, Z. ZHANG, Y. FEI

B1-113 ***Implementation and operation of a cable monitoring system in order to increase the capacity of a 220 kV underground cable***

M. SCHMALE, R. PUFFER

B1-114 ***Development of the HVDC ±250 kV MI submarine cable system in KOREA***

T.H. LEE, S.I. SHIM, S.Y. KIM, J.B. PARK, H.D. PARK, C.S. GO, I.H. LEE, S.I. JEON

B1-115 ***34,5 kV submarine cables from Playa del Carmen to Cozumel Island, Mexico. Corrosion specification and operative experiences***

H. A. FLORES

B1-116 ***Power loss and inductance of steel armoured three-core cables: comparison of "2.5D" FEA results and measurements***

J.J. BREMNES, G. EVENSET, R. STØLAN

B1-117 ***New in land cable installation***

P. ANDERSSON, L. CARLSSON, M. JEROENSE, K. NILSSON

B1-118 ***Fixing arrangements and accessories for flexibly installed HV cable systems in underground cable tunnels***

A. BOOTH, A. HANEKOM

PS2: Key factors in current and foreseen development of cable systems

B1-201 ***Minimising the impact on water resources when making, installing and operating an underground high voltage cable system***

P. MIREBEAU, P. ARGAUT, L. BÉNARD

B1-202 ***Study of direct burial of high voltage underground cables***

P. HONDAA, N. BOUDINET, X. BOURGEAT, C. MOREAU

B1-203 ***Assessment and technical trend for high reliable XLPE cable accessories for transmission line in Japan***

S. TSUCHIYA, S. UMEDA, S. NISHIKAWA, K. KIGUCHI, S. GOTOH, G. OKAMOTO

B1-204 ***Upgrading of existing 400 kV FF HV cable link by redesigning and implementing forced cooling apparatuses in Vienna***

G. SVEJDA, M. WANDA, R. GASPARI, M. BECHIS

PS3: State-of-the-art and trends for cable system testing

B1-301 ***Full-scale test on a 100 km, 150 kV AC Cable***

F. FARIA DA SILVA, W. WIECHOWSKI, C. LETH BAK, U. STELLA GUDMUNDSDOTTIR

B1-302 ***A new concept for test equipment for testing large HV and UHV cables on-site***

P. MOHAUPT, A. BERGMAN

B1-303 ***Experience of withstand testing of cable systems in the USA***

R.N. HAMPTON, J. PERKEL, J.C. HERNANDEZ, M. BEGOVIC, J. HANS, R. RILEY, P. TYSCHENKO, F. DOHERTY, G. MURRAY, L. HONG, M.G. PEARMAN, C.L. FLETCHER, G.C. LINTE

B1-304 ***On-site commissioning test and diagnostics of 220 kV XLPE cable system***

M.M. AWAD, F. TAHOUN, A. EL FARASKOURY, O.E. GOUDA

B1-305 ***Use of on-line UWB PD techniques to evaluate a 161 kV underground cable after repetitive joint failures***

V.R. GARCIA-COLON

B1-306 ***Partial discharge monitoring system for high voltage cables***

F. GARNACHO, M.A. SANCHEZ URAN, F. ALVAREZ, J.L. VALLEJO, A. GUERRA

SC B2 OVERHEAD LINES

PS1: Managing the environmental impact of new and existing overhead transmission lines

B2-101 ***Managing the environmental impact when uprating an existing OHTL: sharing of a Belgian experience with the installation of ACCC***

J-F. GOFFINET, S. GERMAIN

B2-102 ***Urban overhead transmission lines of compact design for 69,138 and 230 kV***

J.N. HOFFMANN, R.W. WIEDMER, M.J. BUBNIAK, I.S. MOREIRA

B2-103 ***Composite based overhead line systems - Reducing the visual impact of overhead lines***

T.K. SOERENSEN, J. HOLBOELL, G. KYED

B2-104 ***Conception of a 400 kV overhead line "sustainable development"***

F. SAUVEGRAIN

B2-105 ***Effective land use with special towers for increasing transmission capacity and tower height***

K. SUZUKI, S. ROKUTANDA, S. ITODA

B2-106 ***400 kV compact lattice structure tower designed in DUBAI in the restricted corridors. Effects of electric and magnetic fields***

S. AL JALLAF, J. GEORGE, G. GHEORGHITA, E. DRAGAN, D. MARGINEAN

B2-107 ***Overhead lines in protected swampy areas in Austria - „Extended Ecology“ as basis for OHL planning***

A. HAGEN, F. LENGLACHNER, S. ABERLE, H. MINICHBERGER, H. LUGSCHITZ

B2-108 ***Performance of HVDC transmission lines in Brazil - analysis of field data and calculation methods***

L.A.M.C. DOMINGUES, J.I. SILVA FILHO, V.H. ANDRADE, F.C. DART, A. MPALANTINOS NETO

B2-109 ***Audible noise levels of transmission overhead lines standard configurations EHV (Extra High Voltage) operated in the Czech Republic and Slovak Republic***

J. ŠVEC, J. TLUSTÝ, J. LAGO

B2-110 ***Use of reduced visual impact designs on 220 kV and 400 kV overhead lines in Ireland and their integration into the landscape***

J. DOYLE, C. Ó LUAIN

B2-111 ***EMF mitigation characteristic for 154 kV transmission tower using compact insulation arm***

D.I. LEE, S.Y. LEE, I.H. CHOI, W.K. LEE

B2-112 ***Development of a compact bipole 380 kV overhead line***

J.F. VAN WOLVEN, T. VAN DER WEKKEN, H.E. HOEKSTRA

B2-113 ***Potential reduction of audible noise from new and aged overhead transmission line conductors by increasing their hydrophilicity***

U. STRAUMANN, H.J. WEBER

PS2: Increasing the power capacity of existing overhead lines by conversion of AC to DC or by increasing the voltage level

B2-201 ***Analysis of the possible conversion of overhead electrical lines from alternating current to direct current***

L. COLLA, S. MALGAROTTI, M. REBOLINI, U. ZANETTA

B2-202 ***Upgrade transmission line corridor Portile de Fier – Resita – Timisoara – Arad by transforming existing 220 kV double circuit lines***

G. VISAN, L. IACOBICI, S. WECHSLER, D. MARGINEAN, A. COPOIU, L. OPREA

B2-203 ***Technical and economic incentives for AC to DC line conversion***

L.O. BARTHOLD, R. ADAPA, D.W. WOODFORD

B2-204 ***Experimental flashover research on switching surge of 750 kV single circuit compact transmission line tower***

Y.C. YUAN, L. LIU, J.Y. GUO, C. DENG

B2-205 ***Design and testing of overhead lines supporting structures in view of the highest demands regarding compaction, AC/DC upgrade and uprating***

R. STEPHEN, J. DIEZ-SERRANO, Q. CAI, D. MUFTIC, S. DIMOV

PS3: Assessment of overall electrical and mechanical availability of OHL

B2-301 ***Cancelled - An innovative strategy to prevent cascading failures of existing overhead transmission lines***

C. HARDY, F. LÉGERON, L. BINETTE

B2-302 ***Structural analysis for transmission lattice steel tower in the 400 kV transmission lines El Tablazo – Cuatricenteneario No. 1 and 2***

C.J. GARCÍA-ALAMO, J. PALACIOS

B2-303 ***Impact of turbulence on vortex induced vibrations and fatigue of conductors: modelling and real span experimentation***

G. DIANA, M. BELLOLI, P. BOUSSEAU, S. GUGLIELMINI

B2-304 ***Numerical modelling of a transmission line cascade with a load reduction device (LRD)***

A. HALDAR, M. VEITCH

B2-305 ***Robotics applied to power line inspection and maintenance: Hydro-Quebec’s experience and future applications***

S. MONTAMBAULT, N. POULIOT, R. DANSEREAU

B2-306 ***The life extension policy of overhead lines***

P. GRAND

B2-307 ***Investigation of electrical tree characteristics developed in composite insulation using RGB color coding techniques***

M.H. ABDERRAZZAQ

B2-308 ***Methods of use of climatic conditions data for assessing climatic loads for OHL***

V.A. LUGOVOI, S.V. CHERESHNYUK, L.V. TIMASHOVA

B2-309 ***Assessment of OHL availability and residual life-time by using non destructive instrumental control for conductors, steel wires and guys***

V. VOLOKHOVSKY, A. VORONTSOV, D. SUKHORUKOV, B. MEKHANOSHIN, V. SHKAPTSOV

SC B3 SUBSTATIONS

PS1: New techniques/New design of substations

B3-101 ***Development of an 800 kV HVDC station post design based on the long-term experience with composite line post insulators***

C. ARMSCHAT, J.C. STANKEWITZ, K.O. PAPAILIOU, S. THADDEY, F. SCHMUCK

B3-102 ***1200 kV AC products and substations: requirements, design and performance experience***

R. GOEHLER, D. HELBIG, L-R. JAENICKE, E. KYNAST, G. LINGNER, B. RAETH, J. SCHMID, G. SRINIVAS, N. TRAPP

B3-103 ***Optimized gas insulated lines for bulk power transmission***

M. BERNARD, A. GIRODET, F. BIQUEZ, J-L. RAYON, J-F. PENNING, A. FICHEUX

B3-104 ***Pilot installation of a 380 kV directly buried gas insulated line (GIL)***

C. NEUMANN, I. JÜRGENS, J. ALTER, S. PÖHLER

B3-105 ***Megacity underground substation technical requirements and implementation experience***

S.TSUKAO, T. SATO, H. IMAGAWA, K. SASAMORI, T. YOKOTA, M. ONO

PS2: Existing substations, new challenges

B3-201 ***Issues embedding series compensation in interconnection central system (SIC) of Chile***

J. VARGAS, L. VASQUEZ

B3-202 ***Management of current and voltage limits in RTE's substations***

A. PARISOT

B3-203 ***New selection and separation system for a very fast recover into service of a 380 kV Italian aerial-cable line***

C. SABELLI, L. CACIOLLI, G. BRUNO, M. GENSINI, A. MONTELATICI

B3-204 ***Application of technologies for uprating and upgrading of substations in Japan***

H. IMAGAWA, T. KOBAYASHI, T. SATO, K. UEHARA, K. SASAMORI, A. OKADA

B3-205 ***Environmental analysis of different technologies for a Swiss high-voltage substation***

C. LINDNER, L. TREIER, F. MEYER, K. POHLINK, T. DARDEL, Y. KIEFFEL, I. HUET

B3-206 ***Experimental investigations to the joint resistance of bolted substation and transmission line connectors and its conformity review to test standards***

L. BILY, S. GROSSMANN, G. MOUSTAFA, R. KLEVEBORN, L. CHARLSHEM

B3-207 ***Evaluation of old substation porcelain insulators in service: input for risk assessment and replacement options***

I. GUTMAN, J. ERIKSSON, D. HÜBINETTE, A. MJELVE, T. OHNSTAD

B3-208 ***Cancelled - ISCM, integrated substation condition monitoring***

N. KAISER, R. WOLF, C. CHARLSON, D. KERR

B3-209 ***Equipment for the detection and location of partial discharges in real time in substations***

J.E. SALCEDO, W.J. FERRANDIZ, E. HOLLMAN, A. IOZZIA

B3-210 ***Thermal-resistant aluminium-alloy conductor: an alternative for bus uprating of substations***

F.N. FRAGA, B.A. NASCIMENTO, R.L.S. VELOSO, R.O. MELO, A.V. GODOY

B3-211 ***Planning for continuity of reliable power supply to Mumbai mega city***

A. RAJE, D. RAINA, P. MURUGAN

B3-212 ***Performance evaluation of insulator creepage extender at heavy magnetite polluted 230 kV substation***

M. REZAEI, M. OSKOUEE, M. SHARIATI, S. AGAH, A.S. DEZFULI

B3-213 ***Upgrading of the short-circuit power of a 400 kV substation: problems to cope and possible solutions in a unified context***

E. CARLINI, M.L. CROCIANI, D. FALORNI, A. FREDDO, V. IULIANI

B3-214 ***Application of new asset management methods to sub-transmission networks in Mexico***

M. SCHWAN, M. ESQUIVEL, C. NABTE, S. SÁNCHEZ, E. ARROYO

B3-215 ***GIS substation maintenance combined with uprating***

A.V. MAYOROV, V.I. ROGOV, L.J. SHUR, G.M. VERULIDZE, I.V. BABKIN, A.S. PELTS

PS3: New secondary system challenges in substations

B3-301 ***"Smart Switchgear" using IEC Standard 61850 - First experience gained with a pilot project in a 380/110 kV substation***

J. HAUDE, B. WÜHRMANN, U. SUNDERMANN, A. HENDORF, C. HOGA, M. MAINKA, K. SCHWARZ, F. STEINHAUSER, T. SYBEL

B3-302 ***Intelligent compact substation of power distribution***

J.M. BYEON, J.G. LEE, S.W. LEE, Y.G. KIM

B3-303 ***Verification and maintenance procedures for IEC 61850 substations***

N. ETHERDEN, G. KIMSTEN, V. TIESMÄKI

B3-304 ***Case study : implementation of IEC 61850 in Java-Bali transmission system***

F. TRAFIANTO, N. ERDIANSYAH

B3-305 ***Innovative revenue metering with existing protection rated instrument transformers to enable new metering challenges***

M. VAN DER MEIJDEN, M. VAN RIET, G. RIETVELD, F. BALDINGER

B3-306 ***Impact of the IEC 61850 process bus on substation design***

A. APOSTOLOV

SC B4 HVDC AND POWER ELECTRONICS

PS1: Developments in HVDC and FACTS technology

B4-101 ***Trans bay cable – world's first HVDC system using multilevel voltage-sourced converter technology***

T. WESTERWELLER, U. ARMONIES, A. ORINI, D. LORDAN, R. HILLMAN, B. RAILING

B4-102 ***The Xiangjiaba-Shanghai 800 kV UHVDC project - Status and special aspects***

V.F. LESCALE, U. ÅSTRÖM, W. MA, Z. LIU

B4-103 ***Concept to design – Multi-terminal at 800 kV HVDC: NER/ER – NR/WR interconnector - I project in India***

A. KUMAR, V.F. LESCALE, L-E. JUHLIN, R.K. CHAUHAN

B4-104 ***Characteristics and benefits of modular multilevel converters for FACTS***

M. PEREIRA, A. ZENKNER, M. CLAUS

B4-105 ***Technical feasibility and research and development needs for ± 1000 kV and above HVDC system***

R.N. NAYAK, R.P. SASMAL, Y.K. SEHGAL, M. RASHWAN, G. FLISBERG

B4-106 ***Viklandet and Tunnsjødal SVCs – Design, project execution and impact on grid utilization***

M. MEISINGSET, O. SKOGHEIM, B. EKEHOV, K. WIKSTRØM

B4-107 ***The use of a static synchronous series compensator (SSSC) for power flow control in the 220 kV Spanish transmission network***

D. ALVIRA, J. BOLA, E. PRIETO, L. CORONADO, I. FUENTE, M. MARQUEZ, M. TORRE, G. QUEIJO, F. SOTO, M.A. RODRIGUEZ, J. CHIVITE, A. HERNÁNDEZ, S. ÁLVAREZ

B4-108 ***Reliability study methodology for HVDC grids***

K. LINDÉN, B. JACOBSON, Y. YANG, J. LUNDQUIST

B4-109 ***Continental overlay HVDC-grid***

G. ASPLUND, B. JACOBSON, B. BERGGREN, K. LINDÉN

B4-110 ***HVDC VSC transmission with cascaded two-level converters***

B. JACOBSON, P. KARLSSON, G. ASPLUND, L. HARNEFORS, T. JONSSON

B4-111 ***A new hybrid voltage-sourced converter topology for HVDC***

C.C. DAVIDSON, D.R. TRAINER, C.D.M. OATES, R.W. CROOKES, N.M. MACLEOD

PS2: HVDC and FACTS - Operating experience and new projects

B4-201 ***Comparison of active filters topologies in medium voltage distribution power systems***

V.F. CORASANITI, M.B. BARBIERI, P.L. ARNERA, M.I. VALLA

B4-202 ***Aysén-SIC HVDC transmission system: planning studies***

G. OLGUIN, J.C. ARANEDA, R. LA FUENTE

B4-203 ***HVDC VSC (HVDC Light) transmission – operating experiences***

S. DODDS, B. RAILING, K. AKMAN, B. JACOBSON, T. WORZYK, B. NILSSON

B4-204 ***The Rómulo project, Spanish peninsula – Mallorca (243 km, 250 kV, 2x200 MW): first Spanish HVDC link***

J. PRIETO, R. GRANADINO, E. BETTEN, G. CURTOTTI, H. WEINKAUF, C. VELÁZQUEZ

B4-205 ***FACTS for enabling wind power generation***

P. MUTTIK, J. HADDOW, C. CHALMERS, G. GUM GEE, N. PAHALAWATTHA

SC B5 PROTECTION AND AUTOMATION

PS2: Impact of renewable generation and cogeneration on substation automation and protection

B5-207 ***Optimal control of microgrid resources***

M. KROK, A. PALIZBAN, S. ALLEN, C. YIU, D. FINNEY, M. ADAMIAK

B5-208 ***Impact of renewable generation on protection and disconnecting solutions – German practice and experiences***

H-J. HERRMANN, H. KÜHN, H. FÖHRING, A. LUDWIG, P. SCHERGNER

B5-209 ***Islanding detection using an accumulated phase angle drift measurement***

R.M. TUMILTY, H.T. YIP, A. DYSKO, G.M. BURT

SC C1 SYSTEM DEVELOPMENT AND ECONOMICS

PS1: Solutions for planning power systems for a low carbon energy future

C1-101 ***Bilateral electric energy control; a new control concept of the grid for low carbon energy future***

T. NITTA, Y. SATOH, Y. MITANI, H. SAITOH, N. HIGUCHI, H. OHASHI

C1-102 ***First transmission grid plan with strategic environmental assessment in Portugal: added value to the electric system***

M. PARTIDÁRIO, J. RICARDO, J. PERALTA, M. PINTO, B. AUGUSTO

C1-103 ***Grid integration of offshore windfarm Côte d'Albatre to the French transmission grid***

D. MUSHAMALIRWA, M. DESCHATRES, T. WEBER, C. HILBERG, P. MAIBACH, W. JANSSEN, T. LESKE, S. KEHRER, D. SAINT-ANDRE

C1-104 ***European wind integration study EWIS – towards a successful integration of wind power into European electricity grids***

L. DALE, L. FISCHER, D. KLAAR, J-M. RODRIGUEZ, H. VANDERBROUCKE, W. WINTER

C1-105 ***Prospects for the transmission planning in Europe towards a sustainable energy future: the REALISEGRID project***

G. MIGLIAVACCA, A. L'ABBATE, I. LOSA, S. GALANT, A. VAFÉAS, G. FULLI, H. AUER, M. GIBESCU, A. CIUPULIGA, K. JANSEN, K. REICH, E. CARLINI, P. ADAM

C1-106 ***Multi-energy transmission – an option for system development ?***

P. FAVRE-PERROD, T. KRAUSE

C1-107 ***The Brazilian market-based expansion and low carbon energy future - issues and solutions***

J.C. MELLO, M.R. SOUZA, F.V. MOREIRA, T.M. PRANDINI, S. ARECO

C1-108 ***Reliability assessment and planning of power generation systems for low emission energy performance***

E.N. DIALYNAS, L.G. DAOUTIS, J. KABOURIS

C1-109 ***An innovative methodology of network planning within the national grid transmission system***

B. TAN, L. FU

C1-110 ***A comprehensive approach for studying the economic and reliability impacts of greenhouse gas policies***

S. VENKATARAMAN, H. ELAHI, A. CHAHAL, J. LOVE

PS2: New business processes to support / facilitate pwer system design for a low carbon energy future

C1-201 ***Research on large-scale wind power exploitation and long distance transmission planning method***

J. DEXIANG, B. JIANHUA, X. SONGXU

C1-202 ***A novel transmission system planning method combining market simulations and load flow calculations for identifying bottlenecks in systems with large RES penetration***

P.G.H. JACOBS, A. MAHES, A.R. CIUPULIGA, R.A. VAN OFFEREN, E. PELGRUM, C.P.J. JANSEN

C1-203 ***Spatio-temporal correlations of available wind power and impact on transmission power flows***

K.R.W. BELL, D.C. HILL, D. MCMILLAN, G.W. AULT, D.G. INFIELD

C1-204 ***Feasibility aspects of a synchronous coupling of the IPS/UPS with the UCTE***

M. LUTHER, A. MENZE, J.M. RODRIGUEZ-GARCIA, D. PREOTESCU

C1-205 ***Grid Asset Management Suite (GAMS) for improved control of network cost and quality of supply***

M. SCHWAN, T. GLÜCKSELIG, C. HEUER, S. MAUSER, B. BECKETT

C1-206 ***A mathematical structure for the assessment of transmission system augmentation in the Australian national electricity market***

N. HOSSEINZADEH, M.R. HESAMZADEH, D. BIGGAR

C1-207 ***Assessing the market benefits of network augmentations in the presence of wind farms***

D. BONES, L. STEEN, S. CLARK, T. MILLER, C. PARKER, D. SWIFT, J. SPURIO

C1-208 ***Wind farms as a source of uncertainty in a process of power system development planning – causes and effects***

K. LIPKO, W. LUBICKI, M. PRZYGRODZKI

C1-209 ***Optimal storage location and layout in power supply systems***

F.J. ADAMEK

PS3: Asset management challenges/strategies (replacement, refursbishment and maintenance) for a low carbon energy future

C1-301 ***On uncertainties of reliability indices***

F. CAMARA NETO, M.TH. SCHILLING, A.M. LEITE DA SILVA, M.A.N. SILVEIRA, A.M. REI

C1-302 ***Large scale integration of renewable sources in the Brazilian bulk power system***

I. GARDOS, R.D. FURST, P. GOMES, A. BIANCO

C1-303 ***Long-term grid planning in the Netherlands***

P.G.H. JACOBS, M.A.M.M. VAN DER MEIJDEN, F.J.C.M. SPAAN, I. J. TIGCHELAAR

C1-304 ***The connection procedures for renewable generation within the transmission grid planning process. Situation and prospects in the Iberian power systems***

J. F. ALONSO LLORENTE, A. REIS RODRIGUES

C1-305 ***Analysis on integrating large scale wind power into power grid***

J. ZHAO

C1-306 ***The challenge of reducing energy losses in the electricity transmission system – RTE's approach and objectives***

E. JAUSSAUD, F. CLERC, D. COISNARD

C1-307 ***Increasing the efficiency of electrical networks in regulated markets considering uncertainties***

K. MEISA, T. PAULUN, H-J. HAUBRICH, F. BERGER

SC C2 SYSTEM OPERATION AND CONTROL

PS1: Enhancement of operational reliability

C2-101 ***Using heuristic search procedures to determine fluent restoration paths for the Brazilian interconnected power system***

F.R.M. ALVES, R.M. HENRIQUES, J.A. PASSOS FILHO, A.P. GUARINI, D.M. FALCÃO

C2-102 ***Wide-area coordinated and adaptive damping control of multiple HVDC links in China southern power grid***

C. LU, Y. HAN, X. WU, L. LI, J. WU

C2-103 ***Performance evaluation for K-WAMS under field operating condition of Korea power grid***

S.T. KIM, Y. KIM, S. SONG, Y.H. MOON, H. KIM, S.H. JANG, S.W. HAN, B. LEE

C2-104 ***Enhancing operational reliability of the UPS of Russia using automatic emergency control***

N.G. SHULGINOV, A.V. ZHUKOV, A.T. DEMCHUK, L.A. KOSHCHEYEV, P.Y. KATS, M.A. EDLIN

C2-105 ***Low frequency oscillations in the Colombian power system - identification and remedial actions***

O.J. ARANGO, H.M. SÁNCHEZ, D.H. WILSON

C2-106 ***Experience of the Belgian and French TSOs with the use of a real-time dynamic rating system called "Ampacimon"***

E. CLOET, J-L LILIEN, P. FERRIÈRES

C2-107 ***Design and implementation of a tool for assessment of secure level of wind on the Irish power system***

R. AHERNE, J. CONROY, D. CONNOLLY, R. DOYLE, I. DUDURYCH, H. JONES, A. ROGERS

C2-108 ***Design criteria for a load-shedding scheme: an extensive simulation approach in a Dynamic Security Assessment (DSA) environment***

G. GIANNUZZI, C. SABELLI, R. SALVATI, R. ZAOTTINI, C. CANDIA, M. CIGNATTA, A. DANELLI, M. POZZI

C2-109 ***Real time dynamic security assessment and control by combining FACTS and SPS***

K. SUZUKI, H. NISHIIRI, T. KAWAHARA, T. MAEDA

C2-110 ***International power grid interconnections in Mexico***

M.A. AVILA, H.G. SARMIENTO, D. LEON

C2-111 ***Digital model power systems of real time for information support of dispatcher power systems***

M.A. RABINOVICH, JU.I. MORJN, S.P. POTAPENKO

C2-112 ***The application of wide area monitoring to the GB transmission system to facilitate large-scale integration of renewable generation***

A. CARTER, M. LEE, C.H. BAYFIELD, T. CUMMING, R. FOLKES, D.H. WILSON

C2-113 ***Real-time wide-area measurements for improved operator response***

R. MOXLEY, G. ZWEIGLE

C2-114 ***Development of standards for the secure and reliable operation of electric power systems***

O.P. VELOZA SALCEDO, H. CÉSPEDES GANDARILLAS

PS2: Consistency and coordination of system control and operation

C2-201 ***Brazilian power system: criteria, operating standard metrics and performance indicators***

SAULO J.N. CISNEIROS, P. GOMES, DALTON O.C. BRASIL, SILVIA S.C. BRASIL

C2-202 ***Powergrid's experience in evolving architecture needs in system control and operation; present and future prospects***

N.S. SODHA, A.S. KUSHWAHA, A.K. MISHRA, S. CHOHAN

C2-203 ***Lessons after few months running of a coordination centre in the Central Western Europe***

O. ARRIVE, F. BOULET, P. DE LEENER

C2-204 ***Special protection system in the interface between the Turkish and UCTE power systems to counter propagation of major disturbances***

F. ILICETO, A. GUBERNALI, H. ALIS, Y. DURUKAN

C2-205 ***New TSO coordination initiative in Europe***

K. ALMASI, A. DETKIEWICZ, W. DREINDL, R. KLEIN, G. MIKA, O. OBERT, R. PIRCHER, M. ROGGE, M. SCHMID, M. STROUHAL, A. TISCHNER, K-W. TAPP, T. TÜRKUCAR, D. KLAAR

C2-206 ***NOIS (Nordic Operational Information System) - A successful joint Nordic project in close co-operation***

C. NORLANDER, F. NILSSON, A-K. NYSTAD, J. SILTALA, S. RICHARD HANSEN

C2-207 ***Grid implementation and operational use of large phase shifting transformers in the Belgian HV grid to cope with international network challenges***

O. BROCKART, J. VAN HECKE, J-L. LEONARD, J. RIMEZ

C2-208 ***Issues related to shared responsibilities between traditional transmission utilities and new agents – the Brazilian case***

A.C. BARBOSA MARTINS, P. GOMES, C. RIBEIRO ZANI, A.M.S. OLIVEIRA, S.L.A. SARDINHA, A. P. GUARINI, C. RIBEIRO, N. MARTINS

C2-209 ***Development of a Chinese standard on WAMS main station for further enhancement of real-time dynamics monitoring capability***

Y.J. FANG, D.N. ZHANG, D. YANG, Y. XU, T.S. XU

C2-210 ***Increased cooperation between TSOs as a precondition for coping with new challenges in system operation***

M. KRANHOLD, R. PAPROCKI, Z. STYCZYNSKI, O. ZIEMANN, M. MÜLLER-MIENACK, C. BÄCK, O.J. OLESEN

C2-211 ***Voltage management system using hybrid voltage control to enhance voltage stability in Jeju power system***

B. LEE, T.K. KIM, J.H. SHIN, N.H. KWAK, J.M. CHO, J.C. BAE, S. SEO, Y.H. CHOI

C2-212 ***Risk assessment methodology for operations applied to the Portuguese transmission system - the probabilistic model***

S.A.B. DE ALMEIDA, R. PESTANA, F.P. MACIEL BARBOSA

SC C3 SYSTEM ENVIRONMENTAL PERFORMANCE

PS1: Innovative environmental studies for power transmission corridors

C3-101 ***Biosecurity strategies – an Australian context***

S. MARTIN, B. YEP, M. ABEL

C3-102 ***Environmental studies for power transmission corridors selection: how AHP (analytical hierarchical process) can help***

P.C.P. MENEZES, D.F. MATOS, J.M. DAMAZIO, C.B. CRUZ, S.H.M. PIRES, K.C. GARCIA, A.M. MEDEIROS, L.R.L. PAZ

C3-103 ***Evolution of environmental management of transmission lines in Brazil - improvements, challenges and prospects***

K.G. MATOSINHO, R.C. FURTADO, H.M. VIEIRA, F.P. SERRAN, L.A. SILVA

C3-104 ***RTE's actions and agreements with stakeholders aiming at promoting biodiversity in forests channels***

E. JAUSSAUD, B. BOURGUIGNON

C3-105 ***Solutions to meet power demand in metropolitan region***

S.V. DESHMUKH, D. RAINA, P. MURUGAN, S.S. PATHAK, A.F. JACHIM, H.E. DEVE

C3-106 ***Adaptive management process for forest restoration by natural regeneration***

S. ABE, M. NASHIMOTO

C3-107 ***How can stakeholders' specific information needs for potential health risks from chemicals be identified ?***

H. KUBOTA, M. KOSUGI, T. TSUCHIYA

C3-108 ***Camouflage of power lines to reduce visual impacts and enhance public acceptance***

N.H. JOHNSON

C3-109 ***Management of safety corridor for Transelectrica 220 – 400 kV OHL transmission lines***

I. MERFU, P. STROICA

C3-110 ***Reduction of the electrical potential of interfered pipelines due to currents of high voltage power lines and electric railways comparison of simulations and measurements***
L. FICKERT, E. SCHMAUTZER, M. LINDINGER, R. BRAUNST

C3-111 ***Contribution of hydro-generation to the Egyptian energy need and environment***
R.M. RADWAN, M.M. AWAD, M.M. FARAG ALLAH

C3-112 ***Regularly cleared right-of-way; an important habitat for grassland and bog butterflies and vegetation***
A. LEVULA, T. LENSU

C3-113 ***Innovative approach of the potential impact of HV lines on their environment: the experimental farm***
F. DESCHAMPS , L. DEVEAUX, K. RIGALMA, C. DUVEAUX-PONTER

C3-114 ***Lineal infrastructures mixed corridors***
R. SAN MILLÁN CRUZ

PS2: External costs accounting of environmental and social impacts of power generation and transmission

C3-201 ***Socio environmental transmission costs in Brazil***
E. MESQUITA

C3-202 ***Analysis of socio-environmental costs in the operational phase of hydropower projects in Brazil***
A.L. MUSTAFÁ, M.R. NUTI

C3-203 ***Procedures to evaluate socio-environmental costs during the planning phase of transmission systems***
F.P. SERRAN, H.M. VIEIRA, K. MATOSINHO, R.C. FURTADO

C3-204 ***External costs in the environmental risk assessment of hydropower project investment analysis***
S.H.M. PIRES, D.F. MATOS, J.M. DAMAZIO, P.C.P. MENEZES, K.C. GARCIA, A.M. MEDEIROS, L.R.L. PAZ

C3-205 ***External costs of transmission: State of RTE's knowledge and practical experience***
E. SERRES, J. ISOARD

C3-206 ***The external costs evaluation for power transmission: focus on overhead lines***
P. GIRARDI, S. MARAN, C. BRAMBILLA

C3-207 ***Environmental and social cost experiences on large transmission line projects in California***
D. PROCTOR

SC C4 SYSTEM TECHNICAL PERFORMANCE

PS1: EMC/EMF and PQ for future networks - compatibility requirements, assessment techniques/tools, and technical performance improvement programmes

C4-101 ***Harmonics measurement campaign results to identify causes of component overloads on 3rd and 5th harmonic filters in the Ibiuna substation***
J.R. MEDEIROS, D.O.C. BRASIL, S.X. DUARTE, T.P. SOUZA, N. KAGAN

C4-102 ***Considerations about the energy absorbed by non gapped line arresters applied on 230 kV overhead transmission lines***
J.L. DE FRANCO, J. PISSOLATO FILHO, A. DA C.O. ROCHA

C4-103 ***3D numerical computation of the induced potential distribution on buried pipelines by neighbour HV lines working on normal and fault conditions***
C. MUNTEANU, G. VISAN, C. DIACONU, I.T. POP, V. CHATZIATHANASIOU, L. BORTELS, V. TOPA

C4-104 ***Harmonic spectrum assessment for low voltage customers in IDECO with a focus on variable harmonic filter design***
M.H. ABDERRAZZZAQ, M.M. KASSAWNH, A.R. ALWEDIAN

C4-105 ***Novel multi-port equivalent including several detailed subsystems for EMTP-simulation***
G.S. BYEON, C.S. SONG, G.S. JANG

C4-106 ***Allocation of emission limits for individual emitters at different voltage levels: flicker and harmonics***
M. BOLLEN, M. HÄGER, M. OLOFSSON

C4-107 ***CIGRE/CIRED/UIE joint working group C4.110, voltage DIP immunity of equipment in installations – main contributions***
M. BOLLEN ON BEHALF OF JWG C4.110

C4-108 ***Fault location in active distribution networks by means of the continuous-wavelet analysis of fault-originated high frequency transients***
A. BORGHETTI, M. BOSETTI, C.A. NUCCI, M. PAOLONE, A. ABUR

C4-109 ***Steady-state and transient EHV AC cable shunt reactive compensation assessment***
R. BENATO, S. LAURIA, F.M. GATTA, L. COLLA, F. RENAUD

C4-110 ***Power quality monitoring in the Romanian power grid***
C. STANESCU, S. PISPIRIS, P. POSTOLACHE, J. WIDMER

C4-111 ***Harmonic analysis using wavelet technique in a large scale power quality monitoring system***
M.A. EL-HADIDY, D.H. HELMI, A.A. ALOKABI

C4-112 ***Power quality management in New Zealand***

N.R. WATSON, S. HARDIE, J. LAWRENCE, W. HEFFERNAN, T. SCOTT, S. HIRSCH, W. WILSON

C4-113 ***Innovative substation solutions in new electrical environment***

J. JENKINS, Y. SHLEMENZON

PS2: Advances in insulation coordination and lightening knowledge for improved performance of electric power systems

C4-201 ***Lightning shielding failure analysis of 1000 kV ultra-high voltage AC transmission line***

J. HE, R. ZENG

C4-202 ***Research on the wave-front correction coefficient used in the discharge of switching surge in 1000 kV and 750 kV transmission line***

Y.C. YUAN, J.Y. GUO, L. LIU, C. DENG

C4-203 ***Modelling of overhead power line insulation using modern numerical tools - advantages and limitations in practical application***

P.H. PRETORIUS, R.G. STEPHEN, D. MUFTIC, S. SADOVIC, K. SOKOLIJA

C4-204 ***Large–scale experimental field tests of practical earthing systems under transient conditions***

H. GRIFFITHS, N. HARID, D. GUO, A. HADDAD, A. AINSLEY

C4-205 ***Lightning current measurement on an overhead line equipped with line arresters***

A. XEMARD, S. SADOVIC, T. SADOVIC, M. MESIC, M. PUHARIC, A. GUERRIER

C4-206 ***An investigation into lightning exposure of massive structures***

F.A.M. RIZK

C4-207 ***Observation results of lightning shielding and improvement in the prediction method for the lightning failure rate with large-sized transmission lines***

S. OKABE, S. TANIGUCHI, T. TSUBOI, H. OHTA, E. ZAIMA

PS3: Techniques and tools for power balancing assessments and risk-based security assessment

C4-301 ***Cancelled - Using adaptive control techniques for the secondary frequency controller design***

S. STERPU, R. RICHARD

C4-302 ***Risk evaluation in power system contingency analyses***

E. CIAPESSONI, D. CIRIO, E. GAGLIOTI, S. MASSUCCO, A. PITTO, F. SILVESTRO

C4-303 ***A method for reliability assessment of active distribution networks***

G. CELLI, E. GHIANI, S. MOCCI, F. PILO, G. PISANO, G.G. SOMA

C4-304 ***Development of load frequency control simulation tool***

T. INOUE, H. AMANO, K. HANAMOTO, W. WAYAMA, H. MATSUMOTO, Y. ICHIKAWA

C4-305 ***IEA ENARD: international collaboration on developments in transmission systems R&D***

K. UHLEN, D. CIRIO

C4-306 ***Application of wind generation capacity credits in the Great Britain and Ireland systems***

C.J. DENT, B. HASCHE, A. KEANE, J.W. BIALEK

C4-307 ***Methods and software tools for evaluation, forecasting and analysis of electric power and energy balances in electric power companies of Russia***

P.S. ABAKHSHIN, V.E. VOROTNITSKI, M.V. EGOROV, M.A. KALINKINA, B.I. MAKOKLYUEV, A.S. POLIZHAROV, T.N. PROTOPOPOVA, O.V. TURKINA

SC C5 ELECTRICITY MARKETS AND REGULATION

PS1: Challenges of national or state regulations of transmission and system operators in regional markets

C5-101 ***Experience of India's first power exchange and challenges ahead***

RAVINDER, A. AWASTHY

C5-102 ***Harmonization of cross border transmission capacity allocation within the Central West Europe region***

B. NEUPONT ON BEHALF THE TSOS OF CWE REGION

C5-103 ***Interregional market coupling - a challenge for the NorNed cable***

R. BEUNE, J. VAN PUTTEN, K. ARNE BARMSNES, O. GJERDE

C5-104 ***Harmonization and integration of national balancing markets in Europe – regulatory challenges***

R.A.C. VAN DER VEEN, F.A. NOBEL, D.A.M. KLAAR, G.L. DOORMAN, O.S. GRANDE, R.A. HAKVOORT

C5-105 ***Experiences and challenges of the Brazilian transmission system in search of efficiency***

S.J.N. CISNEIROS, F. M.C. FERREIRA

C5-106 ***Czech and Slovak spot electricity market coupling on the basis of implicit capacity allocation***

P. ŠOLC, B. NĚMEČEK

SC C6 DISTRIBUTION SYSTEMS AND DISPERSED GENERATION

C6-106 ***A fast-switching load for frequency stability***

R. HOLLAND, H. KLEY, O. PACIFIC, T. LUND

C6-107 ***Improving network reliability by minimising the impact of renewable energy uncertainties***

K. ZOU, A.P. AGALGAONKAR, K.M. MUTTAQI, S. PERERA, A. BAITCH

C6-108 ***Distributed energy resource equipment development and testing on a full scale distribution network test line***

C. ABBEY, Y. BRISSETTE, L. DIGNARD, G. JOOS

C6-109 ***Reactive power control with CHP plants - A demonstration***

P. NYENG, J. ØSTERGAARD, C.A. ANDERSEN, J. DALL, C. STRUNGE

C6-110 ***Development of new islanding detectors and voltage control systems by experimental studies supported by NEDO***

S. MOROZUMI, K. WATANABE, K. YOSHIDA, K. KOUCHI, Y. NAKANISHI, H. OTA

C6-111 ***Operating experiences and voltage control issues in distribution network with large scale integration of both wind and small-scale hydro power generation***

T. TOFTEVAAG, A. PETTERTEIG, A.V. HANSEN, H. FADUM

C6-112 ***Joint action of DG units to reduce flow of reactive power in the distribution network***

A. PETTERTEIG, O. GJERDE, R. PAULSEN

C6-113 ***Functional model of virtual power plant (VPP)***

S. LUKOVIC, I. KAITOVIC, M. MURA, U. BONDI, F. KULIC, D. POPOVIC

C6-114 ***Experiences of introducing new regulatory policies to electricity supply***

P. PUNJAD, R. MUENYA

C6-115 ***Smart grid demos provide guidance on integrating DER and RES into the distribution system with consideration of transmission impacts, market signals, and technology characteristics***

M. WAKEFIELD, G. HORST, S. HAMILTON

C6-116 ***Provision of ancillary services by RES***

B.M. BUCHHOLZ, V. BÜHNER

PS2: Demand side integration

C6-201 ***Practical experiences of demand side integration through pricing***

B. FENN, D. ERMERT, H. FREY

C6-202 ***Optimal demand side response for electricity balance control in microgrid***

M. KOSHIO, M. NONAKA, S. NAKAMURA, K. NAKAO, D. SATO

C6-203 ***Active demand side management operator tool (SGCLOS) and new communications architecture in the XXI century electrical grid***

E. GARCÍA SÁNCHEZ, A. RODRÍGUEZ APARICIO, M. GARCÍA CASADO, P. MARTÍN MUÑOZ, R. MORA, J. DIAZ GARCIA, S. FRESNILLO VELASCO, A. VALERA VÁZQUEZ, A. LÓPEZ, D. ROMÁN, M. GARCÍA, R. SANZ

C6-204 ***Prospective study on the impact of electrical vehicles on the winter load peak in a village of East of France***

C. BATHANY, H. BOUIA, V. MURIN, D. OSSO, J. MAIRE

C6-205 ***Integration of active customers into smartgrids: experimental test facility and results***

G. MAURI, D. MONETA, J. SILVA DE ASSIS CARNEIRO

C6-206 ***DSM in Spain, GAD project. Aims, developments and initial results***

I. NAVALON BURGOS, S. BANARES, L. MORENO SARRION, A. QUIJANO LOPEZ

PS3: New concepts and technologies for the electrification of rural and remote areas

C6-301 ***Unified power quality controller for the micro grid system***

Y.H. CHUNG, H.J. KIM, J.W. CHOE

C6-302 ***New technology for the development of economic and sustainable rural electrification systems in the vicinity of EHV power lines***

L.E. MELO, J.C. PITMAN, A. CASSINOTTI, G. CASSINOTTI

C6-303 ***Secondary control of microgrids: application of potential functions***

A. MEHRIZI-SANI, R. IRAVANI

C6-304 ***Distributed intelligent control of DER and LV loads in microgrids***

A. DIMEAS, N. HATZIARGYRIOU, V. LIOLIOU, K. TSIROULIS, P. MOUTIS, S. CHADJIVASSILIADIS, E. KARFOPOULOS, T. TOMTSI, S. TSELEPIS, E. RIKOS

C6-305 ***Rural electrification project development, using auxiliary service voltage transformers. Location of Tubares, Chihuahua, Mexico***

R. GOMEZ, A. SOLANO, E. ACOSTA

C6-306 ***European road map for microgrids***

C. SCHWAEGERL, L. TAO, P. MANCARELLA, G. STRBAC, N. HATZIARGYRIOU, B. BUCHHOLZ

C6-307 ***Small-scale rural electricity providers - opportunities and challenges***

A.N. ZOMERS, C.T. GAUNT ON BEHALF OF SC C6

SC D1 MATERIALS AND EMERGING TEST TECHNIQUES

PS1: New materials for improved efficiency and sustainability of AC & DC power equipment

D1-101 ***Experience of the Egyptian electricity transmission company in up-rating existing extra high voltage overhead transmission lines***

H. NEGM, N. HEGGY, A.S. IBRAHIM, I. AHMED, S. TAWFIK

D1-102 ***Comparison of characteristics between mineral and ester oils***

C. PERRIER, M. RYADI, Y. BERTRAND, C. TRAN DUY

D1-103 ***Application of new solid insulating materials and new gas compositions to future advanced gas insulated systems***

H. HAMA, S. OKAB, T. ROKUNOHE, H. OKUBO, M. NAGAO

D1-104 ***Experimental research on the feasibility of biodegradable polymeric insulating materials***

Y. OHKI, N. HIRAI, S. OKABE, S. KANEKO

D1-105 ***Improved performance of silicone rubbers for the use in composite insulators***

S. ANSORGE, F. SCHMUCK, S. AITKEN, K.O. PAPAILIOU, S.E. PRATSINIS

D1-106 ***Evaluation of conductivities and dielectric properties for highly stressed HVDC insulating materials***

A. KÜCHLER, M. LIEBSCHNER, C. KRAUSE, U. PIOVAN, R. FRITSCHE, J. HOPPE, A. LANGENS, J. TITZE

PS2: Challenges for testing and diagnostics

D1-201 ***Flashover tests under wet conditions on full and section UHV insulators***

O. OLIVEIRA FILHO, D.R. MELLO, J.A. CARDOSO, R.M. DE AZEVEDO, S.G. CARVALHO, W.A.S. CRUZ

D1-202 ***New approach of testing power transformers by means of static frequency converters***

A. THIEDE, T. STEINER, R. PIETSCH

D1-203 ***A novel optical fiber sensor system for temperature monitoring of power transformers***

M.H. SONG, J.K. LEE, J.H. LEE

D1-204 ***PD pattern classification system using image analysis for on-line PD monitoring of power equipment***

V.R. GARCIA-COLON

D1-205 ***Condition assessment of transmission power cables***

E. GULSKI, P. CICHECKI, J.J. SMIT, F. DE VRIES, J. PELLIS, D. VAN HOUWELINGEN, F. WESTER, R. BODEGA, T.J.W.H. HERMANS

D1-206 ***Pulsed X-ray induced partial discharge measurements – a new testing technique for HV insulation***

H. FUHRMANNA, A. TRÖGERB, U. RIECHERT

D1-207 ***Combination of different techniques for improved interpretation of PD measurements***

S. TENBOHLEN, A. PFEFFER, S. COENEN, A. WILSON, S. MARKALOUS, T. STREHL

D1-208 ***Dissolved gas analysis and partial discharge diagnosis of common fault types in bio-degradable oil transformers***

B.T. PHUNG, N.A. MUHAMAD, T.R. BLACKBURN

D1-209 ***Challenges for obtaining asset management and diagnostic monitoring information from network businesses in a commercial world***

P. MCMULLAN, P. RAMSAY

D1-210 ***Belgian experience with electrical testing and destructive material analysis for improved stator winding insulation diagnostics***

J. VAN COTTHEM, G. PLATBROOD

D1-211 ***Furan derivatives in oil: assessment of the deterioration of winding insulation of a hermetically sealed power transformer. New results***

J. NEJEDLY, H. HALBWIRTH

D1-212 ***Return of experience on UHF partial discharge monitoring of high voltage substation***

A. GIRODET, G. LUNA, S. DUBOSCQ, P. PRIEUR

D1-213 ***Diagnostic markers for oxidation condition of mineral oil and ester insulating fluids***

I. ATANASOVA-HOEHLEIN, T. HAMMER, M. SCHAEFER

D1-214 ***A development of diagnosis system employable to high voltage insulator considering leakage current***

C.H. RYU, Y.J. LEE, B.W. LEE, J.Y. KOO

D1-215 ***Experiences on commissioning, failure analysis and on-line testing of gas insulated substations***

C.G. AZCARRAGA, A. GARCIA, A. NAVA, O. ESCORSA

D1-216 ***Interpretation of dielectric spectroscopy results in time and frequency domains for power cables***

S. BHUMIWAT

D1-217 ***Compact system for induced overvoltage tests in complete substations***

E. IRABURU, E. PEREZ, F. GARNACHO, P. SIMON, T. GARCIA

PS3: Endurance of materials especially in harsh electrical and physical environments

D1-301 ***Deterioration of fiber reinforced material under chemical and coastal pollutions***

N. HEGGY, B.A. ARAFA, M. SAMIR

D1-302 ***Endurance of polymeric insulating materials in nuclear power plants and needs for condition monitoring of electrical cables***

Y. OHKI, N. HIRAI, T. YAMAMOTO, T. SEGUCHI, H. KUDOH, T. OKAMOTO

SC D2 INFORMATION SYSTEMS AND TELECOMMUNICATION

PS1: Practical implementation of IEC 61850 in electric power systems (Common with B5)

D2/B5-101 ***Multipurpose architecture model of phasor data concentrator***

I. IVANKOVIC, S. SKOK, R. MATICA, I. ŠTURLIĆ

D2/B5-102 ***BHEL experience in implementation of IEC 61850 based substation automation system in India***

A. SINHA, R. SINGH, G. CHAKLADER, D. DATTA

D2/B5-103 ***Practical experience with IEC 61850 multivendor systems and foreseeable future applications – a system integrator and end-user perspective***

R. PAULO, F. MATOS

D2/B5-104 ***Performance considerations in wide area monitoring and control systems***

M. CHENINE, L. NORDSTRÖM

D2/B5-105 ***Substation-control centres communication***

C. BRUNNER, W. BRODT, H. ENGLERT, K. RIAN, A. WEST, P. LHUILLIER

D2/B5-106 ***Impact of communication network impairments on wide area monitoring, control and protection applications in the IEC 61850 environment***

E. GOUTARD, T. RUDOLPH, M. MESBAH

D2/B5-107 ***Specifications, requirements and experiences using IEC 61850 in the Iberoamerican region***

C. SAMITIER, R. PELLIZZONI ON BEHALF OF RIAC JWG 61850

D2/B5-108 ***Communication issues using line protection schemes***

C. SAMITIER ON BEHALF OF CIGRE JWG B5/D2.30

D2/B5-109 ***PRIME as open communication base for IEC 61850 on the distribution network***

J. ARRIOLA ALCIBAR, L. ANDERSSON, T. BERNSTEIN

D2/B5-110 ***Architecture of wide area monitoring systems and their communication requirements***

V. TERZIJA, D. CAI, A. VACCARO, J. FITCH

D2/B5-111 ***Pilot Project with IEDs IEC 61850 from different vendors in a 132/33/13.2 kV substation***

R. PELLIZZONI, L. FUNES, R. DELORENZI, E. DUFOUR

D2/B5-112 ***Substation automation system based on IEC 61850 - present and future prospects in India***

I.S. JHA, O. CHANDY, K. RATHORE, R. SRIVASTAVA

D2/B5-113 ***Communications needs for different applications of IPS/UPS wide area measurements (WAMS)***

B. AYUEV, P. EROKHINE, Y. KULIKOV

D2/B5-114 ***Ethernet network performance analysis and RSTP protocol behaviour in a complex topology proposed by Endesa for IEC 61850 substations***

A. ARZUAGA, M. ZAMALLOA, B. GALLASTEGI, J. BADIA, R. MARTIN, A. HILAZO

D2/B5-115 ***Engineering approach for the end user in IEC 61850 applications***

N. NIBBIO, M. GENIER, C. BRUNNER, E. COTTENS, D. MULLER, J. REUTER

D2/B5-116 ***Deployment and interconnection of IEC 61850 islands***

K.P. BRAND, A. MENON, H. SPIESS, P. SCHWYTER, W. WIMMER

PS2: Information and information technology (IT) security for electric power utilities

D2-201 ***A telecommunications mobile unit for transmission lines emergency scenarios***

A. PINHEL SOARES, R. MEDEIROS, J.A. PAULA MOTTA

D2-202 ***Security countermeasures for office system in Japanese electric power companies***

H. IWAMOTO, S. SUZUKI, H. MISHIMA, A.FUTAKATA, Y. TOMITA, H. HAZAKI

D2-203 ***Outline of telecommunications networks for electric power systems and security measures and evaluation examples in Japanese electric power companies***

K. SAKASHITA, K. YAMAOKA, M. KIUCHI, K. DEZAKI , K. ADACHI