

2006 CIGRE SESSION

TECHNICAL PROGRAMME

SC A1 Rotating Electrical Machines

PS1: Developments in Electrical Machine design and experience in service

- A1-101 IMPROVEMENT IN REQUIREMENTS FOR STRESS GRADING SYSTEMS OF STATOR WINDINGS AT HYDRO-QUEBEC**
TREMBLAY REMI, HUDON CLAUDE, GODIN THIERRY, BELEC MARIO, BANVILLE JEAN-PIERRE, NGUYEN DUC NGOC (CANADA)
- A1-102 EXPERIMENTAL AND CFD ANALYSIS OF HYDROGENERATOR VENTILATION COMPONENTS**
N.GUNABUSHANAM, J.VENKATA SURESH (INDIA)
- A1-103 TESTS ON 500 MVA HYDROGEN COOLED TURBOGENERATOR IN SINGLE-SHAFT CONFIGURATION**
VINCENZO TARTAGLIONE (ITALY)
- A1-104 AIR COOLED GENERATORS HAVING COMPETITIVE PERFORMANCES TO CONVENTIONAL H2-COOLED MACHINES**
KENICHI HATTORI, AKITOMI SEMBA, TADAAKI KAKIMOTO, TAKASHI WATANABE, KAZUHIKO TAKAHASHI (JAPAN)
- A1-105 DETERIORATION MECHANISMS FOUND IN ELECTRICAL GENERATORS OF A HYDRO PLANT AND ITS REHABILITATION**
EDGAR ROBLES, OSCAR REYES, ARTURO GARCÍA (MEXICO)
- A1-106 LARGE AIR-COOLED TURBOGENERATORS - EXTENDING THE BOUNDARIES**
R. JOHO, C. PICECH, K. MAYOR (SWITZERLAND)
- A1-107 HYDROGENERATOR POLES DAMAGE BY ELECTRICAL EROSION – PATTERN, CAUSE, DIAGNOSTICS AND FAILURE PREVENTION**
V.V. KUZMIN, A.N. VAKULENKO (UKRAINE)
- A1-108 OPERATING EXPERIENCE OF A SUPERCONDUCTOR DYNAMIC SYNCHRONOUS COMPENSATOR**
SWARN S. KALSI, DAVID MADURA, MICHAEL ROSS, MICHAEL INGRAM (USA), REGINE BELHOMME, PIERRE BOUSSEAU, JEAN-YVES ROGER (FRANCE)

PS2: Life Cycle and Failure Risk Assessment and Management tools

- A1-201 HYDROGENERATORS WITH STATOR WINDING WATER COOLED TYPE: DIFFICULTIES AND SOLUTIONS ON DOING DIELECTRIC TESTS**
GERALDO CARVALHO BRITO JUNIOR, MARCELO FABIANO LATINI (BRAZIL)
- A1-202 APPLICATION OF SIMPLIFIED STATISTICAL MODELS IN HYDRO GENERATING UNITS CONDITION MONITORING**
GERALDO CARVALHO BRITO JUNIOR (BRAZIL)
- A1-203 EXPERIENCE WITH CONTINUOUS ON-LINE PARTIAL DISCHARGE MONITORING OF HYDROGENERATOR STATOR WINDING INSULATION**
G.C. STONE, B. LLOYD, M. SUSNIK, R. HUBER (CANADA), S. ZELINGHER (USA)
- A1-204 DETERMINATION OF OPERATING LIMITS OF UNDEREXCITED SYNCHRONOUS GENERATOR BY MEASUREMENTS**
Z. MALJKOVIĆ, I. ILIC, I. GAŠPARAC, M. PAVLICA, A. VISKOVIĆ, I. ANDROCEC (CROATIA)
- A1-205 FAILURE ANALYSIS OF GENERATOR ROTORS - CAUSES AND PREVENTIONS**
N. N. MISRA, D.K. SOOD (INDIA)
- A1-206 A SUCCESSFUL RETROFIT OF OLD TURBO-GENERATORS HAVING VARIOUS TECHNICAL PROBLEMS**
H.KATAYAMA, S.TAKAHASHI, H.NAKAMURA, H.SHIMADA, H.ITO (JAPAN), GERT J COETZEE, FRED A CLAASSENS (SOUTH AFRICA)
- A1-207 CANCELLED**
- A1-208 MAINTENANCE EXPERIENCE FOR SMALL HYDRO GENERATOR**
Y. J. KIM, D. S. KANG, B. K. OH, K. H. LEE, K. J. LIM (KOREA)
- A1-209 BENEFITS FROM THE USE OF ON LINE TURBO GENERATOR MONITORING SYSTEMS.**
EDGAR ROBLES, OSCAR REYES, OCTAVIO DE LA TORRE, JOSÉ RAMÍREZ-NIÑO (MEXICO)

- A1-210** **EFFICIENCY MEASUREMENT BY APPLYING TWO DIFFERENT METHODS AT THE MODERNIZED HYDROGENERATORS IN IRON GATES 1 HYDROELECTRIC POWER PLANT**
DAN ZLATANOVICI, RODICA ZLATANOVICI, DRAGO NOVAC (ROMANIA), MARCUS REGLI (SWITZERLAND), SLOBODAN BOGDANOVICI, (SERBIA & MUNTENEGRO)
- A1-211** **SERVICE LIFE PROLONGATION AND RELIABILITY INCREASE OF LONG OPERATING TURBOGENERATORS**
L.G. MAMIKONYANTS, V.A. PIKULSKY, F.A. POLYAKOV (RUSSIA)
- A1-212** **EXPERIENCE OF LONG OPERATED HYDROGENERATOR REFURBISHMENT AND RECONSTRUCTION**
Y. DEGUSAROV, V. SHKOLNIK (RUSSIA)
- A1-213** **AUTOMATIC PD PATTERN EVALUATION AS PART OF CONDITION BASED MAINTENANCE STRATEGY**
C.-E. STEPHAN, C. WENDEL, R. STEIN, R. JOHO, M. PETERS (SUISSE)
- PS3: Machines for distributed generation and renewable energy (Wind power, micro-turbine, wave power, bulb hydro units)**
- A1-301** **ENERGY EFFICIENCY OF SMALL INDUCTION GENERATORS**
W. DEPREZ, A. DEXTERS, J. DRIESEN, R. BELMANS (BELGIUM)
- A1-302** **OPERATING RANGES AND DYNAMIC SIMULATION OF A DOUBLY-FED INDUCTION MACHINE**
J.SOENS, J. DRIESEN, R. BELMANS (BELGIUM)
- A1-303** **ON-LINE CONDITION MONITORING SYSTEM FOR LARGE TURBINE GENERATOR**
YONG-JOO KIM, DON-HA HWANG, DONG-SIK KANG, Y-J. LEE, D-Y. PARK (KOREA)
- A1-304** **COMPARISON OF THE DYNAMIC RESPONSE OF WIND POWER GENERATORS OF DIFFERENT TECHNOLOGIES IN CASE OF VOLTAGE DIPS**
L ROUCO, F. FERNÁNDEZ-BERNAL, J.L. ZAMORA, P. GARCÍA-GONZALEZ (SPAIN)

SC A2 Transformers

PS1: Transformers Reliability, Technical, Economical and Strategic Aspects

- A2-101** **AN ANALYSIS OF THE INCREASE ON TRANSFORMERS FAILURE RATE PHENOMA AND MEASURES TAKEN TO IMPROVE TRANSFORMERS RELIABILITY**
G. M. BASTOS, J. KOTLAREWISKI, W. FRANÇA, J. SANTELLI (BRAZIL)
- A2-102** **ON-LOAD TAP CHANGER RELIABILITY AND MAINTENANCE STRATEGY**
MARC FOATA, CLAUDE RAJOTTE, ALAIN JOLICOEUR (CANADA)
- A2-103** **2FAL, AGEING OF PAPER INSULATION AND LIFE MANAGEMENT OF POWER TRANSFORMERS**
J. NEJEDLY, H. HALBWIRTH (CZECH REPUBLIC)
- A2-104** **CONDITION ASSESSMENT OF AGED TRANSFORMER BUSHING INSULATIONS**
ANDREAS KUECHLER, NORBERT KOCH, CLAUS NEUMANN, KARSTEN LOPPACH, FRANK HUELLEMANDEL, K. BÖHM (GERMANY), CHRISTOPH KRAUSE, JEAN-JACQUES ALFF (SWITZERLAND)
- A2-105** **EFFECT OF MERCAPTAN SULPHUR ON INSULATION PERFORMANCE OF HVDC CONVERTER TRANSFORMERS**
B.P. SINGH, T.S.R. MURTHY, G. JAYARAMAN, A.K. ADIKESAVULU, J.M. MALLIK, S.C. BHAGERIA AND M.I. KHAN (INDIA)
- A2-106** **A NEW TECHNIQUE FOR DIAGNOSING INTERNAL ABNORMALITIES IN OIL-FILLED TRANSFORMERS**
TATSUO KAWAMURA, TAKAYUKI KOBAYASHI, NOBORU HOSOKAWA, YOSHIHITO EBISAWA, YUKIYASU SHIRASAKA (JAPAN)
- A2-107** **DEVELOPMENT OF GAS INSULATED TRANSFORMER**
I. S. HWANG, J. Y. LEE, S. J.H.WOO, K.S. PARK, B.Y. SEOK (KOREA)
- A2-108** **DRYING OF POWER TRANSFORMERS IN THE FIELD, APPLYING THE LFH-TECHNOLOGY IN COMBINATION WITH OIL RECLAMATION**
PAUL KOESTINGER, TOM MYRAN BRUARØY (NORWAY)
- A2-109** **COMBINED ASSESSMENT OF TRANSFORMER WINDING MECHANICAL CONDITION - IMPORTANT STEP TO ENHANCEMENT OF TRANSFORMER RELIABILITY**
DR.-SC. ALEXANDR DROBYSHEVSKI, ENG. EVGENIA LEVICKAJA, DR.-SC. ALEXANDR LURIE, DR.-SC. ANATOLY PANIBRATETS
- A2-110** **ELECTRONIC TRANSFORMER CONTROL WITH MONITORING AND DIAGNOSTICS**
BENGT-OLOF, A. STENESTAM, CLAES T. BENGTTSSON, PETER N. YDERSTEN (SWEDEN)
- A2-111** **OIL CORROSION AND CONDUCTING CU₂S DEPOSITION IN POWER TRANSFORMER WINDINGS**
C. BENGTTSSON, M. DAHLUND, K. GUSTAFSSON, J. HAJEK, L.F. PETTERSSON, R. LEANDERSSON (SWEDEN) A. HJORTSBERG (SWITZERLAND)
- A2-112** **DATA COLLECTION AND ANALYSIS OF TRANSFORMER INSULATIONS IN EGAT : TOWARD TO AGEING**
A. LIMLAMYONG, Y. VACHIRATARAPADORN, P. KUANSATIT, T. TANCHAROEN, V KHUMCHOO, C. DEEBAO (THAILAND)
- A2-113** **ENGINEERED RELIABILITY: UK EXPERIENCE OF 400kV 800MVA GENERATOR TRANSFORMERS**
A.C. HALL, A. DARWIN, J.D. FYVIE, T.H. HARRISON, J.A. LAPWORTH (UNITED KINGDOM)
- A2-114** **TRANSFORMER RELIABILITY SURVEYS**
J.A. LAPWORTH (UNITED KINGDOM)

PS2: Phase Shifter Transformers

- A2-201** **IN SERVICE FAILURE OF 230 kV TRANSFORMERS DUE TO STEEP-FRONT LIGHTNING OVER VOLTAGES AT MEXICAN WEST COAST**
ALVARO CANCINO, RODRIGO OCÓN, GILBERTO ENRÍQUEZ H. (MEXICO), RYSZARD MALEWSKI (POLAND)
- A2-202** **GRID IMPLEMENTATION OF A 400MVA 220/150kV -15%/+3° PHASE SHIFTING TRANSFORMER FOR POWER FLOW CONTROL IN THE BELGIAN NETWORK : SPECIFICATION AND OPERATIONAL CONSIDERATIONS**
J. RIMEZ, R. VAN DER PLANCKEN, D. WIOT, E. JOTTRAND, G. CLAESSENS, J. DECLERCQ (BELGIUM)
- A2-203** **INNOVATIVE APPLICATIONS OF PHASE-SHIFTING TRANSFORMERS SUPPLEMENTED WITH SERIES REACTIVE ELEMENTS**
J. BROCHU, F. SIROIS, R. CLOUTIER, A. BERGERON, L. GARANT, F. BEAUREGARD (CANADA), M. I. HENDERSON (USA) - ON BEHALF OF SC A2
- A2-204** **FRENCH EXPERIENCE IN PHASE-SHIFTING TRANSFORMERS**
P. HURLET, J. MARGOLOFF, JC. RIBOUD, A. TANGUY (FRANCE)
- A2-205** **SPECIAL CONSIDERATIONS ON THE SELECTION OF ON-LOAD TAP-CHANGERS FOR PHASE-SHIFTING TRANSFORMER**
AXEL KRÄMER, DIETER DOHNAL, BURKHARD HERRMANN (GERMANY)
- A2-206** **POWER FLOW CONTROL ON THE ITALIAN NETWORK BY MEANS OF PHASE-SHIFTING TRANSFORMERS**
ENRICO MARIA CARLINI, GABRIELE MANDUZIO (ITALY), DIETRICH BONMANN (GERMANY)
- A2-207** **THE SPECIFICATION AND APPLICATION OF LARGE QUADRATURE BOOSTERS TO RESTRICT POST-FAULT POWER FLOWS**
PAUL JARMAN (ON BEHALF OF SC A2)

- A2-208** **A 100-MW VARIABLE FREQUENCY TRANSFORMER (VFT) ON THE HYDROQUÉBEC NETWORK – A NEW TECHNOLOGY FOR CONNECTING ASYNCHRONOUS NETWORKS**
JEAN-MARIE GAGNON, DENIS GALIBOIS, DANIELLE MCNABB, DENIS NADEAU (CANADA), EINAR V. LARSEN, D. MCLAREN, RICHARD PIWKO, CARL A. WEGNER, HERVÉ MONGEAU (USA)
PS3: New Development of electrical transients on transformer performances (event. Panel or Workshop with SC B4 and C4)
- A2-301** **ASSESSMENT OF AN EHV SHUNT REACTOR INSULATION AND MECHANICAL PERFORMANCE BY SWITCHING SURGE ANALYSES**
ANGÉLICA DA COSTA OLIVEIRA ROCHA, JOSÉ CARLOS MENDES (BRAZIL)
- A2-302** **EXPERIENCE WITH HF MODELLING FOR ELECTRICAL TRANSIENTS AND ITS APPLICATION TO FRA MODELLING**
F. DEVAUX, J. PRINS, M. SARAVOLAC (FRANCE), Z.D. WANG, A. W. DARWIN, (UNITED KINGDOM)
- A2-303** **LONG TIME EXPERIENCES OF ZnO-VARISTOR APPLICATION IN POWER TRANSFORMERS AND OLTC'S**
PETER HEINZIG, DR. WOLFGANG KNORR, CHRISTOPH PLÖTNER, AXEL KRÄMER, M. KÖLBL (GERMANY)
- A2-304** **INVESTIGATION AND SITE REPAIR OF HVDC CONVERTER TRANSFORMERS – POWERGRID INDIA EXPERIENCE**
VIJAY KUMAR BHASKAR, BARINDRA N DE BHOWMICK, NARENDRA S SODHA, JAINUL HAQUE (INDIA)
- A2-305** **TRANSFORMER INTERNAL OVER-VOLTAGES CAUSED BY REMOTE ENERGISATION**
J. LAPWORTH, P. JARMAN, T. BRECKENRIDGE (UNITED KINGDOM)
- A2-306** **SYMPATHETIC INTERACTION BETWEEN STEP-UP TRANSFORMERS UP 13.2/400 kV OF MACAGUA HYDROELECTRIC COMPLEX FROM CVG EDELCA**
ALESSANDRO VILLA R (VENEZUELA)

SC A3 High Voltage Equipment

PS1: Novel HV equipment (switchgear, surge arrestors, instrument transformers, capacitors, insulators) and development tools

- A3-101** **MODEL OF THE NEW MECHANISM FOR DOUBLE-MOTION OF CONTACTS IN A SINGLE BREAK HV SF6 CIRCUIT BREAKER**
MIRSAD KAPETANOVIĆ, ALMIR AHMETHODŽIĆ (BOSNIA HERZEGOVINA)
- A3-102** **IMPROVEMENT OF THE TRANSMISSION LINES LIGHTNING PERFORMANCE USING LINE ARRESTERS – EXPERIENCE OF THE BRAZILIAN UTILITIES**
JORGE LUIZ DE FRANCO, ANA CRISTINA GUARÁ BEZERRA, ANTÔNIO DONIZETTI ANDRADE (BRAZIL)
- A3-103** **PORTABLE 500 KV OPTICAL VOLTAGE TRANSDUCER FOR ON-SITE CALIBRATION OF HV VOLTAGE TRANSFORMERS WITHOUT DE-ENERGIZATION**
FARNOOSH RAHMATIAN, JIM GURNEY, JOHN VANDERMAAR (CANADA)
- A3-104** **ELECTRIC FIELD DISTRIBUTION ON INSULATING SPACERS IN GIS USING THE FINITE ELEMENT TECHNIQUE**
R.M.RADWAN, A.M.ABOU-ELYAZIED (EGYPT)
- A3-105** **COMPACTNESS AND RELIABILITY OF NEW GAS INSULATED SWITCHGEAR WITH A RATED VOLTAGE OF 420 kV**
F. LECLERC, P CHEVRIER, A. GIBOULET, G. GAUDART, G. CHAROT (FRANCE)
- A3-106** **ADVANCED MODELLING METHODS FOR CIRCUIT BREAKERS**
MAX-STEFFEN CLAESSENS, MARTIN HOLSTEIN (SWITZERLAND), LUTZ DREWS, HENRIK LOHRBERG (GERMANY), RUKMANI GOVINDARAJAN (CZECH REPUBLIC), PH ROBIN-JOUAN (FRANCE)
- A3-107** **APPLICATION OF TRANSPARENT COMPOSITE INSULATORS IN HIGH-VOLTAGE SWITCHING DEVICES TO SEE THE POSITION OF THE CONTACTS**
ANDREAS SCHIEMANN, ACHIM STELTER (GERMANY), CHRISTIAN LINDNER, J-L BESSÈDE, ERIC MOAL (FRANCE), I. JAMES (UNITED KINGDOM)
- A3-108** **NOVEL TRANSFORMER BUSHINGS WITH ZnO ARRESTERS INSTALLED INSIDE**
M.R.MESHKATODDINI (IRAN)
- A3-109** **CANCELLED**
- A3-110** **A NEW ARC PARAMETER DATABASE FOR CHARACTERISATION OF SHORT-LINE FAULT INTERRUPTION CAPABILITY OF HIGH-VOLTAGE CIRCUIT BREAKERS**
R.P.P. SMEETS, V. KERTÉSZ (THE NETHERLANDS)
- A3-111** **NEW SINGLE-BREAK SF6 CIRCUIT-BREAKER ON RATED VOLTAGE 330 KV**
DR-SC VALENTIN BORIN, PROF. VLADIMIR VARIVODOV , DR-SC VLADLEN CHEMERIS (RUSSIA)
- A3-112** **A SEMICONDUCTOR BASED CIRCUIT BREAKER CONCEPT – FIELD EXPERIENCE AS CAPACITOR SWITCH**
M. BACKMAN, M. DAHLGREN, P. NORBERG

PS2: Management of ageing HV equipment (assets)

- A3-201** **ON-LINE CONDITION MONITORING OF HIGH VOLTAGE EQUIPMENT IN TWO TRANSMISSION NETWORKS IN AUSTRALIA**
JONES S.L, KINGSMILL A, BLUNDELL M.S, GABB J, SLADE G (AUSTRALIA)
- A3-202** **THERMOGRAPHY OF AGED CONTACTS OF HIGH VOLTAGE EQUIPMENT**
MUHR M., PACK S., JAUFER S., LUGSCHITZ H. (AUSTRIA)
- A3-203** **CIRCUIT BREAKER TRIPPING NEAR CAPACITOR BANKS**
F. MARTIN, E. JONCQUEL (FRANCE)
- A3-204** **ON-SITE LIVE VERIFICATION OF HV INSTRUMENT TRANSFORMER ACCURACY**
GABRIELLA CROTTI, ANGELO SARDI, NIKOLA KULJACA, PAOLO MAZZA, GIORGIO DE DONÀ (ITALY), UWE BRAND, MICHEL GIRAUD (GERMANY), ANDERS ANDERSSON, STEPHAN WEISS (U.S.A.)
- A3-205** **RELIABILITY AND ELECTRICAL STRESS SURVEY ON HIGH VOLTAGE CIRCUIT BREAKER IN JAPAN**
YASUHIKO NAKADA, ISAO TAKAGI, MASAMI SHIN, JUNZO KIDA, MITSURU TOYOTA, HIROKI ITO (JAPAN)
- A3-206** **LONG-DISTANCE AC POWER TRANSMISSION AND SHUNT/SERIES COMPENSATION OVERVIEW AND EXPERIENCES**
A.L.J. JANSSEN, M. WALDRON, Q. BUI-VAN, F. ILICETO, F. GALLON, B. MIDDLETON ON BEHALF ON WG A3.13
- A3-207** **SERVICE EXPERIENCE WITH VOLTAGE GRADING CAPACITORS**
MAGNE RUNDE, ANNE BOSMA, PAUL COVENTRY, PIELUIGI GRAMAGLIA, HEIKO JAHN, NORBERT KOCH, EDELHARD KYNAST, MLADEN PREDOVAN, JR., ADOLFO RIBEIRO, ETIENNE SAVARY, BRUCE R.SUNGA, DAISUKE YOSHIDA (ON BEHALF OF CIGRÉ WG A3.18)

PS3: Extreme stresses on HV equipment – occurrence, effects and design of equipment

- A3-301** **HIGH VOLTAGE CIRCUIT BREAKER AND DISCONNECTOR APPLICATION IN EXTREME COLD CLIMATES**
D.F. PEELO, B.R. SUNGA, J.H. SAWADA, P. RIFFON, M. BINNE, F. STALDER, G. BOWDEN, B.J. GRUPELL (CANADA)

- A3-302** **TREATMENT OF EXTREME STRESSES ON HIGH-VOLTAGE CIRCUIT-BREAKERS IN IEC 62271-100**
D. DUFOURNET (FR), A. BOSMA (NL), N. TRAPP (DE)
- A3-303** **SEVERE STRESSES ON SWITCHING EQUIPMENT OF 500 Kv TRANSMISSION SYSTEM IN JAPAN**
TOSHINORI SHIRATO, KIICHIRO YOKOTSU, HIROSHI YONEZAWA, JUNZO KIDA, TAKESHI YOKOTA, TSUTOMU SUGIYAMA (JAPAN)
- A3-304** **HIGH-CURRENT SWITCHING PROTECTIVE EQUIPMENT IN CAPACITOR BANKS FOR SERIES COMPENSATION OF VERY LONG OVERHEAD LINES**
R.P.P. SMEETS, A.B. HOFSTEE (THE NETHERLANDS), L.-R. JÄNICKE, M. PUNGER (GERMANY)
- A3-305** **REQUIREMENTS ON THE INSULATION FOR DIFFERENT APPLICATIONS OF 400 kV CIRCUIT-BREAKERS IN POLLUTION, ICE AND SNOW ENVIRONMENTS**
I. GUTMAN, J. LUNDQUIST, D. HÜBINETTE (SWEDEN), T. OHNSTAD (NORWAY)
- A3-306** **EXTREME STRESSES ON GENERATOR CIRCUIT BREAKERS**
R.P.P. SMEETS, H.D. BARTS (THE NETHERLANDS), L. ZEHNDER (SWITZERLAND)

SC B1 Insulated Cables

PS1: Products development and new installations of High voltage AC and DC underground and submarine cable systems

- B1-101** **400 KV VIENNA THE VIENNA 400 KV NORTH INPUT**
JOHANNES VAVRA, MANFRED WANDA (AUSTRIA)
- B1-102** **DEVELOPMENT OF CABLE PRODUCTS AND SYSTEMS IN CHINA IN RECENT YEARS**
CAO XIAOLONG, LIU YING (CHINA)
- B1-103** **SUPPLY OF ISLANDS THROUGH LONG DISTANCE SUBMARINE CABLES: PROBLEMS AND PROSPECTS (CASE STUDY: CYCLADIC INTERCONNECTION).**
J. KABOURIS, S. EFSTATHIOU, A. MAISSIS, G. ANTONOPOULOS, G. GEORGANTZIS, M. PAPADOPOULOS, N. BOULAXIS (GREECE)
- B1-104** **DEMONSTRATION AND VERIFICATION TEST RESULTS OF 500-m HTS POWER CABLE**
MICHIHARU ICHIKAWA, TOSHIHIRO TAKAHASHI, HIROSHI SUZUKI, TATSUKI OKAMOTO, SHINICHI MUKOYAMA, MASASHI YAGI (JAPAN)
- B1-105** **A.C. ULTRA LONG-DISTANCE XLPE SUBMARINE CABLE INTERCONNECTION TO ISLAND**
S. HONDA, T. KAI, S. SAKUMA, H. ORITO, K. NATAYAMA, S. WATANABE (JAPAN)
- B1-106** **DEVELOPMENT OF SUPERCONDUCTING CABLE SYSTEM FOR BULK POWER DELIVERY**
S.I. JEON, H.M. JANG, S.C. HWANG, J.W. CHO, J.Y. KOO, B.S. MOON, S.K. LEE (KOREA)
- B1-107** **DEVELOPMENT OF A NEW 380 KV DOUBLE CIRCUIT XLPE INSULATED CABLE SYSTEM IN THE NETHERLANDS**
C.G.A. KOREMAN, G.L.P. AANHAANEN, J.C.M. VAN ROSSUM, R.F.F. KONING, W. BOONE, F.H. DE WILD (THE NETHERLANDS)
- B1-108** **ON-SITE PARTIAL DISCHARGE MEASUREMENT AND COMMISSIONING TEST: THE EXPERIENCE**
E. PULTRUM, R.J.B. GRUNTJES, S.A.M. VERHOEVEN (THE NETHERLANDS)
- B1-109** **IMPROVED PRODUCTIVITY FOR POWER CABLE MANUFACTURE**
H FAREMO, RN HAMPTON, J LEPPANEN, J-P LÖNNQUIST, C PHILIPPCZYK, KV POULSEN, A SMEDBERG, W WEISENBERG, J ÅHMAN
- B1-110** **THREE-CORE HV XLPE SUBMARINE CABLES FOR OFFSHORE APPLICATIONS**
G. HENNING, J. KARLSTRAND, M. SJÖBERG, A. ERICSSON (SWEDEN)
- B1-111** **THERMO MECHANICAL DESIGN OF XLPE INSULATED HV and EHV CABLES INSTALLED IN DUCT-MANHOLE AND PIPE SYSTEMS**
W. ZENGER (USA), B. GREGORY, SJ GALLOWAY (UK)

PS2: Operation and maintenance of High voltage AC and DC underground and submarine cable systems

- B1-201** **HIGH VOLTAGE OF (OIL FILLED) CABLES– OPTIMIZATION OF THE TIME FOR GROUNDING CONSIDERING SAFETY ASPECTS**
HÉDIO TATIZAWA, ERUCHIM WALDEMAR CITRON, PAULO FUTOSHI OBASE, NELSON M. MATSUO (BRAZIL)
- B1-202** **DEVELOPMENT OF ONE SPECIALIST SYSTEM TO DETERMINE THE DYNAMIC CURRENT CAPACITY OF UNDERGROUND TRANSMISSION LINES WITH XLPE CABLES**
IVO TEIXEIRA DOMINGUES, GIL FORTES VASCONCELOS, IVAN TEIXEIRA DE OLIVEIRA, MIGUEL ANGEL HERNANDEZ TORRES, NELSON KAGAN, SERGIO LUIS SALOMON CABRAL, WALTER PINHEIRO, WOONG JIN LEE (BRAZIL)
- B1-203** **APPLICATION OF DISTRIBUTED FIBRE OPTIC TEMPERATURE SENSING ON BC HYDRO'S 525kV SUBMARINE CABLE SYSTEM**
S. CHERUKUPALLI, G. A. MACPHAIL, JOSEPH JUE, J.H. GURNEY (CANADA)
- B1-204** **REPORT ON THE USE OF EXTRUDED CABLES ON THE FRENCH GRID**
M. LE STUM, L. BENARD, L. LANDUCCI, F. LESUR, M.H. LUTON, L. MOREAU (FRANCE)
- B1-205** **ON SITE PD DIAGNOSIS ON POWER CABLES USING OSCILLATING VOLTAGES**
FRANK PETZOLD, MICHAEL BEIGERT, A. BÖVINGLOH (GERMANY)
- B1-206** **FAULT LOCATION ALGORITHM FOR UNDERGROUND POWER CABLES USING ANALYTIC METHOD**
S.W. MIN, J.K. PARK, S.R. NAM, S.H. KANG, W.K. PARK (KOREA)
- B1-207** **MOVED TO PREFERENTIAL SUBJECT 3, NEW REFERENCE B1-305**
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- B1-208** **VORTEX INDUCED VIBRATION ON SUBMARINE CABLES**
G.E. BALOG, K. BJØRLØW-LARSEN, A. ERICSSON, B. DELLBY
- B1-209** **DIAGNOSTIC TESTING OF HIGH VOLTAGE WATER TREED XLPE CABLES**
SVERRE HVIDSTEN, HALLVARD FAREMO, JAN TORE BENJAMINSEN (NORWAY)
- B1-210** **THERMAL MONITORING OF HIGH VOLTAGE CABLES**
ALEKSANDRA POPOVAC-DAMLJANOVIĆ, STOJAN NIKOLAJEVIĆ, MILUTIN SREDOJEVIĆ, ŽARKO JANDA (SERBIA AND MONTENEGRO)
- B1-211** **400 kV UNDERGROUND CABLES IN RURAL AREAS**
CHRISTIAN JENSEN (DENMARK), PIERRE ARGAUT (FRANCE)

PS3: Cable systems in the changing operating environment

- B1-301** **A NEW PROCEDURE TO COMPARE THE SOCIAL COSTS OF EHV-HV OVERHEAD LINES AND UNDERGROUND XLPE CABLES**
CLAUDIO DI MARIO, ROBERTO BENATO, ARTURO LORENZONI, MARCELLO DEL BRENNIA, ERNESTO ZACCONE (ITALY)
- B1-302** **THE NEW TURBIGO-RHO 380 KV TRANSMISSION LINE : AN EXAMPLE OF THE USE OF UNDERGROUND XLPE CABLES IN A MESHED TRANSMISSION GRID**
R. RENDINA, M. REBOLINI, G. BRUNO, A. POSATI, F. BOCCHI, M. MARELLI, A. ORINI (ITALY)
- B1-303** **RECENT INSTALLATION TECHNOLOGY FOR XLPE CABLE IN JAPAN**
KINYA FUKUDA, TERUMITSU AIBA, NAOKI TAKINAMI, TSUYOSI AOKI, MUNEHISA MITANI, H. TANAKA (JAPAN)
- B1-304** **ITALY-AUSTRIA GIL IN THE NEW PLANNED RAILWAY GALLERIES FORTEZZA-INNSBRUCK UNDER BRENNER PASS**
R. BENATO, P. BRUNELLO, L. FELLIN, A. PAOLUCCI, E.M. CARLINI, C. DI MARIO (ITALY), M. MUHR, G. KNOLLSEISEN, R. WOSCHITZ, M. LAUBEGGER, W. STROPPIA, H. WÖRLE (AUSTRIA)
- B1-305** **A DYNAMIC RATING SYSTEM FOR AN EXISTING 150 KV POWER CONNECTION CONSISTING OF AN OVERHEAD LINE AND AN UNDERGROUND POWER CABLE**
F.H. DE WILD, R. TREKOP, J.C. SMIT (THE NETHERLANDS)

SC B2 Overhead lines

PS1: New Developments of Geographical Information and asset management for Overhead lines System (Common session with D2)

- B2 / D2 -101** **TRANSMISSION LINE UP-RATING DESIGN USING SURVEY DATA FROM AIRBORNE LIDAR**
ANA PAULA BAUNGARTEN KERSTING, MAURICIO MÜLLER, JOÃO NELSON HOFFMANN (BRAZIL)
- B2 / D2-102** **EXPERIENCES AND POSSIBILITIES OF USING MOBILE TERMINAL IN GRID MAINTENANCE**
ARI SILFVERBERG, MARCUS STENSTRAND, MAURI RATILAINEN, PASI TURUNEN (FINLAND)
- B2 / D2-103** **THE GEOGRAPHICAL INFORMATION SYSTEM USED AT RTE FOR ASSET MANAGEMENT MAPPING CASE OF VEGETATION MANAGEMENT SOFTWARE**
M. DEVELEY, G. BUFFIERE (FRANCE)
- B2 / D2-104** **OVERHEAD LINES MANAGEMENT AND PLANNING OPTIMIZATION USING GEOGRAPHICAL INFORMATION SYSTEMS**
K. TIGAS, D. AGORIS, V. KILIAS, P. STRATIS, M. PSSALLIDAS, A. ALEXANDRIDIS, E. PYRGIOTI, P. CHAVIAROPOULOS, A. NERIS, I. VITELLAS (GREECE)
- B2 / D2-105** **KYUSHU ELECTRIC'S ERP SYSTEM DEVELOPMENT AND OPERATION FOR OVERHEAD LINES SYSTEM**
TAKAFUMI UEMURA, TAKASHI OIKI, MASAOKI OKA, YUKIKO NISHIOKA (JAPAN)
- B2 / D2-106** **DEVELOPMENT OF POWER TRANSMISSION LINE INSPECTION SYSTEM BY UNMANNED HELICOPTER**
YOJI SHIMO (JAPAN)
- B2 / D2-107** **TAKING ACCURATE MEASUREMENTS OF HIGH VOLTAGE INSTALLATIONS WITH LASER RANGE SCANNER AND GPS**
J. GOMES-MOTA, A. VALE, A. MATOS-ANDRÉ, M. I. RIBEIRO (PORTUGAL)
- B2 / D2-108** **MULTISPECTRAL (V, UV, IR) AERIAL SURVEY OF EHV OVERHEAD LINES IN THE ROMANIAN POWER GRID**
STELIAN GAL, IOAN DIACONU, MARIUS OLTEAN, BOGDAN GAL, ROMANIA
- B2 / D2-109** **BENEFITS OF INTEGRATED INFORMATIONAL, GEOGRAPHICAL AND ASSET MANAGEMENT SYSTEM FOR POWER UTILITY NETWORKS**
M. MARINSEK, S. JAMSEK, B.BARL (SLOVENIA) , B.MEKHANOSHIN, A.BORODIN, K.MEKHANOSHIN , V.SHKAPTSOV (RUSSIA)
- B2 / D2-110** **GEOREFERENTIAL VIDEO FOR LOCATED ACCESS ROAD AND STRINGING TENSION EQUIPMENT PLACES IN CVG EDELCA EXISTING TRANSMISSION LINES**
JOSE A. PARDIÑAS, CARLOS GARCÍA A, ANIBAL DAO, N. DE LA VILLE (VENEZUELA)

PS2: OHL Design : Deterministic and Probabilistic Methods comparison

- B2-201** **ASSESSMENT OF ENVIRONMENTAL STATISTICS AS AN ACCESSIBLE BREAKTHROUGH TO IMPROVE OHL DESIGN**
AUREO PINHEIRO RUFFIER, AMAURI ALVES MENEZES JR, JOÃO IGNÁCIO DA SILVA FILHO (BRAZIL)
- B2-202** **WIND LOADS ON METALLIC LATTICED TRANSMISSION LINE TOWERS**
AFONSO DE OLIVEIRA E SILVA, JULIO CESAR PINTO DE MEDEIROS, ACIR MÉRCIO LOREDO-SOUZA, MARCELO MAIA ROCHA, LEANDRO INÁCIO RIPPEL, ELVIS ANTÔNIO CARPEGGIANI, GUSTAVO JAVIER ZANI NUNES (BRAZIL)
- B2-203** **ASSESSMENT OF EFFORTS DUE TO EXTREME WIND ON OVERHEAD LINES IN France**
M. LE DU, S. PAREY, C. LAURENT, F. HUGUET (FRANCE)
- B2-204** **A 400 KV OHTL IN MEXICO FACING PARTICULAR RELIABILITY, ENVIRONMENTAL AND DESIGN PROBLEMS.**
STEFANO VILLA, NICOLA ZANINI, MAURIZIO LEVA (ITALY), CARLOS VILLEGAS VILLAGRAN, CUAUHTEMOC CORDERO MACIAS (MEXICO)
- B2-205** **LINE PERFORMANCE ESTIMATOR SOFTWARE : CALCULATIONS OF LIGHTNING, POLLUTION AND ICE FAILURE RATES COMPARED WITH SERVICE RECORDS**
I. GUTMAN, LARS WALLIN, J. LUNDQUIST (SWEDEN), K. HALSAN (NORWAY), E. SOLOMONIK (RUSSIA), W. VOSLOO (SOUTH AFRICA)
- B2-206** **CARTOGRAPHIC REPRESENTATION OF THE VENEZUELAN KERAUNIC ACTIVITY**
JAVIER TARAZONA, ALBERTO URDANETA, CARLOS FERRO (VENEZUELA)

PS3: New components and new Diagnosis Tools & Methods for OHL

- B2-301** **ECONOMIC OPTIMIZATION FOR TRANSMISSION LINE ASSET RENEWAL**
G.F. BRENNAN (AUSTRALIA)
- B2-302** **MICROSYSTEMS ARRAY FOR LIVE HIGH VOLTAGE LINES MONITORING**
J.L. LILIE, S. GUERARD, J. DESTINÉ, E. CLOET (BELGIUM)
- B2-303** **OVERHEAD TRANSMISSION LINES EVALUATION OF POST-ELASTIC BEHAVIOR OF LINE COMPONENTS**
MARC CHARBONNEAU, DENIS BANVILLE, PIERRE GUILBAULT, PIERRE VINCENT, GHYSLAINE MCCLURE, XIAOHONG ZHANG (CANADA), TORE HOLMAS (NORWAY)
- B2-304** **NEW APPROACH TO OVERHEAD LINE CONDUCTOR TEMPERATURE MEASUREMENT BY PASSIVE REMOTE SURFACE ACOUSTIC WAVE SENSORS**
TEMINOVA RENATA, VOLKER HINRICHSSEN, JENS FREESE, THOMAS HARTKOPF, MANFRED HUDASCH, CLAUD NEUMANN, RALF BEBENSEE (GERMANY), MARTIN WEIBEL (SWITZERLAND)

- B2-305** **USE OF STATISTICAL TOOLS FOR ASSESSMENT OF RESIDUAL LIFE OF TRANSMISSION LINES VIZ-A-VIZ STEPS TAKEN TO AUGMENT THE RELIABILITY OF TRANSMISSION NETWORK OF POWERGRID (INDIA)**
J. HAQUE, PANKAJ KUMAR, UMESH CHANDRA, HEMLATA VYAS, S.K. AGRAWAL (INDIA)
- B2-306** **TECHNIQUE FOR DETECTING CORROSION PART OF OPGW**
FUMITO MINOURA, KOICHI ADACHI (JAPAN)
- B2-307** **SILICON RUBBER INSULATORS PERFORMANCE EVALUATION IN JORDANIAN NATIONAL GRID**
AYED ABU SNOBAR, ALI ABU JALGIF (JORDAN)
- B2-308** **DAMAGE LIMIT OF COMPOSITE LONG ROD INSULATORS SUBJECTED TO CYCLIC LOADS**
JACEK WAŃKOWICZ, EWA STRUŻEWSKA, JERZY BIELECKI (POLAND)
- B2-309** **FACTORS AFFECTING THE PERFORMANCE OF SILICONE RUBBER INSULATORS**
IBRAHIM Y. AL-HAMOUDI (SAUDI ARABIA)
- B2-310** **SYSTEMS OF MONITORING OF HOISTED GROWTH UNDER OVERHEAD TRANSMISSION LINES**
R. GARCÍA FERNÁNDEZ, M. GARCÍA PELLICER (SPAIN)
- B2-311** **OVERHEAD LINE TEMPERATURE MONITORING PILOT PROJECT**
MARTIN WEIBEL, KARL IMHOF , WALTER SATTINGER, URS STEINEGGER, MAREK ZIMA (SUISSE), G. BIEDENBACH (GERMANY)
- B2-312** **LIVE WORKING DEVELOPMENT FOR EGAT'S 500 KV COMPACT LINE IN THAILAND**
K.PETCHSANTHAD (THAILAND)
- B2-313** **MEASURED DYNAMIC PERFORMANCE OF ELECTRICITY TRANSMISSION TOWERS FOLLOWING CONTROLLED BROKEN-WIRE EVENTS**
M CLARK, D J RICHARDS, D CLUTTERBUCK (UNITED KINGDOM)
- B2-314** **FIELD TESTING OF ACCR CONDUCTOR**
H.E. DÈVE, R. CLARK, J. STOVALL, R. WHAPHAM, W. QUESNEL (USA), S. BARRETT (CANADA)

SC B3 Substations

PS1: Life Management of Substations

- B3-101** **A SURVEY OF SHARED SUBSTATIONS**
ANTONIO VAREJÃO DE GODOY, RICARDO DE OLIVEIRA MELO, EDUARDO A MATOS DE BRITO (BRAZIL)
- B3-102** **SF6 LEAKS SEALING SOLUTION FOR GIS : NEEDS, PRINCIPLE, TESTS, IMPLEMENTATION, FEEDBACK**
C. ELLEAU, M. KOLODZIEJEK , P. PRIEUR, P. FLOCH, S. BOULET D'AURIA (FRANCE)
- B3-103** **SELECTION OF AN OPTIMAL MAINTENANCE AND REPLACEMENT STRATEGY OF H.V. EQUIPMENT BY A RISK ASSESSMENT PROCESS**
GERD BALZER, H.-J. HAUBRICH, C. NEUMANN, C. SCHORN (GERMANY), K. BAKIC (SLOVENIA)
- B3-104** **RISK BASED ASSET MANAGEMENT FOR SUBSTATIONS IN DISTRIBUTION NETWORKS CONSIDERING COMPONENT RELIABILITY**
MICHAEL SCHWAN, ARMIN SCHNETTLER, UWE ZICKLER, MICHAEL ROTH, WOLFRAM H. WELLBOW, ACHIM SCHNEIDER (GERMANY)
- B3-105** **REUSE TECHNOLOGY OF EHV SUBSTATION EQUIPMENT FOR OPTIMIZED USE OF SUBSTATION ASSETS**
HIROSHI YONEZAWA, TAKAYUKI KOBAYASHI, YAOJI ICHIKAWA (JAPAN)
- B3-106** **EXPERIENCE IN THE MONITORING AND DIAGNOSIS OF LSIS FOR SUBSTATIONS**
Y.H. LEE, Y. S. SHIN, Y.G. KIM, W.J. KANG, Y. J. SHIN (KOREA)
- B3-107** **EXPERT SYSTEMS FOR CONDITION AND MAINTENANCE ASSESSMENT OF HV EQUIPMENT FROM TRANSELECTRICA'S SUBSTATIONS**
CONSTANTIN MOLDOVEANU, CONSTANTIN RADU, CIPRIAN DIACONU, CRISTIAN POP SI VICTOR URSIANU, E. MIHALCEA (ROMANIA)
- B3-108** **RENEWAL OF SWEDISH TRANSMISSION SUBSTATIONS – IMPLEMENTING STATE OF THE ART TECHNOLOGIES**
B. FRANZÉN, H-E. OLOVSSON, E. BERGSTRÖM (SWEDEN)
- B3-109** **A FLEXIBLE APPROACH TO LIFE MANAGEMENT OF SUBSTATIONS**
JS FINN, E. WRIGHT, J. NIXON (UNITED KINGDOM)
- B3-110** **ASSESSMENT OF THE DYNAMIC PERFORMANCE OF FLEXIBLE BUSBAR SYSTEMS UNDER VARYING FAULT CONDITIONS**
TIM JESSON, TREVOR LAWRENCE, GRAHAM MADEN AND GUISEPPI SIMONELLI (UNITED KINGDOM)
- B3-111** **OPTIMAL STRATEGIES FOR SYSTEM WIDE PROTECTION AND CONTROL REPLACEMENT PROGRAMS**
P. MYRDA, E. A. UDREN, D. TATES, D. NOVOSEL (USA)

PS2: Substation Technology Developments and Implementation

- B3-201** **MOVED TO GROUP B1, NEW REFERENCE B1-304**
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- B3-202** **HARDWARE DESIGN OF SUBSTATION INTELLIGENT ELECTRONIC DEVICES WITH UML**
YUAN HAO, XU SHIMING (CHINA)
- B3-203** **PILOT APPLICATION WITH NON CONVENTIONAL INSTRUMENT TRANSFORMERS AND DIGITAL PROTECTIONS USING IEC PROTOCOL FOR COMMUNICATION.**
D. CHATREFOU, P. PONCHON, D. DUPLAN, M. OSBOURNE (UK).
- B3-204** **IMPROVEMENT OF OUTDOOR GIS BASED ON SERVICE EXPERIENCE IN JAPAN**
K. YOKOTSU, K. KAWAKITA, H. YONEZAWA, T. SAKAI, T. YAMAGIWA, K. UEHARA (JAPAN)
- B3-205** **ADVANCED SUBSTATION MAINTENANCE USING KNOWLEDGE DATABASE**
K. NAKAHITO, D. TAKAYAMA, Y. HASEGAWA (JAPAN)
- B3-206** **SUBSTATION DESIGN USING PHASE TO PHASE INSULATION**
ANDREW RENTON (NEW ZEALAND)
- B3-207** **NEW TECHNOLOGIES IN SUBSTATION NEW WAYS OF WORKING**
CARLOS SAMITIER, JAVIER FIGUERA ,JUAN CARLOS SÁNCHEZ (SPAIN)
- B3-208** **FIELD EXPERIENCES FROM USING PC SOFTWARE FOR PROTECTION AND CONTROL OF AC SUBSTATIONS.**
P. NORBERG, A. FOGELBERG, A. JOHNSON (SWEDEN)
- B3-209** **AUTOMATIC CONTROL SYSTEM FOR THE SPARE UNIT CHANGEOVER IN A THREE AUTOTRANSFORMERS ARRANGEMENT OF EL FURRIAL SUBSTATION 400/230/34.5 KV**
MARÍA MARVAL, ALFREDO SERRANO (VENEZUELA)

PS3: The Environment

- B3-301** **PERFORMANCE OF 150kV RTV SIR COATED SUBSTATIONS INSULATORS UNDER EXTREME MARINE POLLUTION CONDITIONS**
K. SIDERAKIS , E. THALASSINAKIS, D. AGORIS, I. VITELLAS D. TSANAKAS, J. STEFANAKIS (GREECE)

SC B4 HVDC and Power Electronics

PS1: New HVDC and Power Electronic (Pe) Technologies and Projects

- B4-101** **USING POWER ELECTRONICS AT HYDRO-QUEBEC TO SECURE STRATEGIC LINES DURING ICE STORMS**
MICHEL GRANGER, ALAIN DÉRY, ANTONIO DUTIL, PIERRE BAILLARGEON, ALAIN BLAIS (CANADA), COLIN DAVIDSON, C. HORWILL (UNITED KINGDOM)
- B4-102** **RESEARCH AND APPLICATION OF SERIES COMPENSATION AND THYRISTOR CONTROLLED SERIES COMPENSATION IN CHINA**
GUO JIANBO, WU SHOUYUAN, LI GUOFU, TANG GUANGFU, ZHOU XIAOXIN, LIN JIMIN (CHINA)
- B4-103** **VSC BASED IMBALANCE COMPENSATOR FOR RAILWAY SUBSTATIONS**
B. PASZKIER, M. ZOUITI, JL. JAVERZAC, JP. PERRET, C. COURTOIS (FRANCE)
- B4-104** **FEASIBILITY STUDIES OF THE HVDC SUBMARINE INTERCONNECTION BETWEEN THE SPANISH PENINSULA AND THE BALEARIC ISLAND OF MALLORCA**
D. ALVIRA, J. AREVALO, C. BERMUDEZ, R. GRANADINO, A. GRANDA (SPAIN), C. PINCELLA, G.P. STIGLIANO, R. VAILATI (ITALY)
- B4-105** **HVDC WITH VOLTAGE SOURCE CONVERTERS AND EXTRUDED CABLES FOR UP TO +/- 300 KV AND 1000 MW**
B. JACOBSON, Y. JIANG- HÄFNER, P. REY, G. ASPLUND, M. JEROENSE, A. GUSTAFSSON, M. BERGKVIST (SWEDEN)
- B4-106** **POWER TRANSMISSION WITH HVDC AT 800 Kv**
V. LESCALE, U. ÅSTRÖM, J. NUNES, D. WU (SWEDEN), L. WEIMERS (CHINA)
- B4-107** **EMITTER TURN-OFF (ETO) THYRISTOR: AN EMERGING POWER SEMICONDUCTOR SWITCH WITH LOWER COST, IMPROVED RELIABILITY AND SCALABILITY OF FACTS CONTROLLERS**
ALEX Q. HUANG, CHONG HAN, BIN CHEN, CHONG HAN, ZHONG DU, SUBHASHISH BHATTACHARYA, MESUT BARAN, ABDEL-ATY EDRIS, MIKE INGRAM, STANLEY ATCITY (USA)

PS2: Issues Concerning HVDC and Power Electronic Projects

- B4-201** **HVDC CONVERTER TRANSFORMER PERFORMANCE ON ITAIPU SYSTEM**
G. M. BASTOS, J. C. BRANDÃO, J. SANTELLI, R. ALBUQUERQUE, DR. J.C.MENDES (BRAZIL), J. HAJEK (SWEDEN)
- B4-202** **SURVEY OF THE RELIABILITY OF HVDC SYSTEMS THROUGHOUT THE WORLD DURING 2003 - 2004**
I.VANCERS A.LEIRBUKT D.J.CHRISTOFERSEN M.G.BENNETT (ON BEHALF OF STUDY COMMITTEE B4)
- B4-203** **EXPERIENCE FEEDBACK ON THE CROSS-CHANNEL 2000 MW LINK AFTER 20 YEARS OF OPERATION**
S.DUMAS, X.BOURGEAT (FRANCE), D.R. MONKHOUSE, D.W. SWANSON (UNITED KINGDOM)
- B4-204** **EXPERIENCE WITH BLOCKING DEVICES DURING MONOPOLAR OPERATION OF ±500KV, 2000 MW TALCHER-KOLAR HVDC SYSTEM IN INDIA**
R N NAYAK, R P SASMAL, S SEN (INDIA), P. RIEDEL, B. PELLY (GERMANY) P. RIEDEL (USA)
- B4-205** **ENVIRONMENTAL ISSUES ON THE DEVELOPMENT OF THE NEW HVDC LINK SARDINIA ISLAND – ITALIAN PENINSULA (SAPEI PROJECT)**
M. REBOLINI, C. DI MARIO, L. MATTIELLO, A. GIORGI, G. PAZIENZA, R. RENDINA, R. GUANDALINI, C. PINCELLA, G.SIMIOLI, R. NICCOLAI (ITALY)
- B4-206** **NEW ZEALAND BIPOLAR HVDC EARTH/SEA RETURN OPERATION - ENVIRONMENTAL EXPERIENCES**
MICHAEL T. O'BRIEN, MOHAMED ZAVAHIR, MARSHALL CLARK, DAVE BOYLE (NEW ZEALAND)
- B4-207** **CONSIDERATIONS REGARDING RI LIMITS FOR HIGH VOLTAGE HVDC OR FACTS STATIONS**
L. -E. JUHLIN, T. LARSSON, J. SKANSEN; E. PETERSSON (SWEDEN)
- B4-208** **OPERATION EXPERIENCE FROM BULK POWER HVDC LINKS FROM THREE GORGES COMPLEX**
R. DASS, B. LINDEN, S. RINALDO (SWEDEN), S.P. CHEUNG (CHINA)
- B4-209** **LEETS, A TOOL FOR THE ENVIRONMENTAL AND ECONOMIC ANALYSIS OF TRANSMISSION SYSTEMS**
GARY STEVENS, BEN PHILPOT, PHILIP SINCLAIR, PHILIPPE ADAM, PIETRO ANTONELLI, ENRICO CARLINI, WIL KLING, PAOLA BRESESTI (INT.)
- B4-210** **A NOVEL OPERATOR TRAINING SIMULATOR FOR SYSTEM DISPATCH OF MULTI-FUNCTIONAL FACTS CONTROLLERS**
SHALOM ZELINGHER, BRUCE FARDANESH, EDVINA UZUNOVIC, MICHAEL PARISI, LIANA HOPKINS, ABDEL-ATY EDRIS, JOE H. CHOW, XIA JIANG, XINGHAO FANG (USA)

PS3: Role of HVDC and Facts to assist Sytem Performance

- B4-301** **BASSLINK HVDC DESIGN PROVISIONS SUPPORTING AC SYSTEM PERFORMANCE**
STEPHEN BEX, TONY FIELD, MARIAN PIEKUTOWSKI, PETER NESBITT, MICHAEL GREEN, LUKE FALLA, MIKE CARTER, ANDREAS KOELZ, THOMAS WESTERWELLER (AUSTRALIA)
- B4-302** **THE INTEGRATION OF REMOTE HYDROELECTRIC PLANTS INTO THE BRAZILIAN NETWORK USING HVDC TRANSMISSION**
JOHN GRAHAM (BRAZIL), ALF PERSSON (SWEDEN), GEIR BILEDT (BRAZIL)
- B4-303** **ANALYSIS ON THE DYNAMIC PERFORMANCE OF MIDC SYSTEM IN CHINA SOUTHERN POWER GRID**
KAIJIAN OU, HONG RAO, CHAO HONG, LICHENG LI (CHINA)

- B4-304** **ADVANTAGES OF LARGE AC/DC SYSTEM INTERCONNECTIONS**
DUSAN POVH, DIETMAR RETZMANN, E. TELTSCH (GERMANY), RAFAEL MIHALIC, U. KERIN (SLOVENIA)
- B4-305** **TESTING OF TCSC DAMPING CONTROLLER INSTALLED IN A TIE LINE INTERCONNECTING TWO LARGE AREAS - A CASE STUDY**
R N NAYAK , VIKAS SAKSENA, Y.K.SEHGAL, SUBIR SEN, MANJU GUPTA (INDIA)
- B4-306** **CONTROL STRATEGIES STUDY FOR KEPCO UPFC OPERATION AUTOMATION IN KOREAN SUB-TRANSMISSION SYSTEM**
B.H. CHANG, S.Y. KIM, J. S. YOON, S. P. MOON, B. M. KWAK, D.H. BAEK, J.B. CHOO (KOREA)
- B4-307** **MAGNETICALLY CONTROLLED SHUNT REACTOR APPLICATION FOR AC HV AND EHV TRANSMISSION LINES**
A. BRYANTSEV, V. DOROFEEV, M. ZILBERMAN, A. SMIRNOV, S. SMOLOVIK (RUSSIA)
- B4-308** **APPLICATION OF A TCSC-SCHEME TO DYNAMICALLY CONTROL THE POWER TRANSFER ON A 380-KV TIE LINE**
A. HAMMAD, S. LÄDERACH, D. MOOR (SUISSE)
- B4-309** **A NEW FACILITY FOR TESTING HVDC AND SVC THYRISTOR VALVES**
M L WOODHOUSE, T. SIMANWE (UNITED KINGDOM)
- B4-310** **TCSC ON AC POWER INTERCONNECTOR BETWEEN THE EASTERN AND WESTERN GRIDS OF INDIA - A FEW DESIGN ASPECTS**
R. GRÜNBAUM, G. INGESTRÖM, G. STRÖMBERG (SWEDEN), S. CHAKRABORTY, R.N. NAYAK, Y.K. SEGHAL, S. SEN (INDIA)

SC B5 Protection and Automation

PS1: Impact of IEC61850 on Protection and Automation

- B5-101** **IEC 61850: IMPACT ON SUBSTATION AUTOMATION PRODUCTS AND ARCHITECTURES**
LUC HOSSENLOPP (FRANCE), ERIC GUIMOND (CANADA)
- B5-102** **IEC 61850: SYSTEM CONFIGURATION INCLUDING HARMONIZATION WITH IEC 61970/IEC 61968**
L. HOSSENLOPP, T. COSTE, E. LAMBERT (FRANCE)
- B5-103** **EFFICIENT MIGRATION TO IEC 61850 BY SMART GATEWAYS**
KARL-JOSEF JUNGLAS, H. KESSELMEIER, HEIKO ENGLERT, NORBERT BEHR, JÜRGEN HOGGRÄFER, V. PITZ (GERMANY)
- B5-104** **IMPLEMENTATION EXPERIENCE ON IEC 61850-BASED SUBSTATION AUTOMATION SYSTEMS**
H.J. HERRMANN, C. HOGA, G. WONG (GERMANY)
- B5-105** **FAULT-TOLERANT TECHNOLOGY TO INCREASE RELIABILITY FOR IEC 61850-BASED SUBSTATION AUTOMATION SYSTEM**
S.I.LIM, S.J.LEE, S.S.HAN, D.W.LEE, W.J.PAN, D.H. PARK, M.S. CHOI, H.Y. KIM (KOREA)
- B5-106** **INTEGRA PROJECT – APPLYING IEC 61850 TECHNOLOGY**
F. MATOS, R. CARTAXO, A. MENESES, R. PAULO, A. CARRAPATOSO (PORTUGAL)
- B5-107** **STANDARD IEC 61850 OPENS POSSIBILITY TO DEVELOP NEW MORE EFFICIENT ARCHITECTURES OF SUBSTATION AUTOMATION AND PROTECTION SYSTEMS**
J. CURK, I. KOBAL, G. PARKELJ (SLOVENIA)
- B5-108** **THE UNIVERSITY CITY SAS. FIRST PROJECT WITHIN IBERDROLA GROUP USING IEC 61850 FOR A COMPLETE SUBSTATION. FINAL EXPERIENCES AND FUTURE EXPECTATIONS**
J. TORRES, J. AMANTEGUI, A.CEREZO, A. RIVAS, F. COBELO (SPAIN)
- B5-109** **EXPERIENCE WITH IEC 61850 IN THE REFURBISHMENT OF AN IMPORTANT EUROPEAN 380KV SUBSTATION**
SERGE LÄDERACH, WALTER BAASS, KLAUS-PETER BRAND, P. REINHARDT (SUISSE)
- B5-110** **REQUIREMENTS OF INTEROPERABLE DISTRIBUTED FUNCTIONS AND ARCHITECTURES IN IEC 61850-BASED SA SYSTEMS**
KLAUS-PETER BRAND, PETER RIETMANN, TETSUJI MAEDA, WOLFGANG WIMMER (SWITZERLAND)
- B5-111** **TESTING OF IEC 61850 SAMPLED ANALOG VALUES BASED FUNCTIONS**
BENTON VANDIVER ALEXANDER APOSTOLOV (USA)
- B5-112** **OPTIMAL STRATEGIES FOR SYSTEM WIDE PROTECTION AND CONTROL REPLACEMENT PROGRAMS**
P. MYRDA, E. A. UDREN, D. TATES, D. NOVOSEL (USA)

PS2: Protection Systems and Substation Automation for Major disturbances

- B5-201** **CHANGE OF PROTECTION PRINCIPLE TO AVOID CASCADE TRIPPING IN A SERIES-COMPENSATION, PARALLEL LINE APPLICATION**
F. V. GONZÁLEZ (ARGENTINA)
- B5-202** **MINIMIZING RISKS OF CASCADE TRIPPING A SYSTEMIC ANALYSIS OF COMPONENT PROTECTION**
RUI MENEZES DE MORAES, RAUL BALBI SOLLERO, JORGE MIGUEL ORDACGI FO (BRAZIL)
- B5-203** **SPECIAL PROTECTION SCHEMES IN OPERATION AT ITAIPU POWER PLANT**
RUI JOVITA G. CORRÊA DA SILVA, MARCELINO PEREIRA DE ALMEIDA, JOSÉ BENEDITO MOTA JÚNIOR, EVONYR BORDIN FILHO, ROBSON ALMIR DE OLIVEIRA, FERNANDO VEGA DAHER, JOSÉ GREGÓRIO ACHA NAVARRO, ALEXANDRE GONÇALVES LEITE (BRAZIL)
- B5-204** **POWER RESTORATION PRACTICES – THE BRAZILIAN EXPERIENCE**
PAULO GOMES, PAULO GOMES ANTONIO DE PÁDUA GUARINI (BRAZIL)
- B5-205** **LOSS OF SYNCHRONISM DETECTION, A STRATEGIC FUNCTION FOR POWER SYSTEM PROTECTION**
ROBERT GRONDIN, MANUELA DOBRESU, ANNISSA HENICHE, GILLES TRUDEL, MICHEL ROUSSEAU (CANADA), BRIAN KIRBY, SIMON RICHARDS (UNITED KINGDOM), ALEXANDER APOSTOLOV (USA)
- B5-206** **USE OF INTEGRATED AC/DC SPECIAL PROTECTION SCHEME AT MANITOBA HYDRO**
NARINDER S. DHALIWAL, J. BRETT DAVIES, DAVID A. N. JACOBSON (CANADA), RICK GONZALEZ (USA)
- B5-207** **MAINTAINING SYSTEM INTEGRITY TO PREVENT CASCADING BLACKOUT**
MENG, DING ZHONG (HONG KONG)
- B5-208** **WIDE AREA VOLTAGE PROTECTION**
S. CORSI, G. CAPPAL, I. VALADÈ, (ITALY)
- B5-209** **EXPERIENCES AND EVOLUTION OF SPECIAL PROTECTION SYSTEMS IN JAPAN**
JIROU. TSUKIDA, HIDEYUKI. KAMEDA, TATSUNORI. YOSHIZUMI, TETSUO. MATSUSHIMA, YOSHIHIRO. KAWASAKI, MASAJI. USUI (JAPAN)
- B5-210** **PHASOR MEASUREMENT UNIT (PMU) APPLICATIONS IN THE TRANSMISSION NETWORK OF CFE MEXICO**
MIGUEL A. SILVA PERUYERO, CARLOS G. MELÉNDEZ ROMÁN (MEXICO)
- B5-211** **COUPLING OF NETWORKS WITH A NEW SYSTEM FOR PREDICTING DYNAMIC EQUALIZING CURRENTS**
J.M.A. NUIJTEN, M.J.M. VAN RIET, A. GESCHIERE, F.L. BALDINGER, W.M. VAN BUIJTENEN (THE NETHERLANDS)

- B5-212** **DEFENSE PLAN AGAINST MAJOR DISTURBANCES IN THE ROMANIAN POWER GRID**
ANCA POPESCU, MARIAN CERNAT, MIRCEA PETRAN, STELIAN GAL, FLORIN BALASIU
- B5-213** **MODERN SYSTEM PROTECTION SCHEMES REALIZATION IN LARGE HYDRO POWER PLANT AUTOMATION:
LOCAL AND SYSTEM ASPECTS**
ANDREY GROBOVOY, ALEXANDER DOMYSHEV, ALEXEY OSAK, VALERY RODNIKOV, YURY VOROBYEV (RUSSIA)
- B5-214** **RUNNING FAIL-SAFE SOFTWARE AND HARDWARE TOOLS FOR THE INSTABILITY PREVENTION
AUTOMATION COMPLEX**
D-R GLUSKIN I., D-R DMITRIEV K., D-R IVANOV I., KOSOLAPOV A., ROSSOVSKI E., D-R LANDMAN A., D-R PETROV A., PETROV A., POPOV G., SAKAEV O, D. LUBARSKY (RUSSIA)
- B5-215** **EVOLUTION IN THE SPANISH POWER SYSTEM: NEW PROTECTION COORDINATION CRITERIA AND
CRITICAL CLEARING TIME CALCULATION METHODOLOGY**
J. RIBOT, S. LÓPEZ, F. RODRÍGUEZ, C. FERNÁNDEZ, P. LOZANO, S. MARÍN, J.L. MARTÍNEZ, G. MOLINA, JM. ROCA, B. RODRÍGUEZ, G. NICOLAU, J. VALLINA, J. VAQUERO (SPAIN)
- B5-216** **OPERATIONAL EXPERIENCE WITH WIDE AREA MEASUREMENT SYSTEMS**
WALTER SATTINGER, JOACHIM BERTSCH, P. REINHARDT (SUISSE)

SC C1 System Development and Economics

PS1: Drivers in Capital Investment Decisions and Power System Design

- C1-101** **REGULATION AND STAKEHOLDER DRIVERS FOR CAPITAL INVESTMENT AND POWER SYSTEM DESIGN IN AUSTRALIA AND NEW ZEALAND**
S. CLARK, N. PUSHARAJ, A. MANGLICK, D. BOYLE, A. LI, D. BONES, T. MILLER, P. SOUTHWELL (AUSTRALIA)
- C1-102** **ECONOMICAL EVALUATION OF WIND ENERGY IMPACT ON THE EGYPTIAN POWER SYSTEM**
E. MOUSSA, F. TAHER, M. EL-SAYED, M. SALAH EL SOBKI (JR.) (EGYPT)
- C1-103** **ELECTRIFICATION OF OLYMPIC INSTALLATIONS IN THE ATHENS 2004 OLYMPIC GAMES**
D. STAVROPOULOS, G. ANTONOPOULOS, N. DROSSOS, A. DRATSAS, G. KYRITSIS, G. GEORGANTZIS, S. PAPATHANASSIOU (GREECE)
- C1-104** **PLANNING OF TRANSMISSION CORRIDOR IN NORTHERN REGIONAL GRID OF INDIA – CASE STUDY FOR HIGH CAPACITY LINK BETWEEN BALIA AND BHIWADI**
V. RAMAKRISHNA, A.K. ASTHANA (INDIA)
- C1-105** **TRANSMISSION NETWORK PLANNING IN IRELAND IN AN OPEN MARKET ENVIRONMENT**
A. SLEATOR, N. AMELJENDA, Y. COUGHLAN, J. KELLIHER, K. MATTHEWS (IRELAND)
- C1-106** **COST ASSESSMENT REGARDING TRANSMISSION AND DISTRIBUTION SYSTEM ASSETS. METHODOLOGY AND RESULTS OF A SYSTEMATIC ANALYSIS ON THE ITALIAN ELECTRICAL SYSTEM**
E. COLOMBO, V. ALLEGGRANZA (ITALY)
- C1-107** **METHODOLOGY OF POWER SYSTEM REDESIGN AIMED AT REDUCING CAPITAL INVESTMENT AND MAINTENANCE COSTS FOR AGED ASSETS**
MAKOTO YAGI, MASAYUKI HAMANO, TAIICHI KAIZUKA, AIKIJ MATSUDA (JAPAN)
- C1-108** **DEVELOPMENT OF AN ELECTRIC INFRASTRUCTURE AT SEA**
W.L. KLING, C.P.J. JANSEN, J.F. GROEMAN, G. VAN DER LEE, I.O. DOORNBOS, H. BOOMSMA, B.A. WILBRINK, F. WISSELINK (THE NETHERLANDS)
- C1-109** **VULNERABILITY OF THE NORDIC POWER SYSTEM : ANALYSIS AND PROPOSED ACTIONS**
GERARD L. DOORMAN, GERD H. KJØLLE, K. UHLEN, E.S. HUSE (NORWAY)
- C1-110** **NATIONAL GOALS FOR RENEWABLE GENERATION IN PORTUGAL AN ORGANIZATIONAL AND TECHNICAL CHALLENGE FROM THE POINT OF VIEW OF THE TRANSMISSION SYSTEM OPERATOR**
J. RICARDO, M. PINTO, R. RODRIGUES, J. MOREIRA, B. NUNES (PORTUGAL)
- C1-111** **PRINCIPLES OF INVESTMENT POLICY AND DRIVERS IN INVESTMENT IN RUSSIA'S ELECTRIC POWER INDUSTRY**
N.I. VOROPAI*, V.V. TRUFANOV, G.I. SHEVELEVA (RUSSIA)
- C1-112** **THE SUFFICIENCY OF TRANSMISSION CAPACITY TO ACCOMMODATE WIND FARMS AND MANAGE SECURITY OF SUPPLY**
K. BELL, (UNITED KINGDOM)
- C1-113** **IMPACT OF REGULATORY ENVIRONMENTS ON INVESTMENT DECISIONS**
V. NAIDOO, K. LAKMEEHARAN ON BEHALF OF WG C1.6
- C1-114** **PLANNING FOR THE INTEGRATION OF ON-SHORE RENEWABLE GENERATION FOR THE GB TRANSMISSION SYSTEM**
C BAYFIELD, S WOOD, A HIORNS, C TRIKHA (UNITED KINGDOM)
- C1-115** **ECONOMIC ASSESSMENT FOR TRANSMISSION UPGRADES IN A DEREGULATED MARKET**
JINXIANG ZHU, HENRY CHAO, RANA MUKERJI, DAVID WANG, LINDA BROWN (USA)
- PS2: Uncertainties of Load, Generation, Interconnection and Trades and Development Planning**
- C1-201** **ADEQUACY OF GENERATING CAPACITIES UNDER THE ASPECTS OF DEMAND, RESOURCES, EMISSIONS AND COSTS UNTIL 2030**
GÜNTHER BRAUNER, GEORG PÖPPL (AUSTRIA)
- C1-202** **AN ATTEMPT TO CONSTRUCT A BRIDGE BETWEEN DETERMINISTIC AND PROBABILISTIC APPROACHES IN TRANSMISSION EXPANSION PLANNING – THE PLANTAC MODEL**
A.C.G. MELO, A.M. REI, L. MOULIN, J.O. SOTO, J.R.P. BARROS, M.S. PARENTONI, P. ALMEIDA, M.A.N. SILVEIRA, P.C.V. ESMERALDO, P. ALTAUR, J.L. SCAVASSA, A.M. LEITE DA SILVA (BRAZIL)
- C1-203** **TOWARDS A BETTER VISION FOR ELECTRICITY PLANNING TO ENHANCE SYSTEM SECURITY: ADDRESSING COMPLEX UNCERTAINTIES IN DEMAND FORECASTING**
K. YASSIN, R. KAMEL, H. MOUSTAFA, S. A. MAHMOUD (EGYPT)
- C1-204** **PLANNING OF HIGH VOLTAGE NETWORKS UNDER SPECIAL CONSIDERATION OF UNCERTAINTIES OF LOAD AND GENERATION**
CHRISTOPH MAURER, T. PAULUN, H.-J. HAUBRICH (GERMANY)
- C1-205** **INTEGRATION OF ON-SHORE AND OFF-SHORE WIND POWER STATIONS INTO THE GERMAN EXTRA HIGH VOLTAGE GRID**
YVONNE SABNICK, FRANK BERGER, WILHELM WINTER, MATTHIAS BOXBERGER, ECKHARD GREBE, MARTIN LÖSING (GERMANY)

- C1-206** **NETWORK PLANNING METHODOLOGY AND APPLICATION**
R. DE DIOS - P. MARTÍN (SPAIN)
- C1-207** **CANCELLED**
- C1-208** **ELECTRIC POWER SYSTEM PLANNING WITH THE UNCERTAINTY OF WIND GENERATION**
LESLIE BRYANS (UNITED KINGDOM) - ON BEHALF ON CIGRE WG C1.3
- PS3: Replacement/Refurbishment of Assets and Security of Supply**
- C1-301** **RELIABILITY ASSESSMENT OF CROATIAN POWER SYSTEM AFTER RECONNECTION OF UCTE 1 AND UCTE 2 SYNCHRONOUS ZONES**
S. NIKOLOVSKI, D. ŠLJIVAC, P. MARIĆ, I. MRAVAK, G. SLIPAC, Z. KOVAC (CROATIA)
- C1-302** **METHOD FOR THE PROBABILISTIC SECURITY ANALYSIS FOR TRANSMISSION GRIDS**
L. HAARLA, URHO PULKKINEN, K. SAARINEN, MIKKO KOSKINEN, JUSSI JYRINSALO (FINLAND)
- C1-303** **DECISION-MAKING PROCESS FOR REPLACEMENT VERSUS REFURBISHMENT RTE'S EXPERIENCE**
F. TROGNEUX, J. DUBOIS, P-A. FLEURY (FRANCE)
- C1-304** **THRESHOLD CRITERION FOR THE SYSTEM'S RELIABILITY ADEQUACY AND SECURITY LEVEL**
D. ELMAKIS, H. BENHAIM (ISRAEL)
- C1-305** **AGING ELECTRIC UTILITY SYSTEMS AND RELATED ASSET MANAGEMENT RESPONSES AND CHALLENGES**
JOE TONEGUZZO ON BEHALF OF CIGRE WG C1.1
- C1-306** **CANCELLED**
- C1-307** **CONTINUALLY IMPROVING ASSET MANAGEMENT CAPABILITY**
URSULA BRYAN, ALED WILLIAMS, STEVE MORRIS AND COLIN RAY (UNITED KINGDOM)
- C1-308** **OPTIMAL STRATEGIES FOR SYSTEM WIDE PROTECTION AND CONTROL REPLACEMENT PROGRAMS**
P. MYRDA, E. A. UDREN, D. TATES, D. NOVOSEL (USA)

SC C2 System Operation and Control

PS1: Development of Operational Security Standards/Grid Codes Driven by Increased Concerns for Critical Technical Malfunctions and Physical or Cyber Intrusions

- C2-101** **BRAZILIAN SYSTEM SECURITY STANDARDS: HOW TO MAXIMIZE TRANSMISSION SYSTEM LIMITS WITH AN ADEQUATE SECURITY LEVEL**
SAULO JOSÉ NASCIMENTO CISNEIROS (BRAZIL)
- C2-102** **CANCELLED**
- C2-103** **MINIMIZING THE COST OF GENERATION REDISPATCHING TAKING INTO ACCOUNT REMEDIAL ACTIONS**
B. DELOURME, A. LASNIER, H. LEFEBVRE, G. SIMÉANT (FRANCE)
- C2-104** **CONGESTION MANAGEMENT IN THE NEW MARKET ENVIRONMENT : THE ITALIAN APPROACH AND EXPERIENCE**
C.BRUNO, B.COVA, M.POZZI, F. BASSI, E.FIORINO, L.FRANCHI (ITALY)
- C2-105** **INTERNATIONAL GRID CODE DEVELOPMENTS FOR WIND TURBINES AND DC INTER-CONNECTORS**
GIUSEPPE DI MARZIO, OLAV BJARTE FOSSO (NORWAY)
- C2-106** **N-1 RELIABILITY CRITERION INTERPRETATION**
A. BONDARENKO, V. GERIKH (RUSSIA), V. KRESLINS (LATVIA)
- C2-107** **THE DEVELOPMENT OF A RELIABILITY STANDARD FOR THE SOUTH AFRICA POWER SYSTEM**
KANNAN LAKMEEHARAN, TERESA CAROLIN (SOUTH AFRICA)
- C2-108** **SECURITY CRITERIA FOR PLANNING AND OPERATION IN THE NEW GB MARKET**
KEITH BELL, NILTON GREEN, D. NICOL, CHANDRA TRIKHA (UNITED KINGDOM)

PS2: Operational Use of New Technology for Detection and Mitigation of Critical System Conditions

- C2-201** **REDUCING BLACKOUT RISK BY SYSTEM PROTECTION SCHEMES – DETECTION AND MITIGATION OF CRITICAL SYSTEM CONDITIONS**
PAULO GOMES, GUILHERME CARDOSO JUNIOR (BRAZIL)
- C2-202** **STUDY OF ONLINE SECURITY EVALUATION AND APPLICATION IN NATIONAL GRID OF CHINA**
XIN YAOZHONG, ZHANG ZHIGANG, LI CHENGUANG, TAO HONGZHU, ZHOU JI, LI YALUO, ZHOU JINGYANG, CHENG YUN, SHI JUNJIE, WANG HONG (CHINA)
- C2-203** **POSSIBILITIES OF APPLYING PHASE SHIFTING TRANSFORMERS IN THE ELECTRIC POWER SYSTEM OF THE CZECH REPUBLIC**
J.PTÁČEK, P.MODLITBA, S.VNOUČEK, J. ČERMÁK (CZECH REPUBLIC)
- C2-204** **PHASOR MEASUREMENT UNITS IN THE EASTERN DANISH POWER SYSTEM**
ARNE HEJDE NIELSEN, KNUD OLE HELGESEN PEDERSEN, PREBEN JØRGENSEN, JAN HAVSAGER, SØREN KRÜGER OLSEN, JOANA RASMUSSEN (DENMARK)
- C2-205** **CANCELLED**
- C2-206** **EXPERIENCE GAINED BY THE APPLICATION OF A REAL-TIME VOLTAGE SECURITY ASSESSMENT METHOD AT THE HELLENIC TRANSMISSION SYSTEM OPERATOR**
G. CHRISTOFORIDIS, J. KABOURIS, C. VOURNAS (GREECE), T. VAN CUTSEM (BELGIUM)
- C2-207** **IMPACT OF EXISTING AND INNOVATIVE CONTROL CENTRE TECHNOLOGIES ON SYSTEM OPERATOR'S PERFORMANCE**
THALES M. PAPAZOGLU, GERHARD KROST (GERMANY), N. CUKALEVSKI (SERBIA AND MONTENEGRO), ZDENEK MALEK (CZECH REPUBLIC), MILORAD MARKOVIC (AUSTRIA), ADEL MENDONZA (BRAZIL), GERRY MELLINGER (USA), KENNETH WALVE (SWEDEN) - ON BEHALF OF WG C2.03
- C2-208** **WIDE AREA MONITORING AND CONTROL SYSTEM : THE ITALIAN RESEARCH AND DEVELOPMENT**
D.CIRIO, A.DANELLI, M.POZZI, G.GIANNUZZI, M.SFORNA, S. CECERE (ITALY)
- C2-209** **EMERGENCY CONTROL ASSESSMENT FOR MITIGATING THE EFFECTS OF CASCADING OUTAGES**
A. BOSE (USA), S. BRUNO, M. DE BENEDICTIS, M. LA SCALA (ITALY)
- C2-210** **THE INTRODUCTION OF SPECIAL PROTECTION SYSTEM(SPS) FOR INCREASING INTERFACE FLOW LIMITS IN THE KOREAN POWER SYSTEM**
JOO-CHEON BAE, EUNG-SOO JUNG, JOO-HO LEE, SEOK-HA SONG (KOREA)
- C2-211** **IPS/UPS WIDE AREA MEASURING SYSTEM**
B. AYUEV, P. EROKHINE, Y. KULIKOV (RUSSIA)
- C2-212** **DESIGN AND APPLICATION OF A SPECIAL PROTECTION SYSTEM IN SAUDI ELECTRICITY COMPANY**
M. AL-ZAHRANI (SAUDI ARABIA)
- C2-213** **IDENTIFYING OPTIMAL REMEDIAL ACTIONS FOR MITIGATING VIOLATIONS AND INCREASING AVAILABLE TRANSFER CAPABILITY IN PLANNING AND OPERATIONS ENVIRONMENTS**
E. BAJREKTAREVIC, S. W. KANG, V. KOTECHA, S. KOLLURI, M. NAGLE, S. DATTA, M. PAPIC, J. USELDINGER, P. C. PATRO, L. HOPKINS, D. LE, M.Y. VAIMAN, M.M. VAIMAN, P. BURKE, P. POVOLOTSKIY (USA)

PS3: Ability of Control Centres to Handle Emerging and Acute System Contingencies that Involve a Multitude of System Operators and other Actors

- C2-301** **TRAINING OPERATORS TO ACUTE SYSTEM CONTINGENCIES**
M. STUBBE, F. PROMEL, P. VAN MEIRHAEGHE, J. DUBOIS, H. LEMMENS, C. FONTAINE (BELGIUM)
- C2-302** **INTERACTION AND COORDINATION BETWEEN MULTIPLE CONTROL CENTRES ---- DEVELOPMENT AND PRACTICE ***
B. M. ZHANG, H. B. ZHANG, B. J. WEN, T. HUANG, W.W. TAO, Q. W. WANG, H.B. SUN, W.C. WU (CHINA)
- C2-303** **ENHANCEMENT OF THE VISUALISATION OF AN EXISTING SCADA SYSTEM**
PETER KADAR – TAMAS BESSENYEI – LAJOS OROSZKI (HUNGARY)
- C2-304** **DEVELOPMENT OF A MANAGEMENT SYSTEM FOR “ELECTRIC POWER SYSTEM COUNCIL OF JAPAN (ESCJ)”**
TSUTOMU WATANABE, YOSHIKI TAKABAYASHI, KOSHI KANEKO (JAPAN)
- C2-305** **DETERMINATION OF THE REAL NET TRANSFER CAPACITIES AND CAPACITY RESERVES**
JEAN CONSTANTINESCU (ROMANIA)
- C2-306** **APPLYING DYNAMIC THERMAL RATINGS IN SYSTEM OPERATIONS**
R. ADAPA, D. DOUGLASS, N. DAG REPPEN (USA)

SC C3 System Environmental Performance

PS1: Local and global environmental impacts of centralized versus distributed generation

- C3-101** **IMPACT OF EMBEDDED GENERATION ON THE FRENCH POWER SYSTEM**
E. BUÉ, JL. JAVERZAC, JM. ROUDERGUES (FRANCE)
- C3-102** **ENVIRONMENTAL IMPACT OF ENERGY SYSTEMS IN METROPOLITAN AREAS : CENTRALISED VS. DISTRIBUTED HEAT AND POWER GENERATION**
P.P GIRARDI, A.FIORE, G.M. RIVA, M.C. BRAMBILLA, C. PERTOT (ITALY)
- C3-103** **ENVIRONMENTAL IMPACT OF HEAT PUMP WATER HEATERS AND DISTRIBUTED COGENERATION SYSTEMS FROM THE VIEWPOINT OF RESIDENTIAL CUSTOMERS**
HIDEHARU SUGIHARA, KIICHIRO TSUJI (JAPAN)
- C3-104** **ENVIRONMENTAL COSTS INTERNALIZATION IN ELECTRICITY PRODUCTION: CO2 ALLOWANCES AND GREEN CERTIFICATES**
F. PARADA, P. CABRAL (PORTUGAL)
- C3-105** **ELECTRICITY CERTIFICATES AS MULTI-PURPOSE TOOLS**
B. BODLUND, L. J. NILSSON, C. HEDENSTRÖM, N. ANDERSSON (SWEDEN)

PS2: Economic implications of growing environmental constraints on the design and operation of power systems

- C3-201** **PROJECT MANAGEMENT AND SOCIO ENVIRONMENTAL RISK MANAGEMENT APPLIED TO A HYDRO POWER PROJECT. CEMIG'S EXPERIENCE IN IRAPÉ PROJECT, MINAS GERAIS, WITH AN INSTALLED POWER OF 360MW**
MONICA NEVES CORDEIRO, GUILHERME COMITTI, ROBERTO FERREIRA BORGES (BRAZIL) JOSÉ WILLIAM CAMPOMIZZI
- C3-202** **REDUCTION OF GENERATION CAPACITY OF HYDRO PLANTS CAUSED BY ENVIRONMENTAL PROBLEMS – HENRY BORDEN PLANT STUDY CASE**
ANTONIO BOLOGNESI (BRAZIL)
- C3-203** **ANALYSIS OF THE ENVIRONMENT AND MULTIPLE USE OF WATER IMPACTS IN THE ENERGETIC OPERATION OF THE BRAZILIAN INTERCONNECTED POWER SYSTEM**
FRANCISCO ARTEIRO, MARIO DAHER, MARCO VIEIRA E EDUARDO NOGUEIRA (BRAZIL)
- C3-204** **AN ENVIRONMENTAL APPROACH TO THE BRAZILIAN POWER SECTOR PLANNING PROCESS**
SILVIA HELENA MENEZES PIRES, MIRIAN REGINI NUTI, RICARDO FURTADO, RONALDO CAVALCANTI, FLAVIA SERRAN (BRAZIL)
- C3-205** **THE ENVIRONMENTAL AND JURIDICAL REGULATION OF WATER USE IN THE BRAZILIAN ELECTRIC POWER MARKET**
EVERTHON TAGHORI SICA, RUBIPIARA CAVALCANTE FERNANDES, LISANDRA STEIN E SOUZA (BRAZIL)
- C3-206** **ENVIRONMENTAL PLAN OF CONSERVATION AND USAGE OF ARTIFICIAL RESERVOIRS: A RESEARCH USING THE DELPHI METHOD**
FLÁVIA GAMA SOARES, RICARDO CAVALCANTI FURTADO (BRAZIL)
- C3-207** **THE IMPACT OF ENVIRONMENTAL DEMANDS ON THE DEVELOPMENT AND OPERATION OF THE FRENCH TRANSMISSION GRID**
E. SERRES, P. DUMARQUEZ (FRANCE)
- C3-208** **METHODOLOGIES TO ASSESS THE INTERACTION OF NETWORK, ENVIRONMENT AND TERRITORY IN PLANNING TRANSMISSION LINES**
D. CAPRA, R. CONTI, M. MARAZZI, R. BENATO, A. LORENZONI, M. GATTO, G. PARIS, F. SALA (ITALY)
- C3-209** **ECONOMIC IMPLICATIONS OF ENVIRONMENTAL CONSTRAINTS ON THE DESIGN, CONSTRUCTION AND MAINTENANCE OF THE NEW TRANSMISSION LINES IN SLOVENIA**
A. KREGAR, B.ZEMLJARIČ (SLOVENIA)

SC C4 System Technical Performance

PS1: Performance of Power Systems against Lightning-Originated Disturbances

- C4-101** **METHODOLOGY FOR THE CALCULATION OF THE LIGHTNING FLASHOVER RATE OF A LINE WITH OR WITHOUT LINE SURGE ARRESTERS**
A. XÉMARD, S. DENNETIÈRE J. MICHAUD, PIERRE-YVES VALENTIN (FRANCE), QUE BUI VAN, A. DUTIL, M. GIROUX, J.MAHSEREDJIAN (CANADA)
- C4-102** **PROVIDING THE POLLUTION MAP OF IRAN BASED ON DDG METHOD**
M.R.SHARIATI, A.R.MORADIAN, S.J.A.VASEAI, M. REZAEI (IRAN)
- C4-103** **A POLE-MOUNTED TRANSFORMER MODEL FOR THE ASSESSMENT OF TRANSFERRED LIGHTENING SURGES FROM A DISTRIBUTION LINE TO A CONSUMER ENTRANCE**
T. NODA, H. HONDA, A. ASAKAWA, T. SHINDO, S. YOKOYAMA (JAPAN)
- C4-105** **LIGHTNING OUTAGE RATE CALCULATION OF ARRESTER INSTALLED 154KV TRANSMISSION LINE CONSIDERING STATISTICAL LIGHTNING CURRENT DATA AND GEOGRAPHICAL FEATURES**
E.B.SHIM, Y. W. KANG, J. W. WOO, J. S. KWAK, J. B. CHOO (KOREA)
- C4-106** **MEXICAN EXPERIENCE WITH THE APPLICATION OF TRANSMISSION LINE ARRESTERS.**
G. ENRIQUEZ, R. VELÁZQUEZ, C. ROMUALDO (MEXICO)
- C4-107** **ANALYSIS OF THE PERFORMANCE A 400 KV TRANSMISSION LINE AGAINST LIGHTNING**
MARTÍNEZ JUAN, CORRALES SERGIO, J.L. BARRAGAN (MEXICO)
- C4-108** **A LONG-TERM STUDY OF THE LIGHTNING FLASH CHARACTERISTICS IN ROMANIA**
ILEANA BARAN, DORIN CRISTESCU, VASILE CRISTEA – ROMANIA - CLAUDE GARY -FRANCE
- C4-109** **IMPACT OF LIGHTNING PARAMETERS KNOWLEDGE ON NETWORK INSULATION COORDINATION**
G.N.ALEXANDROV (RUSSIA)
- C4-110** **PROGRAM FOR CHECKING THE AIR-TERMINATION SYSTEM OF LIGHTNING PROTECTION SCIT**
J. VORŠIČ, D. KORITNIK (SLOVENIA)
- C4-111** **ESTIMATION OF LIGHTNING PERFORMANCE OF MV OVERHEAD LINES IN MEA'S POWER DISTRIBUTION SYSTEM**
T. THASANANUTARIYA, T. BUNYAGUL, S. CHATRATANA (THAILAND)

PS2: Impact of Monitoring and Diagnostics on Insulation Coordination

- C4-201** **THE IMPACT OF INSULATION MONITORING AND DIAGNOSTICS ON RELIABILITY AND EXPLOITATION OF SERVICE LIFE**
CLAUS NEUMANN, R. HUBER, D. MEURER, R. PLATH, U. SCHICHLER, ST. TENBOHLEN, K.-H. WECK (GERMANY)

PS3: EMC and EMF Assessment and Mitigation of Associated Problems

- C4-301** **SWITCHING OVERVOLTAGES IN AIR-INSULATED SUBSTATION (AIS) DUE TO DISCONNECTION AND CIRCUIT BREAKER SWITCHING**
SALIH ČARŠIMAMOVIĆ, RASIMA GAČANOVIĆ, ZIJAD BAJRAMOVIĆ, MELUDIN VELEDAR, MIROSLAV LJEVAK (BOSNIA AND HERZEGOVINA), PREDRAG OSMOKROVIĆ (SERBIA AND MONTENEGRO)
- C4-302** **TRANSIENT ELECTROMAGNETIC ENVIRONMENT OF 500KV SUBSTATIONS IN CHINA**
XIANG CUI, XIONG WU, WEIDONG ZHANG, GUANGZHOU ZHANG, BINXIAN LU, BAOQUAN WAN, XUESONG GU, XIAOWU ZHANG, JIWEI SUN (CHINA)
- C4-303** **SOME ITALIAN EXPERIENCES IN THE UTILIZATION OF HV UNDERGROUND CABLE SYSTEMS TO SOLVE LOCAL PROBLEMS DUE TO MAGNETIC FIELD AND OTHER ENVIRONMENTAL ISSUES**
R. CONTI, F. DONAZZI, P. MAIOLI, R. RENDINA, E.A. SENA (ITALY)
- C4-304** **HIGH FREQUENCY SWITCHING SURGE IN SUBSTATION AND ITS EFFECTS ON OPERATION OF DIGITAL RELAYS IN JAPAN**
SHIGERU AGEMATSU, YOSHIO OBATA, SEIETSU TOMITA, HUMIO IWATANI, MASAO HORI, TOSHIO MATSUMOTO (JAPAN)
- C4-305** **SIMULATION OF SHIELDINGS AND MITIGATION METHODS FOR THE ELECTROMAGNETIC FIELD OF A TRANSFORMER**
LUKAS KÜNG, DR. JÜRIG BADER, ANDRI J. CASURA, THOMAS P. HEUSCHER (SUISSE)
- C4-306** **INCLUSION OF SENSITIVE EQUIPMENT IMMUNITY IN THE STUDY OF OVERCURRENT PROTECTION FOR TRANSMISSION AND SUB-TRANSMISSION SYSTEMS**
J.C. GOMEZ (ARGENTINA) , M.M. MORCOS (USA)

PS4: Coordination of Power Quality Levels between Customers and Various Players

- C4-401** **EXPERIENCE IN THE APPLICATION OF IEC/TR 61000-3-6 TO HARMONIC ALLOCATION IN TRANSMISSION SYSTEMS**
T.J. BROWNE, V.J. GOSBELL, S. PERERA, D.A. ROBINSON, L.M. FALLA, P.J. WINDLE AND A.C.D. PERERA (AUSTRALIA)
- C4-402** **PILOT CAMPAIN FOR MEASURING FLUCTUATION, HARMONICS AND VOLTAGE IMBALANCE INDICES AT THE TAUBATE SUBSTATION**
DALTON DE OLIVEIRA CAMPONÊS DO BRASIL, JOSÉ ROBERTO DE MEDEIROS, LUIZ FELIPE WILLCOX DE SOUZA, RICARDO PENIDO D. ROSS, ANTONIO AUGUSTO C. ARRUDA (BRAZIL)

- C4-403** **PROPOSAL FOR A METHODOLOGY TO MANAGE SAG PERFORMANCE DATA OBTAINED FROM SURVEYS WITH GREAT DEGREE OF TEMPORAL AND SPACIAL SPARSITY**
DELMO DE MACEDO CORREIA, DALTON DE OLIVEIRA CAMPONÊS DO BRASIL (BRAZIL)
- C4-404** **EGYPTIAN EXPERIENCE WITH IMPROVING THE TECHNICAL PERFORMANCE OF TRANSMISSION NETWORKS**
S. EZZ EL ARAB, H. ZARZOURA (EGYPT)
- C4-405** **WAVELET ANALYSIS TECHNIQUE AS A BASE FOR POWER QUALITY MONITORING SYSTEMS**
M. A. EL-HADIDY, A. S. ABLA, M.A. DALAL (EGYPT)
- C4-406** **APPLICATION OF NEURAL NETWORKS TO VOLTAGE FLUCTUATIONS MEASUREMENT – A PROPOSAL FOR A NEW FLICKERMETER**
MARCIN SZLOSEK BOGDAN SWIATEK ZBIGNIEW HANZELKA (POLAND)
- C4-407** **VALUE ASSESSMENT FOR ADVANCED TRANSMISSION POWER QUALITY MONITORING SYSTEM**
M MCGRANAGHAN, M. INGRAM (USA), M. WASILUK-HASSA (POLAND)

SC C5 Electricity Markets and Regulation

PS1: The Role of Regulators and Regulations in a Market Environment

- C5-101** **INTERACTION BETWEEN INVESTMENT PROCESSES FOR REGULATED TRANSMISSION AND COMPETITIVE GENERATION IN THE AUSTRALIAN NEM**
D. SWIFT, G. THORPE, T. BAKER, C. MACAULAY (AUSTRALIA)
- C5-102** **TRANSMISSION CHARGING IN BRAZIL - HISTORICAL OF ANALYSES**
VALDSON SIMÕES DE JESUS, JOSÉ CLEBER TEIXEIRA (BRAZIL)
- C5-103** **PENALTIES APPLICATION IN THE BRAZILIAN ELECTRICITY MARKET**
EVELINA MARIA DE ALMEIDA NEVES, MARIA PATRÍCIA AMARAL ARCE, GILSON CECCHIN, RODOLFO COLI DA CUNHA, RICARDO KATO, GISELE CHRISTINE VILLAÇA, FILLIPE HENRIQUE NEVES SOARES, CHRISTIAN CECCHINI (BRAZIL)
- C5-104** **STRATEGIC GOALS OF REGULATION – DISTRIBUTION BUSINESS 30 YEARS FROM NOW**
KENNETH HÄNNINEN, SATU VILJAINEN, JARMO PARTANEN (FINLAND)
- C5-105** **THAILAND ELECTRICITY MARKET AND REGULATIONS**
W. WITOONTIEN (THAILAND)
- C5-106** **ORGANISATION OF THE FRENCH ELECTRICITY SECTOR**
P. CLAVEL, S. BAUCHET (FRANCE)
- C5-107** **REGULATORY SOLUTIONS TO MITIGATE THE MARKET POWER OF PIVOTAL SUPPLIER**
JONG-KEUN PARK, YOUNG WOO NAM, YONG TAE YOON, SUNG-SOO KIM, HAE-SUNG JUNG, K.J. SONG (KOREA)
- C5-108** **ABOUT HARMONIZATION OF TECHNICAL REQUIREMENTS ON POWER SYSTEM RELIABILITY AND MARKET RELATIONS DEVELOPMENT**
VLADIMIR DOROFEEV (RUSSIA)
- C5-109** **POWER TRANSMISSION PERFORMANCE INDICES**
SEDQI A. BU-KHAMSIN, MAJID M. AL-SADAH (SAUDI ARABIA)

PS2: Electricity Markets and Market Designs

- C5-201** **CANCELLED**
- C5-202** **ON THE FUTURE PROSPECTIVE RELATIONSHIPS BETWEEN FEDERAL UTILITIES AND NEW ENTERPRISES IN THE BRAZILIAN TRANSMISSION SYSTEM**
ANTONIO CARLOS BARBOSA MARTINS, CESAR RIBEIRO ZANI, MARIO DE ALMEIDA E ALBUQUERQUE, BRAULIO GOLDMAN, OSWALDO L. W. DA R. CUBAS (BRAZIL)
- C5-203** **A COMPARISON BETWEEN THE INITIAL AND THE CURRENT POWER SECTOR MODELS IN BRAZIL**
XISTO VIEIRA FILHO, EDUARDO L. PRADO, MARCO AURÉLIO VIEIRA, BERNARDO CASTILHO, ANTONIO AUGUSTO J. MONTEIRO, JOÃO LUIZ M. LOPES (BRAZIL)
- C5-204** **ELECTRICITY MARKET MODELLING FOR ELECTRICITY MARKET CHOICE**
M.S. ELSOBKI (JR.) , M. ABDEL-RAHMAN (EGYPT)
- C5-205** **CANCELLED**
- C5-206** **HAVE DEREGULATED MARKET MODELS REACHED SUFFICIENT CONVERGENCE TO BE SUPPORTED THROUGH STANDARD IT PLATFORMS ?**
L.SCHMITT, C. GALZIN (FRANCE), D. SUN, A. JAYANTILAL (US)
- C5-207** **A NEW APPROACH IN TRANSMISSION TARIFF : ZONAL MATRIX**
V. RAMAKRISHNA, A.K. ASTHANA, R. BALASUBRAMANIAN (INDIA)
- C5-208** **A MARKET DESIGN FOR DEVELOPING COUNTRIES**
BHANU BHUSHAN (INDIA)
- C5-209** **COMPETITION MARKET AND MARKET POWER, ANALYSIS OF IRAN POWER INDUSTRY**
KIOUMARS HEYDARI (IRAN)
- C5-210** **A METHODOLOGY FOR THE "REACTIVE" ANCILLARY SERVICE AND THE PROPOSED APPLICATION TO THE PERUVIAN SYSTEM**
ROBERTO GOMEZ, RICCARDO VAILATI, G. MIGLIAVACCA (ITALY), ADOLFO GARCÍA NIETO (PERU), GUSTAVO HUSSON (ARGENTINA)
- C5-211** **CAPACITY PAYMENT SCHEMES IN THE ITALIAN ELECTRICITY MARKET**
M. BENINI, F. CREMONESI, M. GALLANTI, A. GELMINI, R. MARTINI (ITALY)
- C5-212** **EARLY-STAGE EVALUATION AND FEATURES OF JAPANESE ELECTRICITY MARKET DESIGN CONSISTENT WITH ENERGY SECURITY AND GLOBAL ENVIRONMENTAL PROTECTION**
AKIHIKO YOKOYAMA, JUNICHI NAITO, Y. HIRAIWA, TAKAO SHINJI, HIROSHI ASANO (JAPAN)
- C5-213** **TRANSMISSION LOSS MANAGEMENT IN COMPETITIVE ELECTRICITY MARKET**
J. K. PARK, T. K. HAHN, S. S. KIM, H. S. JUNG (KOREA)

- C5-214** **LMPs USAGE FOR DEMAND BALANCING IN POLISH POWER SYSTEM**
WOJCIECH LUBICKI, MAKSYMILIAN PRZYGRÓDZKI, GRZEGORZ TOMASIK, ROMAN KORAB (POLAND)
- C5-215** **CHARACTERISTICS OF ELECTRICITY MARKET FORMATION IN RUSSIA**
S.A. MAYOROV , P.F. MAKARKIN, F.Y. OPADCHIY (RUSSIA)
- C5-216** **INTERFACES BETWEEN SYSTEM OPERATORS, MARKET OPERATORS AND OTHER MARKET ACTORS**
OLE GJERDE, ON BEHALF OF CIGRE JWG C2/C5-05
- PS3: Financial and Economic Incentives**
- C5-301** **AN OVERVIEW OF THE TRANSMISSION CONCESSIONS AUCTIONS – STATISTICAL ANALYSIS OF BIDS AND RESULTS.**
J. MELLO, A. CASTRO, J. MELLO, A. PERLINGEIRO (BRAZIL)

SC C6 Distribution Systems and Dispersed Generation

PS1: Operating systems with Dispersed Energy Resources(DER) or Renewable Energy Resources(RES)

- C6-101 INTERACTIONS OF DISPERSED ENERGY RESOURCES WITH POWER SYSTEM IN NORMAL AND EMERGENCY CONDITIONS**
J DEUSE, K. KAROUI, S. GRECARD (BELGIUM), L. GERTMAR, O. SAMUELSSON, P. KARLSSON, M. BOLLEN, M. HÄGER, F. SÖLLERKVIST M. SPEYCHAL (SWEDEN), V. CHUVYCHIN, L. RIBICKIS A. SAUHATS (LATVIA)
- C6-102 LARGE WIND POWER INTEGRATION IN THE BRAZILIAN POWER SYSTEM AND REVISION OF THE NATIONAL GRID CODE**
FÁBIO C. MEDEIROS, DALTON O. C. BRASIL, LAERCIO F. M. GUEDES, ROBERTO JOSÉ RIBEIRO GOMES, FLÁVIA MARIA C. FERREIRA, PEDRO A. C. ROSAS (BRAZIL)
- C6-103 CONTRIBUTION OF WIND FARMS TO ANCILLARY SERVICES**
P. BOUSSEAU, R. BELHOMME, N. LAVERDURE, D. ROYE, S. BACHA, E. MONNOT, D. BOËDA (FRANCE)
- C6-104 COMMUNICATION AS THE KEY FOR A SUSTAINABLE NETWORK INTEGRATION OF DISPERSED AND RENEWABLE GENERATION**
BERND BUCHHOLZ, KURT ROHRIG, STEFAN MALCHER (GERMANY)
- C6-105 EXPERIENCES WITH OPERATION OF WIND FARMS USING WIND FORECASTING TOOLS**
KURT ROHRIG, YVONNE SASSNICK, ZBIGNIEW STYCZYNSKI, RONALD VÖLZKE (GERMANY)
- C6-106 EXPERIENCE INTEGRATING AND OPERATING WIND POWER IN THE PENINSULAR SPANISH POWER SYSTEM. POINT OF VIEW OF THE TRANSMISSION SYSTEM OPERATOR AND A WIND POWER PRODUCER.**
D. LANCHA, D. SANTOS, E. CASTAÑS, G. GONZÁLEZ, D. ALVIRA, S. LÓPEZ, E. FERNÁNDEZ (SPAIN)
- C6-107 PROBABILISTIC METHODOLOGY TO DETERMINE THE IMPACT OF DISPERSED GENERATION ON THE RELIABILITY WORTH OF POWERDISTRIBUTION NETWORKS**
E.N. DIALYNAS D.G. MICHOS N. HATZIARGYRIOU L. DAOUTIS E. ZAFIROPOULOS (GREECE)
- C6-108 DEVELOPMENT ON DISPERSED GENERATION IN IRAN COMPARED WITH GLOBAL TRENDS**
M.P.ARBANI, S.KAMALINIA A.R. SHIRANI (IRAN)
- C6-109 CANCELLED**
- C6-110 OPERATION OF DISTRIBUTION NETWORKS WITH DISTRIBUTED GENERATION IN A REGULATED MARKET SCENARIO**
CHRISTIAN D'ADAMO, GIUSEPPE MAURI, F. CAZZATO, S. BOTTON, A. BERTANI, L. BISONE (ITALY)
- C6-111 TECHNICAL ISSUES WITH RESPECT TO THE CONNECTION OF DISTRIBUTED GENERATION AND DEVELOPMENT OF CONNECTION GUIDBOOK - A MALAYSIAN EXPERIENCE**
SALLEHHUDIN YUSOF, HALIM OSMAN, FADZIL MOHD SIAM (MALAYSIA), HAMZAH NGAH (UK)
- C6-112 GENERIC SIZING METHODOLOGY FOR REMOTE WIND-HYDROGEN POWER SYSTEMS**
MAGNUS KORPAAS, ERIKA STENVIK, TERJE GJENGEDAL (NORWAY)
- C6-113 INFLUENCE OF HIGH WIND POWER PENETRATION ON THE NORDIC POWER GRID PRIMARY CONTROL RESPONSE**
JARLE EEK, KJETIL UHLEN, TERJE GJENGEDAL (NORWAY)

PS2: Demand Management (DM) and Demand Response (DR)

- C6-201 DISTRIBUTED ENERGY MANAGEMENT AND CONTROL-EXPERIENCES IN AUSTRALIA**
G. PLATT, T. JONES, G. JAMES, Y. GUO (AUSTRALIA)
- C6-202 CANCELLED**
- C6-203 DEMAND SIDE MANAGEMENT AND RESPONSE WITH DISTRIBUTED ENERGY RESOURCES- CHANCES AND FIRST EXPERIENCE**
CHRISTINE SCHWAEGERL (GERMANY), ALEX BAITCH (AUSTRALIA)
- C6-204 A METHODOLOGY BASED ON DEMAND SIDE MANAGEMENT APPROACHES FOR AN OPTIMAL PLANNING OF MV-LV GRID EXPANSION IN HIGHLY CONGESTED URBAN AREAS**
A. CAPOZZA, G. MORANA, F. PILO, R. VIADANA, S. MOCCI, M. IPPOLITO (ITALY)
- C6-205 DEMAND SIDE MANAGEMENT - FROM A REGULATORY STRAIGHT JACKET TO THE PREFERRED CHOICE**
HANS NILSSON (SWEDEN)

PS3: Innovative distribution systems facilitating widespread deployment of DER

- C6-301 ON THE INTEREST OF THE VIRTUAL POWER PLANT CONCEPT IN THE DISTRIBUTION NETWORKS**
C. KIENY, C. SURDU, N. HADJ-SAID, Y.BESANGER, L.-G. MANESCU, G. MALARANGE, O. RICHARDOT, L.SCHMITT (FRANCE)
- C6-302 LESSONS LEARNED: EUROPEAN PILOT INSTALLATIONS FOR DISTRIBUTED GENERATION - AN OVERVIEW BY THE IRED CLUSTER**
BRITTA BUCHHOLZ, NIKOS HATZIARGYRIOU, U. SCHLUECKING (GERMANY), I. FURONES FARTOS (SPAIN)

- C6-303** ***ECONOMIC SCHEDULING FUNCTIONS TO OPERATE MICROGRIDS IN LIBERALIZED ENERGY MARKETS***
F. PILO, G. CELLI, G. PISANO (ITALY), N. HATZIARGYRIOU, A. TSIKALAKIS (GREECE)
- C6-304** ***MANAGEMENT OF LOW VOLTAGE GRIDS WITH HIGH PENETRATION OF DISTRIBUTED GENERATION :
CONCEPTS, IMPLEMENTATIONS AND EXPERIMENTS***
ALESSANDRO BERTANI, CLAUDIO BOSSI, OLIVIER LAMQUET, ALBERTO BORGHETTI, CARLO ALBERTO NUCCI, MARIO
PAOLONE, STEFANO MASSUCCO, ANDREA MORINI, FEDERICO SILVESTRO, LUCIA DE BIASE, EDOARDO QUAIA (ITALY)
- C6-305** ***REGIONAL POWER GRID WITH RENEWABLE ENERGY RESOURCES : A DEMONSTRATIVE PROJECT IN
HACHINOHE***
YASUSHI FUJIOKA, HITOSHI MAEJIMA, SHIZUKA NAKAMURA, YASUHIRO KOJIMA, MITSUO OKUDERA, SHIN UESAKA (JAPAN)
- C6-306** ***USING MINIGRIDS FOR STABILIZING THE MAIN GRID***
D. COLL-MAYOR, E. GARCÍA-MORENO (SPAIN), A. NOTHOLT, A. ENGLER (GERMANY)
- C6-307** ***A GREENFIELD APPROACH FOR FUTURE POWER SYSTEMS***
MARTIN GEIDL, PATRICK FAVRE-PERROD, BERND KLÖCKL, GAUDENZ KOEPEL (SUISSE)
- C6-308** ***INCREASING THE TRANSFER OF WIND POWER ON TRANSMISSION NETWORK THROUGH COORDINATED
FACTS CONTROL***
X-P ZHANG, K GODFREY, L YAO C SASSE (UNITED KINGDOM)
- C6-309** ***MICROGRIDS - LARGE SCALE INTEGRATION OF MICROGENERATION TO LOW VOLTAGE GRIDS***
N. HATZIARGYRIOU, (GREECE), N. JENKINS, G. STRBAC (UNITED KINGDOM), J. A. PECAS LOPES, J. RUELA, A. AMORIM
(PORTUGAL), A. ENGLER (GERMANY), J. OYARZABAL (SPAIN), G. KARINIOTAKIS (FRANCE),

SC D1 Materials and Emerging Technologies

PS1: Partial Discharge Measurement with Non-Conventional Systems

- D1-101** **ACCOUSTIC MONITORING OF PARTIAL DISCHARGES USING FIBRE OPTIC SENSORS**
B T PHUNG, T R BLACKBURN, A ZAGARI (AUSTRALIA)
- D1-102** **SENSORS AND SENSING USED FOR NON-CONVENTIONAL PD DETECTION**
KURT FESER, ERNST GOCKENBACH, EDWARD GULSKI, WOLFGANG HAUSCHILD, EBERHARD LEMKE, MICHAEL MUHR, THOMAS STREHL (GERMANY)
- D1-103** **INDUSTRIAL TESTING OF HIGH VOLTAGE JOINTS USING ULTRASOUND**
CHRISTIAN CORNELISSEN, TORSTEN WIRZ, ARMIN SCHNETTLER (GERMANY), IVAN DE SCHRIJVER, FRANK CLAEYS (BELGIUM)
- D1-104** **ELECTROMAGNETIC (UHF) PD DIAGNOSIS OF GIS, CABLE ACCESSORIES AND OIL-PAPER INSULATED POWER TRANSFORMERS FOR IMPROVED PD DETECTION AND LOCALIZATION**
STEFAN TENBOHLEN, SACHA M. MARKALOUS, STEFAN M. HOEK, RICHARD HUBER, THOMAS STREHL, T. KLEIN, D. DENISSOV (GERMANY), UWE RIECHERT (SWITZERLAND)
- D1-105** **SYNCHRONOUS 3-PHASE PARTIAL DISCHARGE DETECTION ON ROTATING MACHINES**
MARTIN KAUFHOLD, WILFRIED KALKNER, ALIJA OBRALIC, RONALD PLATH, A. BETHGE (GERMANY)
- D1-106** **NEW DEVELOPMENT FOR DETECTING PARTIAL DISCHARGE USING AN UHF METHOD AND ITS APPLICATION TO POWER APPARATUS IN JAPAN**
MASAHIRO HANAI, FUMIHIRO ENDO, SHIGEMITSU OKABE, TATSURO KATO, HIROYUKI HAMA, MASAYUKI NAGAO (JAPAN)
- D1-107** **DEVELOPMENT OF AN ECONOMICAL MEASURING SYSTEM TO DETECT HIGH FREQUENCY PARTIAL DISCHARGE (HFPD) BY NEW CONCEPT SENSOR**
JEE-HONG .KIM, JA-YOON KOO, JIN-GI KIM, JEONG-TAE KIM (KOREA)
- D1-108** **EXPERIENCE OF THE ON-LINE INTELLIGENT PARTIAL DISCHARGE MONITORING (IPDM) SYSTEM FOR GIS USING UHF METHOD**
J.B.KIM, M.S.KIM, H.S.KIM, W.P.SONG, H.S.LEE, J.R. JUNG, Y.J. CHOI (KOREA)
- D1-109** **PARTIAL DISCHARGE DETECTION AND LOCALIZATION IN POWER EQUIPMENT DURING TRANSIENTS USING ULTRA WIDE BAND METHODS**
V.R. GARCIA-COLON, A. NAVA G, CARLOS AZCARRAGA (MEXICO)
- D1-110** **CONDITION ASSESSMENT AND AM DECISION SUPPORT FOR TRANSMISSION NETWORK COMPONENTS**
E. GULSKI ,S. MEIJER, J.J. SMIT, A. BUN, A. JANSSEN, H. GEENE, R. KONING, L. LAMBALLAIS, T.J.W.H. HERMANS, E.R.S. GROOT, J. SLANGEN, M.J.M. BOONE, J. KANTERS, F. DE VRIES, R. LEICH (THE NETHERLANDS)
- D1-111** **COMPARISONS OF DIGITAL FILTER, MATCHED FILTER AND WAVELET TRANSFORM IN PD DETECTION**
C ZHOU, X ZHOU, B G STEWART, A NESBITT, D M HEPBURN AND D GUO, M. MICHEL (UNITED KINGDOM)

PS2: Materials Issues in Emerging Technologies

- D1-201** **CORRELATION BETWEEN POWER TRANSFORMERS INTERNAL INSPECTIONS AND ACOUSTIC EMISSION (AE) TEST RESULTS**
J.C. BRANDÃO, P. FERES, M.A. LUZIO, HELVIO MARTINS, M. B. TRINDADE (BRAZIL)
- D1-202** **EVALUATION OF SURFACE ROUGHNESS OF THERMO-SETTING MATERIAL USED AS HIGH VOLTAGE INSULATORS**
A. NOSSEIR, L. S. NASRAT, M. AMER (EGYPT)
- D1-203** **CANCELLED**
- D1-204** **TRANSFORMER MATERIALS AS A PREREQUISITE FOR TRANSFORMERS RELIABILITY - KNOWLEDGE, PROPERTIES AND LIMITS**
IVANKA ATANASOVA-HÖHLEIN, PETER HEINZIG, ADOLF KACHLER (GERMANY)
- D1-205** **THE DIELECTRIC DISSIPATION FACTOR METHOD FOR TRANSFORMER DIAGNOSIS**
ANATOLY SHKOLNIK (ISRAEL)
- D1-206** **CROSS-EQUIPMENT EVALUATION OF MATERIAL TECHNIQUES BASED ON ELECTRICAL INSULATION PERFORMANCE IN ELECTRIC POWER EQUIPMENT**
HITOSHI OKUBO, SHIGEMITSU OKABE, HIROSHI MURASE, HIROYUKI HAMA, MASAYUKI HIKITA, YUKIYASU SHIRASAKA (JAPAN)
- D1-207** **RELIABLE DIAGNOSIS OF HV TRANSFORMER INSULATION FOR SAFETY ASSURANCE OF POWER TRANSMISSION SYSTEM REDIATool - A EUROPEAN RESEARCH PROJECT**
K. FESER, C. NEUMANN, S. TENBOHLEN (GERMANY), A. FILIPOWSKI, H. MOSCICKA-GRZESIAK, L. TATARSKI (POLAND), S. GUBANSKI, L. KARLSSON, J. BLENNOW (SWEDEN)

PS3: High Performance Materials and New Materials for Severe Operating Conditions

- D1-301** **AUSTRALIAN EXPERIENCE WITH THE DEVELOPMENT, AGEING AND MAINTENANCE OF VEGETABLE-BASED INSULATING OILS**
T. BLACKBURN, K. BUDIN, B. FINLAY, S. ISLAM, , L. MCPHERSON (AUSTRALIA)

- D1-302** **DESIGN, MODELLING AND TESTING OF RESISTIVE FAULT CURRENT LIMITER PROTOTYPES BASED ON HIGH TEMPERATURE SUPERCONDUCTORS**
L. MARTINI, I. ARCOS, M. BOCCHI, R. DALESSANDRO, V. ROSSI (ITALY)
- D1-303** **SUPERIORITY IN PARTIAL DISCHARGE RESISTANCE OF SEVERAL POLYMER NANOCOMPOSITES**
TOSHIKATSU TANAKA, YOSHIMICHI OHKI, TOSHIO SHIMIZU, SHIGEMITSU OKABE (JAPAN)
- D1-304** **STRATEGY AND TOOLS FOR THE ASSESSMENT OF POLYMERIC MATERIALS FOR HVDC CABLE SYSTEMS**
P.H.F. MORSHUIS (THE NETHERLANDS), L. DISSADO (UK), C. LAURENT (FRANCE), G.C. MONTANARI (ITALY), U. H. NILSSON (SWEDEN), G. PEREGO (ITALY), G. C. STEVENS (UK), R. BODEGA (THE NETHERLANDS)
- D1-305** **VARIOUS DIELECTRIC CHARACTERISTICS OF POLYMER NANOCOMPOSITES**
TOSHIKATSU TANAKA (JAPAN) ON BEHALF OF CIGRE TASK FORCE D1.16.03
- D1-306** **DEVELOPMENT AND APPLICATION TREND OF SUPERCONDUCTING MATERIALS AND ELECTRICAL INSULATION TECHNIQUES FOR HTS POWER EQUIPMENT**
HITOSHI OKUBO (JAPAN), MICHAEL MCCARTHY (USA), SHIGEO NAGAYA (JAPAN), MATHIAS NOE (GERMANY), FRANK SCHMIDT (GERMANY), CHRISTOF SUMEREDER (AUSTRIA), OLE TONNESEN (DENMARK), BERND WACKER (GERMANY) ON BEHALF ON WG SC D1.15

SC D2 Information Systems and Telecommunications

PS1: New Developments of Geographical Information and asset management for Overhead lines System (Common session with B2)

- B2 / D2 -101** **TRANSMISSION LINE UP-RATING DESIGN USING SURVEY DATA FROM AIRBORNE LIDAR**
ANA PAULA BAUNGARTEN KERSTING, MAURICIO MÜLLER, JOÃO NELSON HOFFMANN (BRAZIL)
- B2 / D2-102** **EXPERIENCES AND POSSIBILITIES OF USING MOBILE TERMINAL IN GRID MAINTENANCE**
ARI SILFVERBERG, MARCUS STENSTRAND, MAURI RATILAINEN, PASI TURUNEN (FINLAND)
- B2 / D2-103** **THE GEOGRAPHICAL INFORMATION SYSTEM USED AT RTE FOR ASSET MANAGEMENT MAPPING CASE OF VEGETATION MANAGEMENT SOFTWARE**
M. DEVELEY, G. BUFFIERE (FRANCE)
- B2 / D2-104** **OVERHEAD LINES MANAGEMENT AND PLANNING OPTIMIZATION USING GEOGRAPHICAL INFORMATION SYSTEMS**
K. TIGAS, D. AGORIS, V. KILIAS, P. STRATIS, M. PSSALLIDAS, A. ALEXANDRIDIS, E. PYRGIOTI, P. CHAVIAROPOULOS, A. NERIS, I. VITELLAS (GREECE)
- B2 / D2-105** **KYUSHU ELECTRIC'S ERP SYSTEM DEVELOPMENT AND OPERATION FOR OVERHEAD LINES SYSTEM**
TAKAFUMI UEMURA, TAKASHI OIKI, MASAOKI OKA, YUKIKO NISHIOKA (JAPAN)
- B2 / D2-106** **DEVELOPMENT OF POWER TRANSMISSION LINE INSPECTION SYSTEM BY UNMANNED HELICOPTER**
YOJI SHIMO (JAPAN)
- B2 / D2-107** **TAKING ACCURATE MEASUREMENTS OF HIGH VOLTAGE INSTALLATIONS WITH LASER RANGE SCANNER AND GPS**
J. GOMES-MOTA, A. VALE, A. MATOS-ANDRÉ, M. I. RIBEIRO (PORTUGAL)
- B2 / D2-108** **MULTISPECTRAL (V, UV, IR) AERIAL SURVEY OF EHV OVERHEAD LINES IN THE ROMANIAN POWER GRID**
STELIAN GAL, IOAN DIACONU, MARIUS OLTEAN, BOGDAN GAL, ROMANIA
- B2 / D2-109** **BENEFITS OF INTEGRATED INFORMATIONAL, GEOGRAPHICAL AND ASSET MANAGEMENT SYSTEM FOR POWER UTILITY NETWORKS**
M. MARINSEK, S. JAMSEK, B.BARL (SLOVENIA) , B.MEKHANOSHIN, A.BORODIN, K.MEKHANOSHIN , V.SHKAPTSOV (RUSSIA)
- B2 / D2-110** **GEOREFERENTIAL VIDEO FOR LOCATED ACCESS ROAD AND STRINGING TENSION EQUIPMENT PLACES IN CVG EDELCA EXISTING TRANSMISSION LINES**
JOSE A. PARDIÑAS, CARLOS GARCÍA A, ANIBAL DAO, N. DE LA VILLE (VENEZUELA)

PS2: Behaviour of the Information Systems and its Associated Telecommunication Infrastructure used for Operation of the Electricity Network during Adverse Circumstances

- D2-201** **HYDROGEN FUELL CELL POWER SUPPLY FOR ELECTRIC UTILITY TELECOMMUNICATION NETWORKS**
ALEX W. LAM (CANADA)
- D2-202** **BEHAVIOUR OF THE DISASTER RESISTANT COMMUNICATION SYSTEMS UTILIZING IT TECHNOLOGIES BY ELECTRIC POWER COMPANIES IN JAPAN**
MASAYUKI YAMASAKI, YASUKI TATEISHI, KOUJI SAKAGUCHI, H. KOUNO, KATSUHITO SAWADA (JAPAN)
- D2-203** **ENSURING RELIABLE OPERATION OF INFO-COMMUNICATION SYSTEMS UNDER PRE-EMERGENCY AND EMERGENCY SITUATIONS IN THE POWER UTILITIES AND THEIR REAL-TIME PROTECTION AGAINST UNAUTHORIZED INFLUENCE**
M. SOLNTSEV, V. ISHKIN (RUSSIA)
- D2-204** **RELIABILITY ASSESSMENT FOR SYSTEM CONTROL TELECOMMUNICATION CIRCUITS**
JUAN RAMÓN FEJOO MARTÍNEZ, ANTONIO PALOMO PONCE (SPAIN)

PS3: Development Strategies to deal with the Increasing Use of IT in the Electricity Business

- D2-301** **MANAGEMENT OF INFORMATION TECHNOLOGY INFRASTRUCTURE IN THE POWER UTILITY – A CONSOLIDATED APPROACH**
M. MESBAH (FRANCE)
- D2-302** **CYBER SECURITY IN SUBSTATION AUTOMATION : DESIGN AND SUPERVISION**
F. LENOIR, A. VIDRASCU, J-M. DELBARRE (FRANCE)
- D2-303** **KEY ISSUES AND RELATED METHODOLOGIES IN THE SECURITY RISK ANALYSIS AND EVALUATION OF ELECTRIC POWER CONTROL SYSTEMS**
GIOVANNA DONDOSSOLA, OLIVIER LAMQUET (ITALY), AGE TORKILSENG (NORWAY)
- D2-304** **APPLICATION OF IP NETWORKS AT ELECTRIC POWER COMPANIES IN JAPAN**
HIDENAO IWAHASHI, OSAMU SASAKI, SATOSHI ISHII (JAPAN)
- D2-305** **CANCELLED**
- D2-306** **APPLICATION EXPERIENCES OF MONITORING AND CONTROLLING ELECTRIC TUNNEL EQUIPMENTS BASED ON THE ADVANCED PLC TECHNOLOGIES OF KEPCO**
D. H. HYUN, S. H. JU, T. Y. LEE, B. S. PARK, Y. H. KIM, M. S. CHOI, M. H. YOO (KOREA)

- D2-307** **EVOLUTION OF REN'S SECURITY TELECOMMUNICATION NETWORK ACCORDING THE TECHNOLOGICAL EVOLUTION AND LIBERALIZATION OF ENERGY MARKET**
A. FONSECA, P. DE MELO, J. FONSECA (PORTUGAL)
- D2-308** **GATEWAYS AS MIGRATION MEANS TO THE INCREASED IT ROLE IN ELECTRICITY BUSINESS**
NIKOLA MILADINOVIĆ, RADOMIR STAMATOVIĆ, GORDAN KONEČNI (SERBIA AND MONTENEGRO)
- D2-309** **CONTROL CENTER ARCHITECTURE AND INTEGRATION IN VATTENFALL FINLAND**
IIRO RINTA-JOUPPI (FINLAND), ERIK SANDSTRÖM (SWEDEN)
- D2-310** **MONITORING AND DIAGNOSIS OF PARTIAL DISCHARGES IN MEDIUM VOLTAGE DISTRIBUTION NETWORKS THROUGH BPL (BROADBAND OVER POWER LINES) TECHNOLOGY**
JOSÉ COMABELLA LÓPEZ, ALEJANDRO CORTÉS ESTARELLAS (SPAIN)
- D2-311** **THE OPERA IST PROJECT, THE POWER LINE COMMUNICATIONS AS BASIS TO INCREASE THE USE AND EXPLOITATION OF IT TECHNOLOGIES IN THE ELECTRICITY BUSINESS**
JORGE J. NIETO, J.J. GUILLEN, ELISA GARCIA, ALICIA DÍAZ-CHIRON, MIGUEL A. CHIMENO, LUIS J. LEGORBURU (SPAIN)
- D2-312** **ASSESSMENT OF ENTERPRISE INFORMATION SECURITY IN ELECTRIC UTILITIES - THE IMPORTANCE OF PRIORITIZATION -**
T. CEGRELL, E. JOHANSSON, P. JOHNSON (SWEDEN)
- D2-313** **THE TOP IT CONCERNS FOR CHIEF INFORMATION OFFICERS IN EUROPEAN ELECTRIC POWER INDUSTRIES**
T. CEGRELL, Å. LINDSTRÖM, M. GRANDELL (SWEDEN)
- D2-314** **ENHANCEMENT OF IP/MPLS NETWORK FOR POWER UTILITIES**
A. PAO-ON, P. SANGSRIROUJANA, W. YUTTACHAI (THAILAND)