

# *Jicable'15*

*9<sup>th</sup> International Conference on Power Insulated Cables  
Paris - Versailles 21-25 June 2015*

## *Scientific Program*



*Sunday June 21<sup>st</sup>, 2015 - 17:15*

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**AW Welcome lecture**

*Sunday June 21<sup>st</sup>, 2015 - 17:15 - 18:30 - Room: A*

**AW.i Welcome Lecture: "Brazil's situation in terms of energy – Challenges and perspectives"**

**MATOS DE ARAUJO** Josias; *President CNB CIGRE, Director of regulation, Eletrobras, Brazil*

Monday June 22<sup>nd</sup>, 2015 - 09:00

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**A0 Opening session**

Monday June 22<sup>nd</sup>, 2015 - 09:00 - 10:30 - Room: A

- A0.i Opening Lecture: "European Electricity Transmission Infrastructure: a Key to the Energy Transition"**  
**BORNARD** Pierre; Deputy CEO of RTE, Chairman of the board of ENTSO-E, France

Monday June 22<sup>nd</sup>, 2015 - 11:00

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**A1 HV and EHV cable systems**

Topic 8: HV and EHV AC Cable Systems

Monday June 22<sup>nd</sup>, 2015 - 11:00 - 12:30 - Room: A

Chairman: **Argaut Pierre; CIGRE SC B1, France (CIGRE)**

Rapporteur: **Mammeri Mohamed; General Cable / Silec Cable, France**

- A1.1 Worldwide experiences and challenges with EHV XLPE cable projects 330 kV to 500 kV**  
**WEINLEIN** Andreas, **PETERS** Ulrich, **LAAGE** Uwe, **MEMMER** Horst; Südkabel GmbH, Mannheim, Baden Württemberg, Germany
- A1.2 The network connection of Niehl 3 CAPP - The first 380 kV long-distance cable project in Germany since the Bewag projects in 2000**  
**SHELL** Fabian; **FICHTNER**, Stuttgart, Germany  
**UHLENKÜKEN** Heinz; Rheinische Netzgesellschaft, Cologne, Germany
- A1.3 138 kV cable system qualification to IEC 60840-2011 / ICEA S-108-720-2012 / AEIC CS-9-06 / IEEE 48-2009 / IEEE 404-2012**  
**GANATRA** Ravi; CME Wire and Cable, Suwanee, USA  
**PERKEL** Josh; NEETRAC, Atlanta, Georgia, USA  
**UZELAC** Milan; G & W Electric, Chicago, USA  
**ZAMUDIO** José; Viakable, Monterrey, Mexico
- A1.4 Qualification of a 150 kV transition joint for connecting external gas pressure three-core cable with extruded single core cables**  
**VAN ROSSUM** Jos, **BARTHOLOMEUS** Robert, **OLTMANS** Maurice, **GEENE** Henk, **BODEGA** Riccardo; Prysmian Netherlands B.V., Delft, The Netherlands  
**ROSS** Rob, **MOUSAVI GARGARI** Shirma; TenneT, Arnhem, The Netherlands  
**VAN DOELAND** Wouter; Energy Solutions, Delft, The Netherlands
- A1.5 PQ test and first 230 kV cable system project in Mexico**  
**MAXIMO** Juan, **SALDIVAR** Candelario; Viakable Operaciones, San Nicolas de los Garza, Mexico
- A1.6 Cable installation in mountainous areas, example of a successful installation and service**  
**BOSSE** Anika, **BÜSCHER** Astrid, **EWERT** Walter; nkt cables, Cologne, Germany  
**LACKNER** Johannes, **BRANDSTÖTTER** Erich; VERBUND Hydro Power GmbH, Vienna, Austria

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**B1 Submarine cable technology**

Topic 10: Submarine Cable Systems

Monday June 22<sup>nd</sup>, 2015 - 11:00 - 12:30 - Room: B

Chairman: **Jeroense Marc; ABB AB, High Voltage Cables, Sweden**

Rapporteur: **Boudinet Nathalie; RTE, France**

- B1.1 Use of aluminium conductors in submarine power cables**  
**WORZYK** Thomas, **LÅNGSTRÖM** Sonny; ABB AB, Karlskrona, Sweden
- B1.3 Potential use of new water tree retardant insulation in submarine cables**  
**CREE** Stephen; Dow Electrical & Telecommunications Europe, Horgen, Zurich, Switzerland  
**CARONIA** Paul, **PERSON** Timothy; Dow Electrical & Telecommunications USA, Collegeville, Pennsylvania, USA
- B1.4 Development of 320 kV subsea/underground HVDC extruded cable system**  
**SHIGEMORI** Naoto, **MORI** Hiroki, **YAGI** Yukihiko; VISCAS Corporation, Ichihara, Chiba, Japan  
**SAKAI** Yasuhiro; VISCAS Corporation, Hiratsuka, Kanagawa, Japan
- B1.5 Key technical research on submarine optic fiber and power composite cable with long length, three cores & high voltage**  
**ZHANG** Jianmin; Zhongtian Technology Submarine Cable Co., Ltd., Nantong, China  
**XIE** Shuhong; Zhongtian Technology Group Co., Ltd., Nantong, China
- B1.6 The Oslofjord project - The world's first installed 420 kV submarine cable connection combining SCFF cables and XLPE cables with flexible factory joints**  
**OLDERVOLL** Froydis, **JENSEN** Geir; Statnett SF, Oslo, Norway  
**SLÅTTEN** Stein Arne, **ELDERS** Jostein, **KALDHUSSÆTER** Einar; Nexans Norway AS, Oslo, Norway

## **C1 Remaining life estimation of LV and MV cables**

Topic 5: Diagnosis, Maintenance, Remaining Life Estimation and Management  
 Monday June 22<sup>nd</sup>, 2015 - 11:00 - 12:30 - Room: C

Chairman: **Sinisuka Ngapuli Irmea; Institut Teknologi Bandung, Indonesia**  
 Rapporteur: **Denizet Isabelle; General Cable, France**

- C1.1 Assessment of overheating in XLPE MV cable joints by partial discharge measurements**  
**EBERG** Espen, **HVIDSTEN** Sverre; SINTEF Energy Research, Trondheim, Norway  
**BERGSET** Kristina I.; The Norwegian University of Science and Technology (NTNU), Trondheim, Norway
- C1.2 Risk on failure, based on PD measurements in actual MV PILC and XLPE power cables**  
**QIAN** Yizhou; Technical University Eindhoven, Eindhoven, The Netherlands  
**WAGENAARS** Paul, **STEENNIS** Fred; DNV GL, Arnhem, The Netherlands  
**HARMSSEN** Denny; Alliander, Arnhem, The Netherlands  
**SOEPBOER** Piet; Enexis, Arnhem, The Netherlands  
**BLEEKER** Pascal; Locamation, Enschede, The Netherlands
- C1.3 Main objectives and results of the EU project ADVANCE with focus on aging assessment of cable insulation used in nuclear power plants through electrical measurements**  
**MOREAU** Christophe, **FRANCHET** Maud; EDF R&D, Moret-sur-Loing, France  
**FABIANI** Davide, **VERARDI** Luca, **MONTANARI** Gian-Carlo; UNIBO, Bologna, Italy  
**FRANÇOIS** Sandrine; EDF SEPTEN, Villeurbanne, France
- C1.4 Prediction of power cable failure rate based on failure history and operational conditions**  
**SACHAN** Swati, **ZHOU** Chengke, **BEVAN** Geraint, **ALKALI** Babakalli; Glasgow Caledonian University, Glasgow, UK
- C1.5 Dielectric loss evolution for miniature cables with PE insulation through various stages of degradation**  
**BERNIER** Simon, **DRAPEAU** Jean-François, **JEAN** Daniel; Hydro-Québec (IREQ), Varennes, Québec, Canada
- C1.6 Aging management for XLPE and EPR medium voltage cables in nuclear plant environments**  
**BANERJEE** Sarajit, **ROUISON** David, **SEDDING** Howard; Kinectrics Inc., Toronto, Ontario, Canada

## **D1 Testing methods: PD measurements**

Topic 3: Testing Methods: Electrical and Not Electrical  
 Monday June 22<sup>nd</sup>, 2015 - 11:00 - 12:30 - Room: D

Chairman: **Fenger Mark; Prysmian Group, Canada**  
 Rapporteur: **Siméon Éric; Nexans, France**

- D1.1** *Partial discharge measurements in the sub-VLF-range*  
**RETHMEIER** Kay; Kiel University of Applied Sciences, Kiel, Germany  
**BLANK** Rudolf; b2 electronic GmbH, Klaus, Austria
- D1.2** *The application of PD monitored AC voltage test in Beijing 500 kV power cable lines acceptance*  
**AN** Jianqiang, **LI** Zhen, **DONG** Yi, **ZHU** Zhanwei, **SUN** Changqing; Beijing Electric Power Company, Beijing, China  
**XIAO** Chuanqiang; SINDIA Instruments, Beijing, China
- D1.3** *Long-term experiences and review with offline and online PD measurements on-site on EHV XLPE cable systems 330 kV to 500 kV*  
**WEINLEIN** Andreas, **PETERS** Ulrich, **SCHROEDER** Gero, **HAERING** Dominik; Südkabel GmbH, Mannheim, Baden Württemberg, Germany
- D1.4** *Results of 10 years after installation tests combined with PD detection on MV cable-systems*  
**DE VRIES** Frank, **SMIT** Jacco; Alliander, Alkmaar, The Netherlands  
**VAN SLOGTEREN** John; Liander, Arnhem, The Netherlands
- D1.5** *PD characteristics under the aspect of different voltage wave shapes and frequencies*  
**PETZOLD** Frank, **GOETZ** Daniel, **PUTTER** Hein; Seba Dynatronic, Baunach, Germany  
**STEPHAN** Marco, **MARKALOUS** Sacha; Hagenuk KMT, Radeburg, Germany
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## **E1 Economics of cable systems**

Topic 6: Economy of Cable Systems

Monday June 22<sup>nd</sup>, 2015 - 11:00 - 12:30 - Room: E

Chairman: **Penserini Paul**; RTE, France

Rapporteur: **Giffard Philippe**; SYCABEL, France

- E1.1** *Electrothermal coordination in cable based transmission grids operated under market based conditions*  
**OLSEN** Rasmus, **RASMUSSEN** Carsten; Energinet.dk, Fredericia, Denmark  
**HOLBOELL** Joachim; Technical University of Denmark, Kgs. Lyngby, Denmark  
**GU DMUNSDOTTIR** Unnur Stella; Dong Energy, Fredericia, Denmark
- E1.2** *Copper or aluminium cable conductors, broadly compared in a life-cycle perspective*  
**BOONE** Wim, **KACKER** Arnav, **BAL** Remco; DNV GL, Arnhem, Gelderland, The Netherlands
- E1.3** *Operating a 10 kV cable on a system voltage of 20 kV: the long term test*  
**SMIT** Jacco, **DE VRIES** Frank, **SEBREGTS** Ger; Alliander, Arnhem, The Netherlands  
**BOONE** Wim; DNV GL, Arnhem, The Netherlands
- E1.4** *Cable selection challenges*  
**BALLOUR** Sami, **ALHAMMADI** Khadija; DUCAB, Dubai, United Arab Emirates
- E1.5** *Efficient project management of high voltage underground cable systems against self-evident facts*  
**DUBREUIL** Michel, **POMBOURCQ** Hervé; RTE, Paris, France
- E1.6** *The use of life cycle cost analysis to determine the most effective cost of installation 500 kV of Java-Sumatra power interconnection system*  
**NUGRAHA** Herry, **SILALAH** Zivion; PLN Indonesia, Jakarta, Indonesia  
**SINISUKA** Ngapuli; ITB, School of Electrical Engineering and Informatics, Bandung, Indonesia

Monday June 22<sup>nd</sup>, 2015 - 14:30

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**A2 HV: installation methods**

Topic 8: HV and EHV AC Cable Systems

Monday June 22<sup>nd</sup>, 2015 - 14:30 - 16:00 - Room: A

Chairman: **Gille Alain; Verbraeken Construction NV, Belgium**

Rapporteur: **Raud Jean-Louis; SERCE, France**

**A2.1 Production, installation and commissioning of two 380 kV underground lines for the pump-storage plant project of Linth Limmern (Swiss Alps)**

**BIOLLEY** Claude, **MOUCHANGOU** Christian; Nexans Suisse SA, Cortaillod, Switzerland

**A2.2 Installation and commissioning of Patuxent river crossing (HDD, 1.4km) project in US**

**JOO** Jaeyun, **JEON** Seung-ik, **KIM** Byungsoo; LS Cable & System, Gumi, Republic of Korea

**A2.3 138 kV insulated cable system for temporary connection of transmission lines and substations**

**SILVESTRE** Gustavo, **CAPARROZ** Sergio; AES Eletropaulo, São Paulo - SP, Brazil

**LOPES** Julio Cesar, **ARAUJO** Simone, **PINHEIRO** Walter; TAG Inovação Tecnológica, São Paulo - SP, Brazil

**A2.5 Non-offset design of cables in manhole considering the mechanical behavior of XLPE cables in duct**

**KANG** Yeon-woog, **KANG** Ji-won, **JANG** Tae-in, **JUNG** Chae-kyun, **YOON** Jong-keun; KEPCO, Daejeon, Republic of Korea

**A2.6 Study on thermal backfill materials for directly buried HV cables**

**BURCEANU** Monica; Laborelec, Linkebeek, Belgium

**VAN DER BORGHT** Pieter; Elia, Brussels, Belgium

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**B2 Design of submarine lines**

Topic 10: Submarine Cable Systems

Monday June 22<sup>nd</sup>, 2015 - 14:30 - 16:00 - Room: B

Chairman: **Vercellotti Uberto; CESI S.p.A., Italy**

Rapporteur: **Franchet Maud; EDF R&D, France**

**B2.1 AC transmission systems for large scale and remote offshore wind farms**

**OLSEN** Espen, **HATLO** Marius, **ANDRÉ** Aymeric; Nexans Norway AS, Halden, Norway

**KARLSTRAND** Johan; JK Cablegrid Consulting AB, Karlskrona, Sweden

**B2.2 Comparison of losses in an armoured and unarmoured three phase cable**

**FARIA DA SILVA** Filipe, **LETH BAK** Claus; Aalborg University, Aalborg, Denmark

**EBDRUP** Thomas, **F. JENSEN** Christian; Energinet.dk, Erritsø, Denmark

**B2.3 Design and manufacturing of ±200 kV HVDC submarine power cable in Zhoushan flexible DC transmission project**

**HU** Ming, **ZHANG** Jianmin; Zhongtian Technology Submarine Cable Co., Ltd., Nantong, China

**XIE** Shuhong; Zhongtian Technology Group Co., Ltd., Nantong, China

**B2.4 Development of dynamic submarine MV power cable design solutions for floating offshore renewable energy applications**

**MARTA** Marco, **MUELLER-SCHUETZE** Sven, **OTTERSBERG** Heiner; Norddeutsche Seekabelwerke GmbH / General Cable, Nordenham, Lower Saxony, Germany

**ISUS** Daniel; General Cable Sistemas, Manlleu, Catalunya, Spain

**JOHANNING** Lars, **THIES** Philipp R.; University of Exeter, Penryn, UK

**B2.5 Design studies for French submarine links**

**BOUDINET** Nathalie, **CHARVET** Jean, **DORY** Matthieu, **LAURE** Emmanuelle, **MOINDROT** Vincent, **LESUR** Frédéric; RTE, Paris, France

**B2.6 Wet designs for HV submarine power cables**

**KARLSTRAND** Johan; JK Cablegrid Consulting AB, Karlskrona, Sweden

**FURUHEIM** Knut-Magne; Nexans Norway AS, Halden, Norway

**HVIDSTEN** Sverre, **FAREMO** Hallvard; SINTEF Energy, Trondheim, Norway

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**C2 System reliability management**

Topic 5: Diagnosis, Maintenance, Remaining Life Estimation and Management

Monday June 22<sup>nd</sup>, 2015 - 14:30 - 16:00 - Room: C

Chairman: **Maximo Juan; Viakable Operaciones, Mexico**

Rapporteur: **Cabau Matthieu; RTE, France**

**C2.1 Repeated field tests - Utility case studies of the value of trending**

**HAMPTON** Nigel, **PERKEL** Josh; NEETRAC, Atlanta, Georgia, USA

**HERNANDEZ** Jean Carlos; Universidad de Los Andes, Merida, Venezuela

**C2.2 Performance optimization of underground power cables using real-time-thermal-rating**

**OLSCHEWSKI** Martin, **HILL** Wieland; LIOS Technology GmbH, Cologne, Germany

**C2.3 Improving cable system reliability by monitored withstand diagnostics - Featuring high efficiency at reduced test time**

**BAWART** Manfred; BAUR Prüf und Messtechnik, Sulz, Austria

**FERRER CAMPS** Carlos, **GAMEZ** Joseba Koldo, **VILLALONGA** Antoni; Endesa Distribucion Electrica, Palma de Mallorca, Spain

**FERRERES** José Luis; MARTIN BAUR S.A., Barcelona, Spain

**C2.5 Underground power cable health indexing and risk management**

**MEIJER** Sander, **VAN DER WIELEN** Peter, **VERMEER** Mischa, **WETZER** Jos, **DE HAAN** Evert; DNV GL, Arnhem, The Netherlands

**C2.6 Belgian experience with real time temperature system in combination with distributed temperature sensing techniques**

**LEEMANS** Pieter; Elia, Brussels, Belgium

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**D2 Reliability diagnosis**

Topic 3: Testing Methods: Electrical and Not Electrical

Monday June 22<sup>nd</sup>, 2015 - 14:30 - 16:00 - Room: D

Chairman: **Orton Harry E.; Orton Consulting Engineers International, Canada**

Rapporteur: **Musquin Max; General Cable ( Silec Cable), France**

**D2.1 Diagnostics of control and instrumentation cables in nuclear power plant via time-frequency domain reflectometry with optimal reference signal**

**LEE** Chun-kwon, **CHANG** Seung-jin, **JUNG** Moon-kang, **HAN** Yee-jin, **LEE** Geon-seok, **PARK** Jin Bae, **SHIN** Yong-june; Yonsei University, Seoul, Republic of Korea

**D2.2 Long lengths transmission power cables on-site testing up to 500 kV by damped AC voltages**

**SEITZ** Paul, **QUAK** Benjamin; Seitz Instrumentns AG, Niederrohrdorf, Switzerland

**GULSKI** Edward; onsite hv solutions ag, Luzern, Switzerland

**WILD** Manuel; Stuttgart University of Technology, Stuttgart, Germany

**DE VRIES** Frank; Liandon B.V., Alkmaar, The Netherlands

**D2.3 New integrated solution for DAC and VLF testing and diagnosis of distribution power cable circuits**

**QUAK** Benjamin, **SEITZ** Paul P.; Seit Instrumentns AG, Niederrohrdorf, Switzerland

**GULSKI** Edward; onsite hv solutions ag, Luzern, Switzerland

**DE VRIES** Frank; Liandon B.V., Alkmaar, The Netherlands

- D2.4** **End of life of underground medium voltage cables on Pacific islands**  
**HENNUY** Blandine, **PIOT** Sam; *Laborelec, Linkebeek, Belgium*  
**COULON** Sébastien; *EDT, Papeete, French Polynesia*
- D2.5** **Expanding the performance of on site testing with frequency tuned resonant test systems**  
**ERDENIZ** Sadettin, **GÜRSOY** Kemal; *EMELEC Electrical Engineering & Trading PLC, Istanbul, Turkey*  
**MOHAUPT** Peter, **GEIGER** Toni; *Mohaupt High Voltage, Mieders, Austria*
- D2.6** **Effectiveness and comparability of condition tests on MV cables**  
**BUYS** Peter, **VAN HOUWELINGEN** Dirk; *Stedin BV, Rotterdam, The Netherlands*
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## **E2 Cable ratings calculations 1**

Topic 2: Cables and Accessories, Design - Modelling

Monday June 22<sup>nd</sup>, 2015 - 14:30 - 16:00 - Room: E

Chairman: **Rittinghaus Dirk; Energycableconsult, Germany**

Rapporteur: **Rémy Christian; Prysmian Câbles & Systèmes, France**

### **E2.1 A guide for rating calculations of insulated cables**

**DE WILD** Frank; *DNV GL, Arnhem, The Netherlands*  
**VAN ROSSUM** Jos; *Prysmian, Delft, The Netherlands*  
**ANDERS** George; *Anders Consulting, Toronto, Ontario, Canada*  
**BRIJS** Bruno; *Elia Engineering, Brussels, Belgium*  
**BASCOM** Rusty; *Electrical Consulting Engineers, P.C., Schenectady, New York, USA*  
**PILGRIM** James A.; *University of Southampton, Southampton, UK*  
**COELHO** Marcio; *Procable, São Paulo - SP, Brazil*  
**HUELSKEN** Georg; *nkt cables, Cologne, Germany*  
**KULJACA** Nikola; *Prysmian Group, Milan, Italy*  
**MARTINSSON** Bo; *ABB, Karlskrona, Sweden*  
**NAM** Seok-hyun; *LS Cable Ltd., Gyeongbuk, Republic of Korea*  
**RAKOWSKA** Aleksandra; *Poznan University of Technology, Poznan, Poland*  
**RÉMY** Christian; *Prysmian Group, Gron, France*  
**TAKAHASHI** Tsuguhiro; *CRIEPI, Nagasaka, Japan*  
**CORSARO** Pietro; *Brugg Kabel AG, Brugg, Aargau, Switzerland*  
**FALCONER** Antony; *Aberdare Cable, Port Elisabeth, South Africa*  
**GONZÁLEZ** Alberto; *GasNatural Fenosa, Madrid, Spain*  
**WAITE** Francis; *National Grid Plc, Warwick, UK*

### **E2.2 Gravitational cooling of cable installations**

**BRAKELMANN** Heinrich; *BCC Cable Consulting, Rheinberg, Germany*  
**WASCHK** Volker; *nkt cables, Cologne, Germany*

### **E2.3 HVDC cable rating methodology: Thermal, electrical and mechanical constraints**

**HUANG** Ziyi, **PILGRIM** James A., **LEWIN** Paul L., **SWINGLER** Steve; *University of Southampton, Southampton, UK*  
**TZEMIS** Gregory; *National Grid Plc, Warwick, UK*

### **E2.4 Calculation of the current rating for complex cable arrangement in a deep tunnel**

**ANDERS** George; *Lodz University of Technology, Lodz, Poland*  
**BOCHENSKI** Boguslaw; *Kinectrics Inc., Toronto, Ontario, Canada*  
**HENNING** Gunnar; *ABB AB, High Voltage Cables, Karlskrona, Sweden*

### **E2.5 Accurate analytical formula for calculation of sheath and armour losses of three core submarine cables**

**HATLO** Marius, **OLSEN** Espen, **STOLAN** Ronny; *Nexans AS, Halden, Norway*  
**KARLSTRAND** Johan; *JK Cablegrid Consulting AB, Karlskrona, Sweden*

### **E2.6 Electrical contacts impact on the DC resistance measurement of metallic conductors: application on an industrial measurement device**

**ZEROUKHI** Youcef, **NAPIERALSKA-JUSZCZAK** Ewa, **MORGANTI** Fabrice; *Laboratory of Electro-technical Systems and Environment (LSEE), University of Artois, Béthune, France*  
**VEGA** Guillaume; *Nexans, Lens, France*



## F2 Young researchers contest

Monday June 22<sup>nd</sup>, 2015 - 14:30 - 16:00 - Room: F

Chairman: **Gubanski Stanislaw; Chalmers University of Technology, Sweden**

Rapporteur: **Notingher Petru; Institut d'Électronique du Sud - Université Montpellier 2, CNRS, France**

- F2.01** *The investigation of conduction current and dissipation power distributions in XLPE under HVDC at high temperature environment*  
**FUJITOMI** Toshiyuki, **KATO** Tsuyoshi, **MIYAKE** Hiroaki, **TANAKA** Yasuhiro; Tokyo City University, Tokyo, Japan
- F2.02** *Study of XLPE dielectric properties for HVDC cables during combined thermal and electrical ageing*  
**HASCOAT** Aurélien, **CASTELLON** Jérôme, **AGNEL** Serge; Institut d'Electronique du Sud, Université Montpellier 2, Montpellier, France  
**FRELIN** Wilfried, **EGROT** Philippe; EDF R&D, Les Renardières, France  
**HONDAA** Pierre, **AMMI** Soraya; RTE, Paris-La Défense, France  
**LEROUX** Dominique, **ANDERSSON** Johan, **ERIKSSON** Virginie; BOREALIS, Stenungsund, Sweden
- F2.03** *Influence factors of field inversion in HVDC cables*  
**FUCHS** Karsten, **BERGER** Frank; Ilmenau University of Technology, Ilmenau, Germany  
**FISCHER** Andreas, **DRUMMER** Dietmar; Institute of Polymer Technologie Friedrich-Alexander-Universität Erlangen-Nürnberg, Erlangen-Nürnberg, Germany
- F2.04** *Analysis of technical planning principles for partial underground cabling in meshed extra-high voltage Grids*  
**VEERASHEKAR** Kishan; Friedrich Alexander University Erlangen-Nuremberg, Erlangen, Germany  
**SIEBELS** Carsten; TenneT TSO GmbH, Bayreuth, Germany  
**LA SETA** Piergiovanni; Siemens AG, Erlangen, Germany  
**FUCHS** Bernhard; RWTH Aachen University, Aachen, Germany
- F2.05** *Eco-friendly nanodielectrics with enhanced thermal and electrical properties for HVDC cable insulation*  
**ZHOU** Yao, **HE** Jinliang, **HU** Jun, **DANG** Bin; State Key Lab of Power Systems, Department of Electrical Engineering, Tsinghua University, Beijing, China
- F2.06** *Effect of state of stress on space charge accumulation in silicon rubber insulation of HVDC cables*  
**GUO** David; State Key Lab of Control and Simulation of Power Systems and Generation Equipment, Dept of Electrical Engineering, Tsinghua University, Beijing, China
- F2.07** *Spatially-resolved measurement and diagnostic method for power cables using interference characteristics of travelling waves*  
**FISCHER** Erik, **WEINDL** Christian; Institute of Electrical Energy Systems, University of Erlangen-Nuremberg, Erlangen, Germany
- F2.08** *Modeling of viscoelastic dynamic bending stiffness for VIV analysis of submarine cables*  
**HEDLUND** Johan; ABB AB, High Voltage Cables, Karlskrona, Sweden
- F2.11** *DC cable modeling and High Voltage Direct Current grid grounding system*  
**LOUME** Dieynaba, **BERTINATO** Alberto, **NGUYEN TUAN** Minh; SuperGrid Institute, Villeurbanne, France  
**RAISON** Bertrand; G2elab, Saint Martin d'Hères, France
- F2.12** *Development and engineering application of ±160 kV XLPE to three-terminal VSC HVDC project in China*  
**HOU** Shuai, **FU** Mingli, **ZHAO** Linjie; Electric Power Research Institute of China Southern Power Grid, Guangzhou, China
- F2.14** *Relationship between breakdown strengths and trapping parameters of serviced XLPE cables*  
**LIU** Ning, **CHEN** George; University of Southampton, Southampton, UK  
**XU** Yang; Xi'an Jiaotong University, Xi'an, China
- F2.15** *Characteristics of Electrical Tree's Initiation and Propagation in Silicone Rubber*

**ZHANG** Yunxiao, **ZHOU** Yuanxiang, **SCHNETTLER** Armin; *State Key Lab of Control and Simulation of Power Systems and Generation Equipments, Department of Electrical Engineering, Tsinghua University, Beijing, China*  
**ZHANG** Xu; *North China Electric Power Research Institute Co Ltd., Beijing, China*

- F2.16** **Optimization of High Voltage electrodes and HV cable accessories design by using MATLAB and FEMM**  
**TUNA** Enis; *Demirer Kablo, Bilecik, Turkey*
- F2.17** **Influence on measured conductor AC resistance of High Voltage cables when the shield is used as return conductor**  
**HÖGÅS** Marcus, **RYDLER** Karl-Erik; *SP Technical Research Institute of Sweden, Borås, Sweden*
- F2.18** **Measurement of the conductor temperature in power cable production**  
**FRECHEN** Henning, **PUFFER** Ralf, **SCHNETTLER** Armin; *RWTH Aachen University, Aachen, Germany*  
**BRAMMER** Gregor; *Forschungsgemeinschaft für Elektrische Anlagen und Stromwirtschaft e.V., Mannheim, Germany*
- F2.19** **Improvement of ampacity ratings of Medium Voltage cables in protection pipes by comprehensive consideration and selective improvement of the heat transfer mechanisms within the pipe**  
**BALZER** Constantin, **HINRICHSEN** Volker; *TU Darmstadt, High Voltage Laboratories, Darmstadt, Germany*  
**DREFKE** Christoph, **STEGNER** Johannes, **SASS** Ingo; *TU Darmstadt, Geothermal Science and Technology, Darmstadt, Germany*  
**HENTSCHEL** Klaus; *Bayernwerk / e-on, Regensburg, Germany*
- F2.20** **Characterization of Transparent Fluorescent Silicones for Optical Monitoring of High-Voltage Cable Accessories**  
**KUCHARCZYK** Krzysztof, **BANASZAK** Szymon, **GAWRYLCZYK** Konstanty; *West Pomeranian University of Technology, Szczecin, Poland*  
**LEISTNER** André; *Polymeric GmbH, Berlin, Germany*  
**SIEBLER** Daniel; *BAM Federal Institute of Materials Research and Testing, Berlin, Germany*  
**HEIDMANN** Gerd; *IPH Institut "Prüffeld für Elektrische Hochleistungstechnik" GmbH (CESI Group), Berlin, Germany*
- F2.21** **Predicted rating system for directly buried cables**  
**HUANG** Ru, **PILGRIM** James A., **LEWIN** Paul L.; *University of Southampton, Southampton, UK*  
**SCOTT** David, **BLACKWELL** Anna, **MORRICE** Daniel; *National Grid plc, Warwick, UK*
- F2.22** **Space charge behaviors of PP/EPDM/ZnO nanocomposites for recyclable HVDC cable**  
**DANG** Bin, **HE** Jinliang, **HU** Jun, **ZHOU** You; *State Key Lab of Power Systems, Dept. of Electr. Eng., Tsinghua Univ., Beijing, China*
- F2.23** **Estimating the losses in three core submarine power cables using 2D and 3D FEA simulations**  
**STURM** Sebastian, **PAULUS** Johannes; *University of Applied Sciences Würzburg-Schweinfurt, Schweinfurt, Germany*  
**BERGER** Frank; *Ilmenau University of Technology, Ilmenau, Germany*  
**ABKEN** Karl-Ludwig; *Norddeutsche Seekabelwerke GmbH /General Cable, Nordenham, Germany*
- F2.24** **Thermal impedance of insulated overhead power cables heated by joule losses and solar radiation**  
**CHATZIPANAGIOTOU** Panagiotis, **TOSCANO** Alexandros Saverio, **PAPAGIANNPOULOS** Ioannis; *Aristotle University of Thessaloniki, Department of Electrical and Computer Engineers, Thessaloniki, Greece*  
**DE MEY** Gijbert; *Ghent University, Department of Electronics and Information Systems, Ghent, Belgium*  
**WIECEK** Boguslaw; *University of Lodz, Institute of Electronics Technical, Lodz, Poland*  
**MARANDA** Witold, **NAPIERALSKI** Andrzej; *Technical University of Lodz, Department of Microelectronics and Computer Science, Lodz, Poland*
- F2.25** **Measurement and modeling of surface charge accumulation on insulators in HVDC gas insulated line (GIL)**  
**ZHANG** Boya, **WANG** Qiang, **ZHANG** Guixin; *Tsinghua University, Beijing, China*

Monday June 22<sup>nd</sup>, 2015 - 16:30

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### **A3 HV operating conditions**

Topic 8: HV and EHV AC Cable Systems

Monday June 22<sup>nd</sup>, 2015 - 16:30 - 18:15 - Room: A

Chairman: **SaldivarCantu Candelario de J.; Viakable Operaciones, Mexico**

Rapporteur: **Dubois David; Nexans, France**

#### **A3.1 Indirect pipe water cooling study for a 220 kV underground XLPE cable system in New Zealand**

**JOYCE** Richard; Transpower New Zealand Limited, Wellington, New Zealand

**LLOYD** Simon, **WILLIAMS** Alan; Cable Consulting International, Sevenoaks, Kent, UK

#### **A3.2 Cable replacement in a generation plant**

**JORAND** Patrick, **MOUSSET** Fabrice, **MAUGAIN** Yves; EDF CIST, Saint-Denis, France

**OUENZAR** Mehdi, **GUYOT** Hervé; SPAC, Clichy, France

#### **A3.3 Degradation mechanism of SCOF cable due to cable core movement**

**MATSUYA** Yuji, **KAYA** Takeshi, **SOGA** Manabu; The Kansai Electric Power Co., Inc., Osaka, Japan

**TSUTSUMI** Takahiko, **OKAMOTO** Gaku; J-Power Systems Corporation, Osaka, Japan

**ITABASHI** Hideyuki, **MITSUYAMA** Yasuichi; VISCAS Corporation, Tokyo, Japan

#### **A3.4 Performance evaluation of integrity monitoring based on optical fibre distributed temperature and distributed acoustic sensing**

**CONWAY** Chris; Bandweaver, Richmond, UK

**MONDANOS** Michael; Silixa Ltd., Elstree, UK

#### **A3.6 Operating records and recent technology of DTS system and dynamic rating system (DRS)**

**WATANABE** Tsunefumi; J-Power systems Corporation, Osaka, Japan

#### **A3.7 Application of knowledge engineering approach to mitigate the infant mortality risk of HV cable system in Mea Thailand**

**RAJAKROM** Asawin; Metropolitan Electricity Authority, Bangkok, Thailand

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### **B3 Submarine cable testing & qualifications**

Topic 10: Submarine Cable Systems

Monday June 22<sup>nd</sup>, 2015 - 16:30 - 18:15 - Room: B

Chairman: **de Wild Frank; DNV GL, The Netherlands**

Rapporteur: **Charles Fabien; General Cable, France**

#### **B3.1 Long term qualification of XLPE electrical insulation systems for offshore deep water cables**

**FAREMO** Hallvard; SINTEF Energy Research, Trondheim, Norway

**BENGTSSON** Karl Magnus, **KVARME** Hans; Nexans Norway AS, Oslo, Norway

#### **B3.2 Recommendations for mechanical tests on sub-marine cables**

**BOEDEC** Marc, **DUBOIS** David; Nexans, Calais, France

**CLASEN** Geir, **STOLAN** Ronny; Nexans, Halden, Norway

**BRADLEY** Caroline; National Grid Plc, Warwick, UK

**KRÜGER OLSEN** Sören; Energinet, Ballerup, Denmark

**KIM** Sungyun; LS Cable & System, Gyeongbuk, Republic of Korea

**MCPHAIL** Allen; Cabletricity Connections Ltd., Vancouver, Washington, USA

**MIRAMONTI** Gianni; Prysmian, Milan, Italy

**KOUTI** Tuomo; Prysmian, Kirkkonummi, Finland

**JEROENSE** Marc, **TYRBERG** Andreas; ABB, Karlskrona, Sweden

**NAKAJIMA** Takenori; VISCAS Corporation, Tokyo, Japan

**PRIETO MONTERRUBIO** Juan; Red Eléctrica de España, Madrid, Spain

**ANTON** Svetlana; *nkt cables, Cologne, Germany*  
**GEORGALLIS** George; *Hellenic Cables, Sousaki Korinthias, Greece*  
**BOUDINET** Nathalie, **THEODULE** Lucie; *RTE, Paris La Défense, France*  
**ISUS** Daniel; *General Cable, Manlleu, Catalunya, Spain*  
**GUIZZO** Luca; *TERNA, Rome, Italy*

- B3.4** **Type test and special tension test of 230 kV XLPE submarine cable system**  
**ONA** Satoshi, **KAZAMA** Tatsuya, **NOZAKI** Takehiro, **MASHIO** Shoji; *J-Power Systems Corporation, Osaka, Japan*
- B3.5** **Challenge of fault location on long submarine power cables**  
**BAWART** Manfred; *BAUR Prüf und Messtechnik, Sulz, Austria*  
**MARZINOTTO** Massimo; *TERNA, Rome, Italy*  
**MAZZANTI** Giovanni; *University of Bologna, Bologna, Italy*
- B3.6** **Extension of qualification applied on a MV extruded submarine cable in France**  
**MAMMERI** Mohamed, **MAURY** Romain; *General Cable, Montereau-Fault-Yonne, France*  
**DE ROBIEN** Gabriel; *EDF, Paris, France*  
**BELLOIR** Vincent; *ERDF, France*
- B3.7** **Measurements of losses on three core submarine power cables**  
**FRELIN** Wilfried, **MOREAU** Christophe; *EDF R&D, Moret-sur-Loing, France*  
**WILLEN** Dag, **THIDEMANN** Carsten, **WASCHK** Volker; *nkt cables, group gmbh & KG, Germany*  
**DE ROBIEN** Gabriel; *EDF CIST, Saint-Denis, France*  
**BOUDINET** Nathalie; *RTE, Paris La Défense, France*

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### **C3** **Diagnosis methods**

Topic 5: Diagnosis, Maintenance, Remaining Life Estimation and Management  
*Monday June 22<sup>nd</sup>, 2015 - 16:30 - 18:15 - Room: C*

Chairman: **Boone Willem**; *DNV GL, The Netherlands*

Rapporteur: **Naud Antoine**; *RTE, France*

- C3.1** **Localized temperature sensing (LTS) as new approach to HV cable system monitoring and uprating**  
**BALZA** Xabier; *General Cable, Barcelona, Spain*  
**BENGOECHEA** Javier; *Lumiker, Bilbao, Spain*  
**GONZÁLEZ** Alberto, **MARTÍN-DORADO** Ángel; *Unión Fenosa Distribución, Madrid, Spain*
- C3.2** **Fiber optic temperature sensor using intermodal interference for linear infrastructures monitoring**  
**MUSIN** Frédéric, **MEGRET** Patrice, **WUILPART** Marc; *University of Mons - FPMs - SET, Mons, Belgium*  
**GRANDJEAN** Henri; *ORES, Louvain-la-Neuve, Belgium*  
**CALLEMEYN** Jan, **FOHAL** Jean-Christophe; *CERISIC, Mons, Belgium*
- C3.4** **Long power cables: exposing incipient faults and optimizing performance using extra-long distance fiber optic distributed temperature monitoring**  
**ROCHAT** Etienne, **NIKLES** Marc, **MATVICHUK** Baz, **ROWSSELL** Jane; *Omnisens SA, Morges, Switzerland*
- C3.5** **Estimating the impact of VLF frequency on effectiveness of VLF withstand diagnostics**  
**HAMPTON** Nigel, **PERKEL** Josh; *NEETRAC, Atlanta, Georgia, USA*  
**HERNANDEZ** Jean Carlos; *Universidad de Los Andes, Merida, Venezuela*  
**TOMER** Vivek, **KUNTSEVICH** Marina; *Dow Chemical, Spring House, USA*
- C3.6** **Off-line diagnostic measurements: Type of measurement versus insulation weakness targeted**  
**ESPILIT** Thierry; *EDF R&D, Ecuelles, France*  
**DRAPEAU** Jean-François; *IREQ, Varennes, Québec, Canada*  
**HVIDSTEN** Sverre; *SINTEF Energy Research, Trondheim, Norway*  
**TAMBRUN** Roger; *ERDF, Paris La Défense, France*
- C3.7** **Online PD monitoring of short cable systems installed in sub-stations**  
**GARNACHO** Fernando; *LCOE-FFII, Madrid, Spain*  
**ORTEGO** Javier, **SÁNCHEZ-URÁN** Miguel Ángel; *ETSIDI-UPM, Madrid, Spain*

### **D3 Thermo-mechanical testing**

Topic 3: Testing Methods: Electrical and Not Electrical

Monday June 22<sup>nd</sup>, 2015 - 16:30 - 18:15 - Room: D

Chairman: **Marelli Marco; Prysmian Group, Italy**

Rapporteur: **Dhuicq Bernard; General Cable, France**

#### **D3.1 North Auckland and Northland 220 kV cable project - managing thermo-mechanical forces in large conductor XLPE cable circuits**

**JOYCE** Richard, **MCBURNEY** Ian, **GREGROY** Brian; Transpower New Zealand Limited, Wellington, New Zealand

#### **D3.2 Cigre WG B1.34: mechanical forces with large conductor cross section XLPE cables**

**KAUMANN** Johannes; LS Cable & System, Gumi-si, Republic of Korea

**BACCHINI** Marco; Prysmian, Milan, Italy

**GEHLIN** Gunnar; Svenska Kraftnaet, Stockholm, Sweden

**GREGORY** Brian; Cable Consulting International, Sevenoaks, Kent, UK

**JOHNSON** Dennis; Powereng., Lenexa, USA

**KURATA** Tatsuo; J-Power systems Corporation, Osaka, Japan

**MAY** Hans-Peter; nkt cables, Cologne, Germany

**PYE** Caroline; Mott McDonald, Brighton, Ireland

**REINOSO** Ricardo; Red Eléctrica de España, Madrid, Spain

**SAMUEL** Jourice; Nexans, Calais, France

**TARNOWSKI** Janislaw; IREQ, Varennes, Québec, Canada

**VAN DEN THILLART** Ron; Tennet, Tilburg, The Netherlands

**VILHELMSSEN** Morten; Energinet.dk, Frederica, Denmark

**WALD** Detlef; Eifelkabel, Villmergen, Switzerland

#### **D3.4 Thermo-mechanical behavior of HV and EHV large conductor XLPE cables in duct-manhole systems**

**ECKROAD** Steve, **ZHAO** Tiebin; EPRI, Palo Alto, California, USA

**GALLOWAY** Stephen J., **GREGORY** Brian; Cable Consulting International, Sevenoaks, Kent, UK

**KING** Stephen M.; Dassault Systemes UK Ltd., Warrington, Cheshire, UK

#### **D3.5 Measurement of thermomechanical properties of 400 kV 2500 mm<sup>2</sup> cable**

**PILGRIM** James A., **HUNTER** Jack, **PALMER** Neil; University of Southampton, Southampton, UK

**GREGORY** Brian; Cable Consulting International, Sevenoaks, Kent, UK

**MOORHOUSE** David; National Grid plc, Warwick, UK

#### **D3.7 220 kV transpower NZ North Auckland and Northland (NAaN) project - design validation of thermo-mechanical behaviour**

**ROUILLARD** Vincent; Victoria University, Melbourne, Victoria, Australia

**RAHMAN** Naveed; Nexans Olex, Tottenham, Victoria, Australia

#### **D3.8 Cable installation in vertical shaft**

**MAGNANI** Francesco; Cable Installation Consultant, Milan, Italy

**BACCHINI** Marco; Prysmian Power Link S.r.l, Milan, Italy

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### **E3 Cable ratings calculations 2**

Topic 2: Cables and Accessories, Design - Modelling

Monday June 22<sup>nd</sup>, 2015 - 16:30 - 18:30 - Room: E

Chairman: **Colla Luigi; Prysmian Power Link Srl, Italy**

Rapporteur: **Dorison Eric; EDF R&D, France**

#### **E3.1 A new approach for estimation of the dynamic thermal rating model parameters**

**FARAHANI** Alireza, **KAMARA** Wouleye; CYME Int/Eaton Corp., Montréal, Québec, Canada

**ANDERS** George; Lodz University of Technology, Lodz, Poland

**BIC** Emmanuel; General Cable, Montereau-Fault-Yonne, France

**KEPPLER** Uwe; *AP Sensing, Boeblingen, Germany*

**E3.2     *Results and verifications from REE experience on monitoring isolated cables with DTS***

**ALVAREZ-CORDERO** Gabriel, **SOTO-CANO** Lourdes, **GONZALEZ-MORALES** Gerardo; *Red Eléctrica de España, Alcobendas, Madrid, Spain*

**E3.3     *New issues in current rating of power cables installed in unventilated tunnels***

**DORISON** Eric, **FRELIN** Wilfried; *EDF R&D, Moret-sur-Loing, France*

**ANDERS** George; *Lodz University of Technology, Lodz, Poland*

**MOREAU** Olivier; *EDF CIST, Dubai, United Arab Emirates*

**E3.5     *Derating factors for multiple circuits of low and medium voltage cable installations***

**BOCHENSKI** Boguslaw; *Kinectrics Inc., Toronto, Ontario, Canada*

**ANDERS** George; *Lodz University of Technology, Lodz, Poland*

**E3.6     *A novel cooling solution for an intersection of a 2x2 duct bank with HV cables crossed by a steam pipe***

**ANDERS** George; *Lodz University of Technology, Lodz, Poland*

**BRAKELMANN** Heiner; *BCC Cable Consulting, Duisburg, Germany*

**CHERUKUPALLI** Sudhakar; *BC Hydro, Vancouver, Canada*

**E3.7     *Snaking of cables in empty pipes***

**MAIOLI** Paolo; *Prysmian SpA, Milan, Italy*

**BACCHINI** Marco; *Prysmian Power Link Srl, Milan, Italy*

**E3.8     *Review of underground cable impedance and admittance formulas***

**AMETANI** Akihiro, **LAFAlA** Isabel, **MAHSEREDJIAN** Jean; *Polytechnique Montreal, Montréal, Québec, Canada*

**NAUD** Antoine; *RTE Réseau de Transport d'Electricité, Paris, France*

Tuesday June 23<sup>rd</sup>, 2015 - 09:00

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#### **A4 HV AC new developments**

Topic 8: HV and EHV AC Cable Systems

Tuesday June 23<sup>rd</sup>, 2015 - 09:00 - 10:30 - Room: A

Chairman: **Wang Ying; Prysmian Group, Italy**

Rapporteur: **Joubert Vincent; General Cable (Silec Cable), France**

##### **A4.1 The degassing process of HV XLPE cables and its influence on selected electrical properties**

**HUOTARI** Pekka; Maillefer Extrusion Oy, Vantaa, Finland

**BENGTSSON** Magnus; Nexans Norway AS, Halden, Norway

**BOSTRÖM** Jan-Ove, **SMEDBERG** Annika; Borealis AB, Stenungsund, Sweden

##### **A4.2 Development of a up to 400 kV XLPE cable with low-smoke properties to be installed in a tunnel**

**WALD** Detlef; Eifelkabel, Villmergen, Switzerland

**ATAY** Feyzullah, **CIHAN** Ismet; Demirer Kablo, Istanbul, Turkey

**WILLIAMS** Paul; UK Power Networks, Crawley, UK

##### **A4.3 Development of compact designed 66/77 kV class XLPE cable system**

**MARUICHI** Shinji; VISCAS Corporation, Ichihara, Chiba, Japan

**OONO** Koichi, **MOKI** Masaya, **NIINOBE** Hiroshi; VISCAS Corporation, Shinagawa-Ku, Tokyo, Japan

##### **A4.4 Development of 500 kV XLPE cable accessories**

**LI** Guoji, **TAKAHASHI** Kenji; SWCC Showa Cable Systems Co Ltd., Sagami-hara-city, Kanagawa-pref, Japan

**SUMIMOTO** Tsutomu; SHOWA-TBEA (Shandong) CABLE ACCESSORIES CO., Ltd., Xintai City, Shandong Province, China

**LIU** Zhaojian; TBEA Shandong Luneng Taishan Cable Co., Ltd., Xintai City, Shandong Province, China

**KUWAKI** Akihisa; EXSYM CORPORATION, Sagami-hara City, Kanagawa Province, Japan

##### **A4.5 Improved design for anti-scattering in fault condition of outdoor termination**

**JUN** Myunghun, **KIM** Youngbum, **CHOI** Soogeol, **KIM** Jinwoo; ILJIN Electric, Seoul, Republic of Korea

##### **A4.6 Compact paperless joint for transition from LPFF to XLPE cables**

**CORSARO** Pietro; Brugg Kabel AG, Brugg, Aargau, Switzerland

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#### **B4 Installations of submarine lines**

Topic 10: Submarine Cable Systems

Tuesday June 23<sup>rd</sup>, 2015 - 09:00 - 10:30 - Room: B

Chairman: **Zhang Dongping; TenneT TSO GmbH, Germany**

Rapporteur: **Charvet Jean; RTE, France**

##### **B4.1 New approach to installation of offshore wind energy cables**

**GRIFFIOEN** Willem, **GUTBERLET** Christophe; Plumettaz SA, Bex, Switzerland

**MULDER-GROOTOONK** Jeannette; Wavin T&I, Dedemsvaart, The Netherlands

**HOJSGAARD** Lars; nkt Cables AS, Broendby, Denmark

**GRATHWOHL** Willy; nkt Cables AS, Asnaes, Denmark

**BRINGSSELL** Håkan; nkt Cables AB, Falun, Sweden

**SOERENSEN** Johnny, **BORCH-JENSEN** Niels-Joergen; Siemens Windpower, Brande, Denmark

##### **B4.2 Lillebælt - Installation and commissioning of world's first 400 kV 3-cores submarine cable**

**AHRENKIEL VILHELMOSEN** Morten; Energinet.dk, Fredericia, Denmark

**KROGH** Flemming; ABB HVC, Karlskrona, Sweden

##### **B4.3 Dynamic cable installation for Fukushima floating offshore wind farm demonstration project**

**YAGIHASHI** Kiyotomo, **TATENO** Yuji; VISCAS Corporation, Shinagawa-Ku, Tokyo, Japan

MANABE Hiroki, SAKAKIBARA Hiroyuki; Furukawa Electric CO., Ltd., Chiyoda, Tokyo, Japan

**B4.4 Development of a three-terminal ready HVDC interconnector between France and Great Britain via the island Alderney: the FAB Project**

WAERAAS DE SAINT MARTIN Gro, CHARVET Jean; RTE, Paris, France  
KELLY Sean; Transmission Investment, London, UK

**B4.6 Zanzibar interconnector 132 kV submarine cable in Tanzania**

NAKAMURA Yoshiharu, OTA Masanori; VISCAS Corporation, Tokyo, Japan  
DONAGHY Robert; ESB International, Dublin, Ireland

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**C4 MV cable diagnosis**

Topic 5: Diagnosis, Maintenance, Remaining Life Estimation and Management

Tuesday June 23<sup>rd</sup>, 2015 - 09:00 - 10:30 - Room: C

Chairman: Ottersberg Heiner; Norddeutsche Seekabelwerke GmbH / General Cable, Germany

Rapporteur: Touraine Jean-Charles; Prysmian Câbles & Systèmes, France

**C4.1 On line diagnosis experimentations for MV cables in ERDF distribution network**

DIGARD Hervé; EDF R&D, Moret-sur-Loing, France  
TAMBRUN Roger; ERDF, Paris La Défense, France

**C4.2 Accurate on-line fault location (full breakdowns) for MV cables with Smart Cable Guard**

WAGENAARS Paul, STEENNIS Fred; DNV GL, Arnhem, The Netherlands  
BROERSMA Tjeerd; Enexis, Arnhem, The Netherlands  
HARMSSEN Denny; Alliander, Arnhem, The Netherlands  
BLEEKER Pascal; Locamation, Enschede, The Netherlands

**C4.3 On-site condition assessment of XLPE MV cable joints by using an insulation tester**

BENJAMINSEN Jan Tore, ENOKSEN Henrik, HVIDSTEN Sverre; SINTEF Energy Research, Trondheim, Norway

**C4.4 Combined application of diagnostics tools for MV underground cables**

NEIER Tobias; BAUR Prüf und Messtechnik, Sulz, Austria

**C4.5 Best practice guideline for the complete condition monitoring (cm) of offshore wind farm (OWF) cable networks**

GIUSSANI Riccardo, SELTZER-GRANT Malcolm, RENFORTH Lee; HVPD Ltd., Manchester, UK

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**D4 On-site and laboratory tests 1**

Topic 3: Testing Methods: Electrical and Not Electrical

Tuesday June 23<sup>rd</sup>, 2015 - 09:00 - 10:30 - Room: D

Chairman: Plath Ronald; Technische Universität Berlin, Germany

Rapporteur: Moreau Christophe; EDF R&D, France

**D4.1 Investigation of electrical and morphological properties of 10 kV XLPE cable insulation specimens**

SHUVALOV Mikhail, OVSIENKO Vladimir; JSC "VNIIEKP", Moscow, Russia  
LAHTI Mikko, HUOTARI Pekka; Maillefer Extrusion Oy, Vantaa, Finland

**D4.2 Condition of shielded 5 kV pink EPR insulated cables after 25 years of service in wet environment**

FRYSZCZYN Bogdan; Cable Technology Laboratories, Inc., New Brunswick, New Jersey, USA  
MANTEY Andrew; EPRI, Charlotte, NC, USA

**D4.3 Measures to reduce skin-effect losses in power cables with optimized conductor design and their evaluation by measurement**

PLATH Ronald, SCHUHMAN Rolf, SUCHANTKE René; Technical University Berlin, Berlin, Germany  
WASCHK Volker; nkt cables, Cologne, Germany  
SCHROEDER Gero; Südkabel GmbH, Mannheim, Baden Württemberg, Germany



- D4.4 AC resistance measurements on skin-effect reduced large conductor power cables with standard equipment**  
**SCHROEDER** Gero, **HAERING** Dominik, **WEINLEIN** Andreas, **BOSSMANN** Axel; Südkabel GmbH, Mannheim, Baden Württemberg, Germany  
**PLATH** Ronald; Ing.-Büro HPS Berlin, Berlin, Germany  
**VALTIN** Markus; Electronics - Web and More GbR, Berlin, Germany  
**MAJID** Maitham; Balfour Beatty Utility Solutions, Dartford, UK
- D4.5 DC conductivity characterization of cables and correlation with lab measurements**  
**CHARRIER** Dimitri; Nexans Research Center, Lyon, France
- D4.6 Hyperbaric chamber to test robustness of electric cables**  
**FREANI** Laurent; Tech-Plus, Bandol, France  
**LE PECHON** Jean-Claude; JCLP Hyperbarie, Paris, France
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## **E4 Modelling**

Topic 2: Cables and Accessories, Design - Modelling

Tuesday June 23<sup>rd</sup>, 2015 - 09:00 - 10:30 - Room: E

Chairman: **Hampton Nigel; Georgia Tech NEETRAC, USA**

Rapporteur: **Nguyen Tuan Minh; EDF R&D, France**

- E4.2 Efficiency of cable transposition to decrease the induced voltage on linear third-party installations**  
**LYS BENOIT, CABAU MATTHIEU, LESUR FREDERIC; RTE, Paris, France**
- E4.3 Evaluation of "cross-talk" in power cables by use of 3d finite element computations**  
**HOYER-HANSEN** Martin, **SOLHEIM** Kristian Thinn, **LERVIK** Jens Kristian; SINTEF Energy Research, Trondheim, Norway
- E4.4 Wide-frequency modelling of submarine cables for deep water DC power delivery**  
**CARVALHO** Karolina, **SOUZA** Luiz Felipe, **RABELO** Balduino, **LIMA** Luiz André; GE Global Research Center - Brazil Technology Center, Rio de Janeiro, RJ, Brazil
- E4.5 Influence of the screen/armour permeability in magnetic fields generated by HV cables**  
**FARIA DA SILVA** Filipe, **LETH BAK** Claus; Aalborg University, Aalborg, Denmark  
**EBDRUP** Thomas; Energinet.dk, Fredericia, Denmark
- E4.6 Boute-Trans project: 225 kV AC underground cable installed in the South-East of France**  
**LAFIA** Isabel, **AMETANI** Akihiro, **MAHSEREDJIAN** Jean; Polytechnique Montreal, Montréal, Québec, Canada  
**NAUD** Antoine; RTE Réseau de Transport d'Electricité, Paris, France  
**CORREIA DE BARROS** Maria Teresa; University of Lisbon, Lisbon, Portugal

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## **A5 HV cable integration in network**

Topic 8: HV and EHV AC Cable Systems

Tuesday June 23<sup>rd</sup>, 2015 - 11:00 - 12:30 - Room: A

Chairman: **Barber Kenneth; NAN Electric Cable, Australia**

Rapporteur: **Allais Arnaud; Nexans Research Center, France**

### **A5.1 Reliability of cable based transmission grids operated based on temperature limits**

**OLSEN** Rasmus; *Energinet.dk, Fredericia, Denmark*

**HOLBOELL** Joachim; *Technical University of Denmark, Kgs. Lyngby, Denmark*

**GUDMUNSDOTTIR** Unnur Stella; *Dong Energy, Fredericia, Denmark*

### **A5.2 Installation of cables system connections to gas insulated metal-enclosed switchgear (GIS)**

**MIREBEAU** Pierre; *Nexans, Calais, France*

**MICHON** Franck, **MANSOUR** Jawdat, **SANTANA** José; *Prysmian Group, Gron, France*

**MAMMERI** Mohamed, **DHUICQ** Bernard; *General Cable, Montereau-Fault-Yonne, France*

**BAIL** Roland; *SYCABEL, Paris, France*

**GUILLEMIN** Martial; *RTE, Paris, France*

**TAILHADES** Philippe; *GIMELEC, Paris, France*

**LECLERC** Frédéric; *SIEMENS, Grenoble, France*

**FICHEUX** Arnaud; *Alstom, Aix-les-Bains, France*

### **A5.4 French feedback on civil and installation works of transmission underground cable systems**

**GUYOT** Hervé; *SERCE, Paris, France*

**HASCOET** Serge, **LESUR** Frédéric; *RTE, Paris, France*

### **A5.5 Transient studies of power cable sections in 380 kV transmission system**

**MACKOW** Andrzej, **KIZILCAY** Mustafa; *University Siegen, Siegen, North Rhine-Westphalia, Germany*

### **A5.6 Installation of twenty-four (24) lines of 150 kV XLPE power cables at 2.5 m depth below ground level in the tropical urban city Jakarta**

**STEVEN** John Yuddy; *PLN Indonesia, Jakarta, Indonesia*

**SINISUKA** Ngapuli; *Institut Teknologi Bandung, Bandung, Indonesia*

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## **B5 Submarine cables - General**

Topic 10: Submarine Cable Systems

Tuesday June 23<sup>rd</sup>, 2015 - 11:00 - 12:30 - Room: B

Chairman: **Campbell Steven; Superior Essex Energy, USA**

Rapporteur: **Domenech Sabina; General Cable, France**

### **B5.1 Analysis of electric field distribution in XLPE insulation of DC submarine cable**

**FAN** Yadong, **WANG** Jianguo, **HONG** Zejun, **ZHOU** Mi, **CAI** Li, **LI** Xianqiang; *Wuhan University, Wuhan, China*

### **B5.2 Development of submarine MV-AC power cable with aluminum conductor**

**MUELLER-SCHUETZE** Sven, **OTTERSBERG** Heiner, **SUHR** Carsten, **KRUSCHE** Ingo; *Norddeutsche Seekabelwerke GmbH / General Cable, Nordenham, Lower Saxony, Germany*

**ISUS FEU** Daniel; *General Cable, Manlleu, Barcelona, Spain*

### **B5.3 Impact of HVDC cable configuration on compass deviation**

**MEIJER** Sander, **DE GRAAF** Roald; *DNV GL, Arnhem, The Netherlands*

**HEMPHILL** Stephen, **MCGUCKIN** Mick; *Mutual Energy, Belfast, Ireland*

### **B5.4 Thermal rating method of j tubes using finite element analysis techniques**

**CHIPPENDALE** Richard, **CANGY** Priank, **PILGRIM** James A.; *University of Southampton, Southampton, UK*

### **B5.5 Degradation rates in high voltage subsea cables with polymeric water barrier designs**

**ANDERSEN VE** Torbjørn, **HVIDSTEN** Sverre, **HØLTO** Jorunn; SINTEF Energy Research, Trondheim, Norway  
**FURUHEIM** Knut-Magne, **HEDSTRÖM** Hanna; Nexans Norway AS, Halden, Norway

- B5.6** **EPR insulated cables for modern offshore systems**  
**COLLA** Luigi, **ZACCONE** Ernesto; Prysmian Power Link Srl, Milan, Italy  
**REIG** Aida; Prysmian Powerlink, Drammen, Norway

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## **C5 HV and EHV cable diagnosis**

Topic 5: Diagnosis, Maintenance, Remaining Life Estimation and Management  
Tuesday June 23<sup>rd</sup>, 2015 - 11:00 - 12:30 - Room: C

Chairman: **Tanaka Hideo**; VISCAS Corporation - Power Cable Division, Tokyo, Japan  
Rapporteur: **Bic Emmanuel**; General Cable, France

- C5.1** **Permanent PD monitoring experience on shanghai 500 kV power cable lines**  
**JIANG** Jun, **GAO** Xiaoqing, **QIAN** Tianyu; Shanghai Electric Power Company, Shanghai, China  
**XIAO** Chuanqiang, **DAI** Hongbin; SINDIA, Beijing, China
- C5.2** **Effective on-site testing and non-destructive diagnosis of new installed and service aged HV (EHV) power cables up to 230 kV**  
**GULSKI** Edward, **JONGEN** Rogier; onsite hv solutions ag, Luzern, Switzerland  
**PARCIAK** Jaroslaw; onsite hv solutions Central Europe Sp. Z o.o., Warsaw, Poland  
**MINASSIAN** Rafael; onsite hv solutions Americas Inc., Toronto, Ontario, Canada  
**RAKOWSKA** Aleksandra, **SIODLA** Krzysztof; Poznan University of Technology, Poznan, Poland
- C5.3** **Short-term partial discharge monitoring as a diagnostic tool on 400 kV XLPE cable**  
**HABEL** Markus; IPH GmbH Berlin, Berlin, Germany
- C5.4** **Condition monitoring of electrical cables using line resonance analysis (LIRA)**  
**FANTONI** Paolo; Wirescan AS, Vinterbro, Norway
- C5.5** **An alternative approach about fault location on HVAC and HVDC cables during commissioning and operation**  
**BÖHME** Frank, **SCHIERIG** Stefan, **HENSEL** Michael; HIGHVOLT Prüftechnik Dresden GmbH, Dresden, Saxony, Germany

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## **D5 On-site and laboratory tests 2**

Topic 3: Testing Methods: Electrical and Not Electrical  
Tuesday June 23<sup>rd</sup>, 2015 - 11:00 - 12:30 - Room: D

Chairman: **Hennuy Blandine**; Laborelec, Belgium  
Rapporteur: **Santana José**; Prysmian Câbles & Systèmes, France

- D5.1** **Robust characterization of the DC-conductivity of HVDC insulation materials at high electric fields**  
**GHORBANI** Hossein; ABB AB, High Voltage Cables, Karlskrona, Sweden  
**OLSSON** Carl-Olof; ABB AB, Corporate Research, Västerås, Sweden  
**ANDERSSON** Carl-Johan, **ENGLUND** Villgot; Borealis AB, Stenungsund, Sweden
- D5.3** **Automated temperature monitoring and control system for type and design testing of high voltage XLPE insulated cable systems**  
**BOEV** Ivan, **BOBKO** Rick, **LI** Ziqin; Kinectrics Inc., Toronto, Ontario, Canada
- D5.4** **Progress in optical PD detection for translucent and transparent HV cable accessories with improved fluorescent optical fibers**  
**PLATH** Ronald; Technical University Berlin, Berlin, Germany  
**HABEL** Wolfgang, **SIEBLER** Daniel, **ROHWETTER** Phillip, **LOTHONKAM** Chaiyaporn; BAM Berlin, Berlin, Germany  
**HEIDMANN** Gerd, **VATERRODT** Klaus; IPH GmbH Berlin, Berlin, Germany  
**LEISTNER** Aniela, **LEISTNER** André; Polymerics, Berlin, Germany  
**PEPPER** Daniel; Beuth Hochschule, Berlin, Germany

- D5.5**     **Optical PD detection in high voltage cable accessories**  
**EIGNER** Alexander, **KRANZ** Thomas; Tyco Electronics Raychem GmbH, Ottobrunn, Germany  
**VATERRODT** Klaus, **HEIDMANN** Gerd; IPH GmbH Berlin, Berlin, Germany
- D5.6**     **Online partial discharge testing of power cables in high noise environment**  
**KHAN** Ammar Anwar; Qualitrol, Glasgow, UK
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**E5**     **Cable and accessories - Design, applications**

Topic 2: Cables and Accessories, Design - Modelling

Tuesday June 23<sup>rd</sup>, 2015 - 11:00 - 12:30 - Room: E

Chairman:       **Kvarts Thomas; DONG Energy, Denmark**

Rapporteur:     **Dory Matthieu; RTE, France**

- E5.1**     **Influence of heat-shrink joints and terminations on tan delta values of a medium voltage cable installation at very low frequency**  
**JOUBERT** Theresa; Vaal University of Technology, Vanderbiljpark, South Africa  
**WALKER** Jerry; Walmet Technologies, Vereeniging, South Africa
- E5.2**     **AC resistance of submarine cables**  
**MAIOLI** Paolo, **BECHIS** Massimo; Prysmian SpA, Milan, Italy  
**DELL'ANNA** Gaia; Prysmian Power Link Srl, Milan, Italy
- E5.3**     **Study of the behaviour of a n-metal cable screen subject to an adiabatic short-circuit**  
**DOMINGO CAPELLA** José María; Grupo General Cable Sistemas SL, Barcelona, Spain
- E5.5**     **XLPE cables with aluminium laminated sheath**  
**ROENNINGEN** Terje, **SIVERTSVOLL** Børre Johansen; Siemens AS, Trondheim, Norway  
**FAREMO** Hallvard, **BRUASET** Are, **PEDERSEN** Atle, **LERVIK** Jens Kristian; SINTEF Energy Research, Trondheim, Norway
- E5.6**     **Frequency dependency of single-core cable parameters**  
**BREMNES** Jarle J.; Unitech Power Systems AS, Oslo, Norway  
**EVENSET** Gunnar; Power Cable Consulting AS, Halden, Norway

Tuesday June 23<sup>rd</sup>, 2015 - 14:30

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## A6 HVDC cables & systems

Topic 9: HVDC Cable Systems

Tuesday June 23<sup>rd</sup>, 2015 - 14:30 - 16:00 - Room: A

Chairman: **Swingler Steve; University of Southampton, UK**

Rapporteur: **Samuel Jorice; Nexans, France**

- A6.1** *Development and engineering application of  $\pm 160$  kV XLPE to three-terminal VSC HVDC project in China*  
**HOU** Shuai, **FU** Mingli, **ZHAO** Linjie; Electric Power Research Institute of China Southern Power Grid, Guangzhou, Guangdong, China
- A6.2** *Rating of HVDC submarine cable crossings*  
**HUANG** Ziyi, **PILGRIM** James A., **LEWIN** Paul L., **SWINGLER** Steve; University of Southampton, Southampton, UK  
**TZEMIS** Gregory; National Grid Plc, Warwick, UK
- A6.3** *Experience and challenge of cable connections of offshore wind farms in German North Sea*  
**WERLE** Volker, **ZHANG** Dongping, **JUNG** Jochen; TenneT TSO GmbH, Bayreuth, Germany
- A6.4** *345 kV DC XLPE extruded cable systems development*  
**MAMMERI** Mohamed, **PAUPARDIN** Marie-Laure, **LECOURTIER** Nathalie; General Cable, Montereau-Fault-Yonne, France
- A6.5** *Review of HVDC insulated transmission cables technologies*  
**MIREBEAU** Pierre; Nexans, Paris, France  
**FROHNE** Christian; Nexans, Hannover, Germany  
**LARSEN** Vegar Syrtveit; Nexans, Oslo, Norway
- A6.6** *Development process of extruded HVDC cable systems*  
**HAERING** Dominik, **SCHROEDER** Gero, **WEINLEIN** Andreas, **BOSSMANN** Axel; Südkabel GmbH, Mannheim, Baden Württemberg, Germany

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## B6 Materials for HVDC cables

Topic 1: Materials, New Materials and Ageing Assessment in AC and DC

Tuesday June 23<sup>rd</sup>, 2015 - 14:30 - 16:00 - Room: B

Chairman: **Gubanski Stanislaw; Chalmers University of Technology, Sweden**

Rapporteur: **Teyssède Gilbert; CNRS / Laplace, University P. Sabatier, France**

- B6.1** *Study of the thermal ageing of the XLPE for HVDC applications*  
**BILLORE** Justine, **AUGE** Jean-Louis, **JOUBERT** Charles; Ampere Laboratory, Villeurbanne, France  
**PRUVOST** Sébastien, **GAIN** Olivier; IMP Laboratory, Villeurbanne, France  
**ALLAIS** Arnaud, **DARQUES** Michaël; SuperGrid Institute, Villeurbanne, France
- B6.2** *Long term performance of XLPE insulation materials for HVDC cables*  
**ERIKSSON** Virginie, **ANDERSSON** Johan, **ENGLUND** Villgot, **HAGSTRAND** Per-Ola, **KONTRO** Anna, **NILSSON** Ulf H., **SILFVERBERG** Emy, **SMEDBERG** Annika; Borealis AB, Stenungsund, Sweden
- B6.3** *Key properties of next generation XLPE insulation material for HVDC cables*  
**ENGLUND** Villgot, **ANDERSSON** Johan, **ERIKSSON** Virginie, **HAGSTRAND** Per-Ola, **LOYENS** Wendy, **NILSSON** Ulf H., **SMEDBERG** Annika; Borealis AB, Stenungsund, Sweden
- B6.4** *Effect of static mechanical strain on the DC conductivity of extruded cross-linked polyethylene cable insulation*  
**HESTAD** Øystein L., **ENOKSEN** Henrik, **HVIDSTEN** Sverre; SINTEF Energy Research, Trondheim, Norway

- B6.5** **DC electrical conductivity in LDPE-based nanocomposites**  
**HOANG** Anh, **GUBANSKI** Stanislaw, **SERDYUK** Yuriy; Chalmers University of Technology, Gothenburg, Sweden  
**PALLON** Love, **LIU** Dongming, **COBO SANCHEZ** Carmen, **GEDDE** Ulf; KTH Royal Institute of Technology, Stockholm, Sweden
- B6.6** **Loss of dielectric strength of polymers due to high-frequency voltages in HVDC applications**  
**BIRLE** Matthias, **LEU** Carsten; Technische Universität Ilmenau, Research Unit High-Voltage Technologies, Ilmenau, Germany

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## **C6 Maintenance**

Topic 5: Diagnosis, Maintenance, Remaining Life Estimation and Management

Tuesday June 23<sup>rd</sup>, 2015 - 14:30 - 16:00 - Room: C

Chairman: **Awad Ray; Ray Awad Inc., Canada**

Rapporteur: **Galeron Didier; Nexans, France**

- C6.2** **REE's research and development projects related to predictive maintenance based on monitoring of critical parameters in high voltage underground cables**  
**DONOSO** Gonzalo, **REINOSO** Ricardo, **GARCÍA** Rafael, **ALVARADO** Luis Felipe; Red Eléctrica de España, Madrid, Spain  
**ORTEGO** Javier; DIAEL, Madrid, Spain  
**TESTA** Luigi; Prysmian Cables and Systems, Barcelona, Spain
- C6.3** **Rejuvenation of EPR-insulated medium voltage underground cables**  
**VARJIAN** Richard, **BUSBY** David, **BERTINI** Glen; Novinium, Inc, Auburn, Washington, USA
- C6.4** **DGA (dissolved gas analysis) diagnostic method reveals internal carbonization in oil-filled High Voltage extruded cable terminations**  
**SINGH** Nirmal, **SINGH** Sandeep, **REYES** Rommy; DTE Energy, Detroit, MI, USA  
**HLAVAC** Jeff, **SCHMIDT** Robert; Lincoln Electric System, Lincoln, Nebraska, USA  
**UZELAC** Milan; G&W Electric Company, Bolingbrook, IL, USA  
**ZHAO** Tiebin, **KUMMER** David; EPRI, Charlotte, NC, USA
- C6.5** **Prelocating and pinpointing faults on underground Medium-Voltage cables: review of Hydro-Quebec's experience**  
**REYNAUD** Lionel, **PINEAU** Daniel; Hydro-Québec (IREQ), Varennes, Québec, Canada  
**COTE** Jacques; Hydro-Québec, Montréal, Québec, Canada
- C6.6** **Dielectric diagnosis of extruded cable insulation by very low frequency and spectroscopy techniques - a few case studies**  
**BURJUPATI** Nageshwar Rao; Central Power Research Institute, Bangalore, Karnataka, India

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## **D6 Specific testing trends 1**

Topic 3: Testing Methods: Electrical and Not Electrical

Tuesday June 23<sup>rd</sup>, 2015 - 14:30 - 16:00 - Room: D

Chairman: **Zhao Tiebin (Tom); EPRI - Electrical Power Research Institute, USA**

Rapporteur: **Favrie Chantal; France**

- D6.1** **Experiences of combined HV & EHV qualifications to IEC, AEIC and challenges IEEE 48 & 404**  
**RILEY** Caryn, **PERKEL** Josh, **HILL** Ray, **HAMPTON** Nigel; NEETRAC, Atlanta, Georgia, USA
- D6.2** **How to perform a pre-qualification test - interpretation of the standard**  
**PULTRUM** Edwin, **SLOOT** Wouter, **EILANDER** Cor, **BAAS** Alphons, **BIN** Gu; KEMA Laboratories, Arnhem, The Netherlands
- D6.3** **Effectiveness of tests after installation on power cable systems**  
**VAN DER WIELEN** Peter, **VAN MAANEN** Bernd, **STEENNIS** Fred; DNV GL, Arnhem, The Netherlands
- D6.4** **Final countdown for CPR cable classification - View from a notified body**

**CORNELISSEN** Christian; *VDE Testing and Certification Institute, Offenbach, Germany*

- D6.5** **Testing submarine cables for combined axial compression and bending loads**  
**TYRBERG** Andreas, **ERIKSSON** Erik; *ABB AB, High Voltage Cables, Karlskrona, Sweden*  
**GRØNSUND** Jørgen, **KLÆBO** Frank; *MARINTEK, Department of Structural Engineering, Trondheim, Norway*
- D6.6** **Weibull analysis as a tool to describe DC breakdown performance and distribution in polyethylene for HVDC at laboratory scale**  
**CHARRIER** Dimitri, **GUFFOND** Raphael, **MAZEL** Christelle, **MERLE** Daphne, **ALLAIS** Arnaud; *Nexans Research Center, Lyon, France*

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## **E6 Technical challenges**

Topic 13: Technical Challenges encountered with CableSystems

Tuesday June 23<sup>d</sup>, 2015 - 14:30 - 16:00 - Room: E

Chairman: **Koo Ja-yoon; Hanyang University, Republic of Korea**

Rapporteur: **Tardy Kevin; RTE, France**

- E6.1** **Progress control in the context of the project management for the execution of a 320 kV HVDC land cable project - Dolwin 2**  
**EBERT** Sebastian, **BORN** Johann; *ABB AG, Mannheim, Baden Württemberg, Germany*
- E6.2** **Integration of an 88 km 220 kV AC cable into the Victorian electricity network in Australia**  
**MCMILLAN** Lee, **JANJIC** Miron; *Beca Pty Ltd., Melbourne, Victoria, Australia*  
**CHRISTMAS** Ian; *Beca Pty Ltd., Brisbane, Australia*
- E6.3** **HVDC & HVAC cable systems delivered on long length drums**  
**SANTANA** José, **MICHON** Franck, **MANSOUR** Jawdat; *Prysmian Group, Gron, France*  
**MIREBEAU** Pierre, **ADAM** Dominique; *Nexans, Calais, France*  
**MAMMERI** Mohamed, **DHUICQ** Bernard; *General Cable, Montereau-Fault-Yonne, France*  
**BAIL** Roland; *SYCABEL, Paris, France*  
**LESUR** Frédéric; *RTE, Paris, France*
- E6.4** **Cable quality assurance of offshore projects in the German North Sea**  
**ZHANG** Roland Dongping, **WERLE** Volker, **JUNG** Jochen; *TenneT TSO GmbH, Bayreuth, Germany*
- E6.5** **Cable constraints due to background harmonic amplifications**  
**FILLION** Yannick, **DESCHANVRES** Simon, **BOUDINET** Nathalie; *RTE, Paris, France*
- E6.6** **Watertight cable designs in hydropower generation plants**  
**SIVERTSVOLL** Børre Johansen, **RØNNINGEN** Terje; *Siemens AS, Trondheim, Norway*  
**FAREMO** Hallvard, **LERVIK** Jens Kristian; *SINTEF Energy Research, Trondheim, Norway*  
**HØNSI** Kåre, **WILNES** Rolf; *Statkraft Energi AS, Oslo, Norway*  
**HALVORSON** Hans Lavoll, **JACOBSEN** Ole Kristian; *BKK Nett AS, Bergen, Norway*

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## **F6.1 Materials, ageing**

Tuesday June 23<sup>d</sup>, 2015 - 14:30 - 16:00 - Room: F

Chairman: **Wald Detlef; Eifelkabel, Switzerland**

Rapporteur: **Charrier Dimitri; Nexans Research Center, France**

- F6.1.01** **A study on the chemical & structural changes of thermally aged XLPE cable insulation by FTIR and thermal analysis techniques**  
**NAGESHWAR RAO** Burjupati; *Central Power Research Institute, Bangalore, Karnataka, India*
- F6.1.02** **Development of a new liquid antioxidant for stabilizing XLPE compounds or for direct peroxide injection process**  
**LABBE** Denis; *École d'ingénieur de Genève, Geneva, Switzerland*  
**HILL** Jonathan, **TAN** Siren, **RIDER** Chris; *Addivant Tenax Road, Trafford Park, Manchester, UK*

- F6.1.05** *Ensuring future reliability using manufacturers' standards to assess cable system performance after installation*  
**HAFNER** Gerhard; Wiener Netze, Vienna, Austria  
**ZIEGLER** Steffen, **LANZ** Benjamin; IMCORP, Manchester, USA
- F6.1.06** *Suggestion of new factors for the PE-based MV cable diagnosis using VLF tan-delta*  
**KIM** Sung-min, **JEON** Si Sik, **KIM** Dongsu; Korea Electrical Corporation, Jeollanam-do, Republic of Korea
- F6.1.08** *Effect of carbon black selection on semiconductive compound water content and uptake behavior*  
**BONACCHI** Daniele, **VAN BELLINGEN** Christine; IMERYS Graphite and Carbon, Bodio, Switzerland  
**LABBÉ** Denis; P&M Cable Consulting LLC, Geneva, Switzerland

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## **F6.2** Diagnosis, maintenance, remaining life, economy

Tuesday June 23<sup>rd</sup>, 2015 - 14:30 - 16:00 - Room: F

Chairman: **Mayer Hans**; Consultant, Australia

Rapporteur: **Angoulevant Olivier**; Prysmian Câbles & Systèmes, France

- F6.2.01** *The experience in applying new recovery voltage parameters for the impregnated paper insulation cable condition diagnostics*  
**KONONENKO** Alexander, **HOHRYAKOV** Alexey; RISI, Lytkarino, Moscow region, Russia
- F6.2.02** *Failure experience of Medium Voltage cable heat shrink accessories in Saudi Arabian transmission network*  
**AL DHUWAIAN** Abdullah A.; Saudi Electricity Company, Buraydah, Qassim, Saudi Arabia
- F6.2.03** *On-line monitoring and relative trending of dielectric loss in cross-linked HV cable systems*  
**YANG** Yang, **DONALD** Hepburn, **CHENGKE** Zhou; Glasgow Caledonian University, Glasgow, UK  
**WENJUN** Zhou; Wuhan University, Wuhan, China  
**WEI** Jiang, **BIN** Yang; Wuhan Power Supply Company, Wuhan, China
- F6.2.05** *Solutions for thefts in overhead-underground transition towers in Red Eléctrica de España*  
**MARCELO** Alvaro, **GARCÍA FERNÁNDEZ** Rafael, **LÓPEZ-MENCHERO CÓRDOBA** Maria Dolores; Red Eléctrica de España, Alcobendas, Madrid, Spain
- F6.2.06** *PD testing and monitoring of HV cable systems*  
**KOLTUNOWICZ** Wojciech, **BADICU** Laurentiu-Viorel, **HUMMEL** Rene, **BRONIECKI** Ulrike, **GEBHARDT** Daniel; OMICRON Energy Solutions GmbH, Berlin, Germany
- F6.2.07** *Subsea and EHV cables require a challenging purity degree of XLPE-material*  
**PRUNK** Harry, **LIEDER** Holger; SIKORA AG, Bremen, Germany
- F6.2.08** *Optasense® distributed acousticsensing (DAS) systems for the power network*  
**SINGH** Kuljit; Optasense Ltd., Cody Technology Park, Ively Road, Farnborough, GU14 0LX, Hampshire, UK
- F6.2.09** *Decision making and forecasting using the data available to utilities - pitfalls, challenges, and case studies of ways forward*  
**WALD** Detlef; Eifelkabel, Villmergen, Switzerland  
**PERKEL** Josh, **HAMPTON** Nigel; NEETRAC, Atlanta, Georgia, USA
- F6.2.10** *Resilient 12 to 36 kV touch safe aerial network solution with a competitive total cost of ownership*  
**EFRAIMSSON** Lars, **HAGMAN** Ingvar, **ÅHMAN** Johan; nkt Cables AB, Falun, Sweden
- F6.2.11** *The introduction of PD detection with on-line PD diagnosis system in EHV underground power cable*  
**KIM** Jae-seung, **ROH** Tae-hyueng, **KIM** Dong Kyu, **KIM** Jin, **KIM** Youn Chan; KEPCO, Seoul, Republic of Korea



Tuesday June 23<sup>rd</sup>, 2015 - 16:30

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**A7 Testing & Qualification of HVDC cable systems**

Topic 9: HVDC Cable Systems

Tuesday June 23<sup>rd</sup>, 2015 - 16:30 - 18:00 - Room: A

Chairman: **Zaccone Ernesto; Prysmian Power Link Srl, Italy**

Rapporteur: **Boudinet Nathalie; RTE, France**

**A7.1 Qualification of an extruded HVDC cable system at 525 kV**

**GUSTAFSSON** Anders, **JEROENSE** Marc, **GHOORBANI** Hossein, **QUIST** Tobias, **SALTZER** Markus, **FARKAS** Andreas; *ABB AB, High Voltage Cables, Karlskrona, Sweden*

**AXELSSON** Fredrik, **MONDIET** Vincent; *ABB AB, Kabeldon, Alingsås, Sweden*

**A7.2 The space charge characteristic in DC-XLPE cable after 400 kV PQ test**

**KATAYAMA** Tomohiko, **YAMAZAKI** Takanori, **MURATA** Yoshinao, **MASHIO** Shoji, **IGI** Tsuyoshi; *J-Power Systems Corporation, Hitachi-shi, Ibaraki-ken, Japan*

**HOZUMI** Naohiro, **HORI** Masahiko; *Toyohashi University of Technology, Toyohashi-shi, aichi-ken, Japan*

**A7.3 Development and high temperature qualification of innovative 320 kV DC cable with superiorly stable insulation system**

**ALBERTINI** Marco, **BAREGGI** Alberto, **CAIMI** Luigi, **DE RAI** Luca, **FRANCHI BONONI** Stefano, **POZZATI** Giovanni; *Prysmian SpA, Milan, Italy*

**BOFFI** Paolo; *Prysmian Cavi e Sistemi SRL, Milan, Italy*

**A7.4 Lightning impulse test requirement for HVDC transmission systems**

**JANSSON** Henrik, **WORZYK** Thomas; *ABB AB, Karlskrona, Sweden*

**A7.5 Space charge evolution in composite XLPE HVDC cable insulation during VSC pre-qualification programme**

**TZIMAS** Antonios, **LUCAS** Guillaume, **DYKE** Kevin, **PERROT** Fabrice; *Alstom Grid, Stafford, UK*

**YAGI** Yukihiko, **TANAKA** Hideo; *VISCAS Corporation, Ichihara, Chiba, Japan*

**DODD** Stephen; *University of Leicester, Leicester, UK*

**A7.6 Cigre WG B1.42: Recommendations for testing DC transition joints for power transmission at a rated voltage up to 500 kV**

**ARGAUT** Pierre; *CIGRE SC B1, Paris, France*

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**B7 New materials**

Topic 1: Materials, New Materials and Ageing Assessment in AC and DC

Tuesday June 23<sup>rd</sup>, 2015 - 16:30 - 18:00 - Room: B

Chairman: **Hjertberg Thomas; Borealis AB, Sweden**

Rapporteur: **Frelin Wilfried; EDF R&D, France**

**B7.1 High performance thermoplastic cable insulation systems for flexible network operation**

**VAUGHAN** Alun, **HOSIER** Ian; *University of Southampton, Southampton, UK*

**STEVENS** Gary C, **PYE** Amy, **THOMAS** Janet, **SUTTON** Simon; *Gnosys Global Ltd., Surrey, UK*

**GEUSSENS** Theo; *Dow Europe GmbH, Horgen, Zurich, Switzerland*

**B7.2 Recent developments in cure control for crosslinkable polyethylene (XLPE) power cable insulation**

**PERSON** Timothy, **COGEN** Jeffrey; *The Dow Chemical Company, Collegeville, Pennsylvania, USA*

**SUN** Yabin; *Dow Chemical (China) Investment Co. Ltd., Shanghai, China*

**B7.3 Self healing high voltage electrical insulation materials**

**LESAIN** Cedric, **HESTAD** Øystein L., **HVIDSTEN** Sverre; *SINTEF Energy Research, Trondheim, Norway*

**GLOMM** Wilhelm; *SINTEF Materials and Chemistry, Trondheim, Norway*

- B7.4** **The characteristics of recyclable thermo-plastic based on polyethylene blends for extruded cables**  
**LI** Lunzhi, **ZHONG** Lisheng, **ZHANG** Kai, **CHEN** Guanghui; State Key Laboratory of Electrical Insulation and Power Equipment, Xi'an Jiaotong University, Xi'an, China  
**HOU** Shuai, **FU** Mingli; Electric Power Research Institute of China Southern Power Grid, Guangzhou, Guangdong, China
- B7.5** **Validation of power cable material technology with reduced degassing burden**  
**SUN** Yabin; Dow Chemical (China) Investment Co. Ltd., Shanghai, China  
**PERSON** Timothy; The Dow Chemical Company, Collegetown, Pennsylvania, USA
- B7.6** **Development of a XLPE insulating with low peroxide by-products**  
**MAMMERI** Mohamed, **DENIZET** Isabelle, **GARD** Jean-Christophe; General Cable, Montereau-Fault-Yonne, France

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## **C7 Cables and systems, modelling and assessment**

Topic 5: Diagnosis, Maintenance, Remaining Life Estimation and Management

Tuesday June 23<sup>rd</sup>, 2015 - 16:30 - 18:00 - Room: C

Chairman: **Mosier Rachel; Power Delivery Consultants, USA**

Rapporteur: **Charmetant Adrien; Nexans, France**

- C7.2** **Validation of a generic tool of kinetic simulation of cable ageing**  
**BEN HASSINE** Mouna, **MAURIN** Romain, **MARQUE** Grégory; EDF R&D, Moret-sur-Loing, France
- C7.3** **Identification of cable local thermal stress with time domain reflectometry**  
**ESPILIT** Thierry; EDF R&D, Ecuelles, France  
**FRANÇOIS** Sandrine; EDF SEPTEN, Lyon, France  
**FAGEON** Jean-Marie; EDF DPN, Paris, France
- C7.4** **Implementation of new non-destructive diagnostic system for high temperature superconducting cable via time-frequency domain reflectometry**  
**LEE** Geon Seok, **KWON** Gu Young, **CHANG** Seung-jin, **LEE** Chun-kwon, **HAN** Yee-jin, **BANG** Su Sik, **LEE** Yeong Ho, **PARK** Jin Bae, **SHIN** Yong-june; Yonsei University, Seoul, Republic of Korea  
**PARK** Kijun, **SOHN** Songho; Korean Electric Power Corporation Research Institute, Seoul, Republic of Korea
- C7.5** **Maintenance decision models for Java-Bali 150 kV power transmission submarine cable using rams**  
**SILALAH** Zivion, **NUGRAHA** Herry; PLN Indonesia, Jakarta, Indonesia  
**SINISUKA** Ngapuli; ITB, School of Electrical Engineering and Informatics, Bandung, Indonesia
- C7.6** **Research on error control of optimal computation combining temperature field with ampacity of cables under complicated conditions**  
**SHAN** Jiang; Wuhan Talentum Electric Power CO., TLD, Wuhan, China  
**LI** Yin, **ZHU** Xueliang, **ZHAI** Guangxin, **WANG** Wei; State Grid Electric Power Research Institute, Wuhan, China

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## **D7 Specific testing trends 2**

Topic 3: Testing Methods: Electrical and Not Electrical

Tuesday June 23<sup>rd</sup>, 2015 - 16:30 - 18:00 - Room: D

Chairman: **Zenger Walter; USI, USA**

Rapporteur: **Paupardin Marie-Laure; General Cable, France**

- D7.1** **Type testing of 150 kV - 161 kV cable system combining AEIC, ICEA and IEC test protocols**  
**JOVANOVIĆ** Ivan; G&W Electric Company, Bolingbrook, IL, USA  
**GEORGALLIS** George, **CONSTANTINO** Constantinos; Hellenic Cables SA, Marousi, Greece  
**WU** Grand; G&W Electric Company, Shanghai, China
- D7.2** **Suitability of test voltages applied to high and extra-high voltage extruded cables for quality acceptance during commissioning and for condition assessment during operation**  
**MÄTZOLD** Stefan, **HAUSCHILD** Wolfgang, **HENSEL** Michael; HIGHVOLT Prüftechnik Dresden GmbH, Dresden, Saxony, Germany

- D7.3** **New qualification tests for high loaded MV joints**  
**HENNUY** Blandine; *Laborelec, Linkebeek, Belgium*  
**STEENNIS** Fred, **VAN MAANEN** Bernd; *DNV GL, Arnhem, The Netherlands*  
**DE RIDDER** Eddy, **STUL** Simon; *Nexans Network Solutions, Erembodegem, Belgium*  
**AERNS** Ben; *Alliander, Arnhem, The Netherlands*  
**BOKMA** Leon; *Westland Infra, Poeldijk, The Netherlands*  
**BUYS** Pieter; *Stedin BV, Rotterdam, The Netherlands*  
**COLIN** Philippe; *ORES, Louvain-La-Neuve, Belgium*  
**MEIER** Ralf; *3M, Neuss, Germany*  
**OOSTERLEE** Piet; *Delta Netwerkbedrijf, Goes, The Netherlands*  
**SEURINCKX** Kenny; *Eandis, Melle, Belgium*  
**SOEPBOER** Piet; *Enexis, Den Bosch, The Netherlands*  
**TANZEGHTI** Houssam; *EDF, Paris, France*  
**VAN DEN BERG** Marcel; *Sibelga, Brussels, Belgium*
- D7.4** **Restoring lead alloy solder on cable joint for fluid filled low pressure 145 kV with increasing pressure class**  
**ALMEIDA** Geraldo; *Techsys Cables, Santo André - SP, Brazil*  
**SOUZA** Paulo; *AES ELETROPAULO, São Paulo - SP, Brazil*  
**BARIONI** Carlos; *Daimom Engenharia, São Paulo - SP, Brazil*  
**PINHEIRO** Walter; *Walter Pinheiro, São Paulo - SP, Brazil*
- D7.5** **Bending stiffness of submarine cables**  
**MAIOLI** Paolo; *Prysmian SpA, Milan, Italy*
- D7.6** **Improved method of determining bending stiffness of underground cables**  
**TARNOWSKI** Janislaw; *Hydro-Québec (IREQ), Varennes, Québec, Canada*

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## **E7** **Material related special features**

Topic 2: Cables and Accessories, Design - Modelling

Tuesday June 23<sup>rd</sup>, 2015 - 16:30 - 18:00 - Room: E

Chairman: **Leeburn Kieron**; *CBI Electric, African Cables Ltd, South Africa*

Rapporteur: **Michon Franck**; *Prysmian Câbles & Systèmes, France*

- E7.1** **The need to update / upgrade test procedures for connectors used in MV underground joints**  
**FAIRLEY** Barry, **HAMPTON** Nigel, **PARKER** Thomas; *NEETRAC, Atlanta, Georgia, USA*
- E7.2** **Influence of expansion on electric field distribution of stress cones for high voltage cable accessories**  
**ZIERHUT** Stefan; *STRESCON GmbH, Esslingen a. N., Germany*
- E7.3** **Current rating of power cables with temperature limit imposed on backfill/duct bank boundary**  
**FARAHANI** Alireza, **GAROUX** Laure, **KAMARA** Wouleye; *CYME Int/Eaton Corp., Montréal, Québec, Canada*  
**ANDERS** George; *Lodz University of Technology, Lodz, Poland*
- E7.4** **The 110 kV cable thermal field analysis based on the thermal path model and simulation calculation**  
**ZHAO** Miao, **YU** Qinxue, **ZHONG** Lisheng; *State Key Laboratory of electrical insulation and power equipment, Xi'an Jiaotong University, Xi'an, China*  
**HOU** Shuai, **FU** Mingli; *Electric Power Research Institute of China Southern Power Grid, Guangzhou, Guangdong, China*
- E7.5** **Improvements on dry type design for GIS and transformer termination up to 300 kV, by means of adjustable compression force**  
**SEKULA** Oldrich, **SUN** Guoyan; *Brugg Kabel AG, Brugg, Aargau, Switzerland*
- E7.6** **Effect of impurities on electric field distribution in HV XLPE insulation**  
**MONAJED** Omar; *Liban Cables - Nexans, Beirut, Lebanon*

Wednesday June 24<sup>th</sup>, 2015 - 09:00

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## **A8 Testing of HVDC systems**

Topic 9: HVDC Cable Systems

Wednesday June 24<sup>th</sup>, 2015 - 09:00 - 10:30 - Room: A

Chairman: **Steennis Fred; DNV GL - Energy, The Netherlands**

Rapporteur: **Hondâa Pierre; RTE, France**

### **A8.1 Space charge evolution in XLPE HVDC cable with thermal-step-method and pulse-electro-acoustic**

**TZIMAS** Antonios, **LUCAS** Guillaume, **DYKE** Kevin, **PERROT** Fabrice; Alstom Grid, Stafford, UK

**BOYER** Ludovic, **MIREBEAU** Pierre; Nexans, Calais, France

**DODD** Stephen; University of Leicester, Leicester, UK

**CASTELLON** Jérôme, **NOTINGHER** Petru; Université Montpellier, Montpellier, France

### **A8.2 Development of an industrial space charge measurement facility for extruded HVDC full scale cables**

**BOYER** Ludovic, **MIREBEAU** Pierre; Nexans France, Calais, France

**PLOPEANU** Mihai; Ofrim Group, Bucharest, Romania

**CASTELLON** Jérôme, **NOTINGHER** Petru, **AGNEL** Serge; Institut d'Electronique du Sud - Université Montpellier 2, Montpellier, France

**JOSSIEN** Dominique, **DEPUIDT** Yves; Enitram, Dunkerque, France

### **A8.3 Partial discharge testing of XLPE cables for HVDC: Challenges and opportunities**

**CAVALLINI** Andrea, **MONTANARI** Gian-Carlo; DEI - University of Bologna, Bologna, Italy

**BOYER** Ludovic, **LUTON** Marie-Hélène, **MIREBEAU** Pierre; Nexans France, Calais, France

### **A8.4 Laboratory and field partial discharge measurement in HVDC power cables**

**SELTZER-GRANT** Malcolm; HVPD Ltd., Manchester, UK

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## **B8 Material for accessories and sheathing**

Topic 1: Materials, New Materials and Ageing Assessment in AC and DC

Wednesday June 24<sup>th</sup>, 2015 - 09:00 - 10:30 - Room: B

Chairman: **Bhattacharyya Rohini; Ducab, United Arab Emirates**

Rapporteur: **Ait Amar Abdellatif; Nexans, France**

### **B8.1 Lifetime prediction of an external protection of cold-shrinkable joint in EPDM rubber subjected to thermal ageing**

**BEN HASSINE** Mouna, **TOURCHER** Christophe, **MARQUE** Grégory; EDF R&D, Moret-sur-Loing, France

**NAÏT-ABDELAZIZ** Moussa, **ZAÏRI** Fahmi; Laboratoire de Mécanique de Lille, Villeneuve d'Ascq, France

**COLLIN** Xavier; Laboratoire des Procédés et Ingénierie en Mécanique et Matériaux, Paris, France

### **B8.2 Fracture behavior and thermo-oxidative ageing of EPDM**

**KARTOUT** Christopher, **CRISTIANO-TASSI** Antonella, **MARQUE** Grégory; EDF R&D, Moret-sur-Loing, France

**CRETON** Costantino; SIMM - ESPCI, Paris, France

### **B8.3 Temperature and electric field dependence of XLPE MV cable joint stress control sleeves**

**ENOKSEN** Henrik, **HVIDSTEN** Sverre; SINTEF Energy Research, Trondheim, Norway

**SANDEN** Mai-Linn, **MAUSETH** Frank; Norwegian University of Science and Technology, Dept. of Electric Power Engineering, Trondheim, Norway

### **B8.5 Self-healing cable sheaths in extruded polymeric power cables**

**RHODES** Rhys, **GERMAN** Ian, **STEVENS** Gary C; Gnosys Global Ltd., Guildford, Surrey, UK

### **B8.6 Designing a new inline insulated piercing trough connector for conductor cross-sections 1.5 to 25 mm<sup>2</sup>**

**SOEPBOER** Piet, **LEPPINK** Sebastian, **BROERSMA** Tjeerd; Enexis, 's-Hertogenbosch, The Netherlands

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## **C8 Improvement of cable ratings**

Topic 5: Diagnosis, Maintenance, Remaining Life Estimation and Management

Wednesday June 24<sup>th</sup>, 2015 - 09:00 - 10:30 - Room: C

Chairman: **Krähenbühl Francis; Nexans Suisse SA, Switzerland**

Rapporteur: **Bellot Frédéric; General Cable, France**

### **C8.i Invited Lecture: "Smart Grids and insulated power cables"**

**MALLET Pierre**; Director for R&D and Innovation in ERDF, France

### **C8.1 Ampacity and other design considerations for Medium Voltage cables used in renewable energy applications**

**BASCOM III Earle C. (Rusty)**; Electrical Consulting Engineers, P.C., Schenectady, New York, USA

**ALLEN JR Richard W.**; Consultant, Northboro, Massachusetts, USA

### **C8.2 Enhanced medium voltage cable ratings by improving cable trench design and thermal conditions**

**MEIJER Sander, DE WILD Frank**; DNV GL, Arnhem, The Netherlands

**AL AGHBARI Abdulla, AL NEAIMI Maryam, ASHAAR Muhannad, ALABBADI Mohd**; DEWA, Dubai, United Arab Emirates

### **C8.3 Lifetime extension of medium voltage cables**

**WOSCHITZ Rudolf, PIRKER Alex**; Graz University of Technology, Graz, Austria

**STEURER Herbert**; Netz Burgenland Strom GmbH, Eisenstadt, Austria

**HESSE Martin**; UtilX Europe GmbH, Bückeberg, Germany

### **C8.4 Development of the super-capacity insulated wire cable for distribution line**

**LEE Kyongtae**; ILJIN Electric, Kyunggi-Do, Hwasung-Si/Annyoung-Dong, Republic of Korea

**LEE Moonseok**; SK Chemical, Daejeon-si, Republic of Korea

**LEE Mincheol**; KEPCO, Kwang-ju, Republic of Korea

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## **D8 Testing evaluations**

Topic 3: Testing Methods: Electrical and Not Electrical

Wednesday June 24<sup>th</sup>, 2015 - 09:00 - 10:30 - Room: D

Chairman: **Gulski Edward; onsite hv solutions ag, Switzerland**

Rapporteur: **Guillemin Martial; RTE, France**

### **D8.1 System impedances for power cable umbilicals**

**SOLHEIM Kristian Thinn, LERVIK Jens Kristian**; SINTEF Energy Research, Trondheim, Norway

### **D8.2 High voltage XLPE cable partial discharge localization technology based on high frequency signal transmission**

**BINWU Wang, XUELIANG Zhu, GUANGXIN Zhai**; Wuhan Talentum Electric Power CO., TLD, Wuhan, Hubei, China

**WEI Wang**; State Grid Electric Power Research Institute, Wuhan, Hubei, China

### **D8.3 ICEA standard S-97-682-97 hyperbaric accelerated water treeing test (AWTT) performed at 250 and 310 bar**

**SMITH III John T.**; General Cable Corporation, Scottsville, Texas, USA

**ISUS Daniel**; General Cable Corporation, Manlleu, Catalunya, Spain

**ALFORD Michael D., HAJIAGHAJANI Masoud**; Chevron Energy Technology Company, Houston, Texas, USA

**WHIDDON John T.**; Aker Solutions - Umbilicals NA, Mobile, Alabama, USA

### **D8.4 Performing type tests for the qualification of three-core submarine cables and accessories for connections of offshore wind farms**

**JEGUST Detlef**; IPH GmbH Berlin, Berlin, Germany

### **D8.5 Research and experiments of electromagnetic wave transmission rate in different kinds of cable**

**BINWU Wang, XUELIANG Zhu, GUANGXIN Zhai**; Wuhan Talentum Electric Power CO., TLD, Wuhan, Hubei, China

**WEI Wang**; State Grid Electric Power Research Institute, Wuhan, Hubei, China

**D8.6 Measurement of the AC resistance of small cross section power cables**

**WU** Wei Ning, **ZHU** Shi Jing, **LUO** Jian Bo, **CHEN** Xiong, **SONG** Chang Po, **QU** Xiao Lei; State Grid Electric Power Research Institute, Nan Jing, Jiang Su Province, China  
**WANG** Ying; Prysmian Group, Milan, Italy

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**E8 New cable and accessories monitoring applications**

Topic 7: LV and MV Cable Systems

Wednesday June 24<sup>th</sup>, 2015 - 09:00 - 10:30 - Room: E

Chairman: **Sytnikov Victor**; R&D Center @FGC UES, Russia

Rapporteur: **Lencot Gérard**; Prysmian Câbles & Systèmes, France

**E8.2 Toward acoustic detection of partial discharges in high voltage cables**

**CZASZEJKO** Tadeusz, **STEPHENS** Jarman; Monash University, Melbourne, Victoria, Australia

**E8.3 Development of advanced partial discharge measurement for XLPE cable system**

**TAKAHASHI** Toshihiro, **NOZAWA** Yusuke, **OKAMOTO** Tatsuki; Central Research Institute of Electric Power Industry (CRIEPI), Yokosuka, Japan

**E8.4 On-line partial discharge screening of MV and HV cables: feasibility and potential**

**MONTANARI** Gian-Carlo; University of Bologna, Bologna, Italy

**HEBERER** Stephan, **SCERBO** Luigi; Techimp, Bologna, Italy

**E8.5 Ultrasonic extrusion quality monitoring of multilayer HV cables during production**

**HUMPHREYS-JONES** Gareth; Acuity Products Limited, St. Asaph, UK

**E8.6 Laboratory investigation of a service aged HV cable termination**

**TAMUS** Zoltán Ádám, **CSÁNYI** Gergely Márk; Budapest University of Technology and Economics, Budapest, Hungary

Wednesday June 24<sup>th</sup>, 2015 - 11:00

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## A9 Materials and space charges

Topic 9: HVDC Cable Systems

Wednesday June 24<sup>th</sup>, 2015 - 11:00 - 12:30 - Room: A

Chairman: **Marzinotto Massimo; Terna S.p.A., Italy**

Rapporteur: **Eyssautier Quentin; Nexans, France**

### A9.1 **Observation of space charge accumulation in cable insulating materials at voltage polarity reversal**

**TANAKA** Yasuhiro, **KODERA** Ryota, **KATO** Tsuyoshi, **MIYAKE** Hiroaki; Tokyo City University, Tokyo, Japan

**MORI** Hiroki, **YAGI** Yukihiro; VISCAS Corporation, Ichihara, Chiba, Japan

### A9.2 **Space charge distribution in XLPE plates with non-uniform conductivity**

**OLSSON** Carl-Olof, **KÄLLSTRAND** Birgitta, **LUNDMARK** Maria, **JOHANSSON** Kenneth, **ARNSTEN** Sara, **MA** Bin; ABB AB, Corporate Research, Västerås, Sweden

**SALTZER** Markus, **JEROENSE** Marc; ABB AB, High Voltage Cables, Karlskrona, Sweden

### A9.3 **Behaviors of water tree propagation after accelerated aging under different polarity DC voltages**

**ZHOU** Kai, **LI** Tianhua, **YANG** Mingliang, **HUANG** Ming, **LI** Kangle; School of Electrical Engineering and Information, Sichuan University, Chengdu, Sichuan, China

### A9.4 **Development of XLPE Nano-Composite used for HVDC $\pm 250$ kV Cable System Applicable to LCC and VSC**

**NAM** Jin-ho, **PARK** Wan-ki; LS Cable & System, Gyeonggi, Republic of Korea

**JEON** Seung-ik; LS Cable & System, Gyeongbuk, Republic of Korea

**LEE** In-ho; LS Cable & System, Gangwon, Republic of Korea

**HWANGBO** Seung; Honam University, Gwangju, Republic of Korea

**KIM** Jeong-tae; Daejin University, Gyeonggi, Republic of Korea

**LEE** June-ho; Hoseo University, Chungnam, Republic of Korea

**KOO** Ja-yoon; Hanyang University, Gyeonggi, Republic of Korea

### A9.5 **Research and development of $\pm 320$ kV flexible HVDC power cable**

**HU** Ming; Zhongtian Technology Submarine Cable Co., Ltd., Nantong, China

**XIE** Shuhong, **WU** Xiaowei; Zhongtian Technology Group Co., Ltd., Nantong, China

### A9.6 **Triple jumps of XLPE insulated HVDC cable development in China: From 160 kV, 200 kV to 320 kV**

**XIE** Shuhong; Zhongtian Technology Group Co., Ltd., Nantong, China

**FU** Mingli; China South Power Grid International Co., Ltd., Guangzhou, Guangdong, China

**YIN** Yi; Shanghai Jiao Tong University, Shanghai, China

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## B9 Material performances

Topic 1: Materials, New Materials and Ageing Assessment in AC and DC

Wednesday June 24<sup>th</sup>, 2015 - 11:00 - 12:30 - Room: B

Chairman: **Maioli Paolo; Prysmian SpA, Italy**

Rapporteur: **Notinger Petru; Institut d'Électronique du Sud - Université Montpellier 2, CNRS, France**

### B9.1 **High quality carbon black to surpass traditional solution for HV semiconductors?**

**BONACCHI** Daniele, **VAN BELLINGEN** Christine; IMERYS Graphite and Carbon, Bodio, Switzerland

**LABBÉ** Denis; P&M Cable Consulting LLC, Geneva, Switzerland

### B9.3 **Non-contact surface metrology of degraded conductor screens in XLPE cables**

**HOELTO** Jorunn, **BAKKEN** Kristine, **HVIDSTEN** Sverre; SINTEF Energy REsearch, Trondheim, Norway

### B9.4 **Remnant static mechanical stresses and water tree ageing of XLPE power cables**

**ILDSTAD** Erling, **GROV-PLASSEN** Kurt Albert; Norwegian University of Science and Technology, Trondheim, Norway

FAREMO Hallvard; SINTEF Energy Research, Trondheim, Norway

- B9.5 **Evaluation of degradation of PVC by dielectric spectroscopy, and SEM and FTIR analyzes**  
HANDALA Mohand Amokrane, ZBOUDJ Farida; University Mouloud Mammeri, Tizi-Ouzou, Algeria  
BELHITECHE El Hadi; Université Med Boudiaf, M'sila, Algeria
- B9.6 **The influence of operating conditions of cable lines in grids on selected properties of extruded cable insulation**  
ZAWODNIAK Jozef Jacek; ENEA Operator S.A., Poznan, Poland  
RAKOWSKA Aleksandra; Poznan University of Technology, Poznan, Poland

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## C9 Special Cables - Avionics

Topic 12: Industrial and Special Cables

Wednesday June 24<sup>th</sup>, 2015 - 11:00 - 12:30 - Room: C

Chairman: **Schutten Jan; Prysmian Group, The Netherlands**

Rapporteur: **Jeanguillaume Alain; Draka Fileca, France**

- C9.i **Invited Lecture: "Impact of the new electrical architecture of aircraft on insulated power cables"**  
ROQUES Serge; Emeritus Expert in SAFRAN Group, France
- C9.2 **Validating Reliability Improvements of New Cable Designs – A Case Study of 600 V Self Sealing Cables**  
FLETCHER Chris; Duke Energy, Charlotte, NC, USA  
MCAULIFFE Joe; Southwire, Carrollton, USA  
PERKEL Josh; NEETRAC, Atlanta, Georgia, USA
- C9.3 **Low bending radius aerospace power feeder cables for reliable electrical architectures of more electrical aircrafts**  
DAUMAND Thierry, LECLUSE Wilfried, PINTO Olivier, RYBSKI Patrick; Nexans, Draveil, France

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## D9 Environment and sustainability 1

Topic 4: Cables, Environment and Sustainable Development

Wednesday June 24<sup>th</sup>, 2015 - 11:00 - 12:30 - Room: D

Chairman: **Zhong Lisheng; State Key Laboratory of electrical insulation and power equipment, Xi'an Jiaotong University, China**

Rapporteur: **Moindrot Vincent; RTE, France**

- D9.1 **Feedback on the management of transmission lines magnetic fields in France**  
CABAU Matthieu, LESUR Frédéric, DESCHAMPS Francois; RTE, Paris, France
- D9.2 **Failures in underground power cables - return of experience**  
VAN MAANEN Bernd, PLET Cornelis, VAN DER WIELEN Peter, MEIJER Sander, DE WILD Frank, STEENNIS Fred; DNV GL, Arnhem, The Netherlands
- D9.4 **Choice of electrically conductive plate for shielding the magnetic field from underground high voltage cables**  
SUN Guoyan, RIESINGER Jens, SEKULA Oldrich, CORSARO Pietro; Brugg Kabel AG, Brugg, Aargau, Switzerland
- D9.5 **Heat dissipation of high voltage cable systems - a technical and agricultural study**  
BRÜGGMANN Jan, JUNGnitz Ludger, UTHER Dirk; Amprion GmbH, Dortmund, Germany  
TRÜBY Peter; Albert Ludwigs University, Freiburg, Germany
- D9.6 **Thermal ratings of submarine HV cables informed by environmental considerations**  
HUGHES Tim, HENSTOCK Tim, PILGRIM James A., DIX Justin, GERON Tom, THOMPSON Charlie; University of Southampton, Hants, UK

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## E9 Design of LV MV cable systems



Topic 7: LV and MV Cable Systems

Wednesday June 24<sup>th</sup>, 2015 - 11:00 - 12:30 - Room: E

Chairman: **Falconer Antony; Aberdare Cables, South Africa**

Rapporteur: **Bénard Laurent; Prysmian Câbles & Systèmes, France**

- E9.1 Copper-clad aluminum as an alternative to copper flexible conductors for electric power cables: opportunities and challenges**  
**BAREGGI** Alberto, **CASIRAGHI** Flavio, **DE RAI** Luca, **MARTELLI** Davide; Prysmian SpA, Milan, Italy  
**MAZZUCATO** Alessandro; Prysmian Cavi e Sistemi Italia SRL, Milan, Italy  
**PERUZZOTTI** Franco, **PEZZONI** Antonio; Dynext SRL, Legnano, Milan, Italy  
**ANELLI** Pietro; G.B. Studio, Milan, Italy  
**FOX** Dustin, **YANCE** Syarif; Copperweld, Nashville, Tennessee, USA
- E9.2 Connection to MV cable longitudinal aluminium screen**  
**TOURCHER** Christophe; EDF R&D, Moret-sur-Loing, France  
**SIMEON** Eric; SYCABEL, Paris, France  
**TAMBRUN** Roger; ERDF, Paris La Défense, France
- E9.3 Comparative study of circuit integrity cable designs and materials for Australian/New Zealand market**  
**IVANOV** Ivan, **ALEXANDER** Graeme; Nexans Olex, Melbourne, Victoria, Australia
- E9.5 Mechanical connectors used inside MV accessories: A system approach**  
**QUAGGIA** Dario, **TOGNALI** Stéphane; Prysmian Group, Milan, Italy  
**LENCOT** Gérard; Prysmian Group, Marne la Vallée, France
- E9.6 Catalyst alternatives to replace DBTDL to crosslink silane grafted polyethylene**  
**LEVIGOUREUX** Sophie, **GARCIA** Pedro, **FICQUENET** Marjorie, **DENIZET** Isabelle; General Cable, Montereau-Fault-Yonne, France

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**F9.1 LV, MV, HV, EHV and future cables**

Wednesday June 24<sup>th</sup>, 2015 - 11:00 - 12:30 - Room: F

Chairman: **Jeon Seung-ik; LS Cable & System, Republic of Korea**

Rapporteur: **Boyer Ludovic; Nexans, France**

- F9.1.01 Cables with smooth welded aluminum sheath**  
**JEOUNG** Bumyong, **KIM** Jinwoo, **MUN** Byeongcheol, **KIM** Daeyoen, **KIM** Youngjun, **LEE** Kyongtae, **KIM** Jungsik; ILJIN Electric, Hwasung-Si, Kyunggi-Do, Republic of Korea
- F9.1.02 Expanding the performance potential of the universal cable system by the use of DOW endurance™ HFDC-4202 EC water tree retardant crosslinked polyethylene insulation**  
**BRIGANDI** Paul; Dow Electrical & Telecommunications USA, Collegeville, Pennsylvania, USA  
**ANDERSSON** Christian, **BRINGSSELL** Håkan; nkt Cables AB, Falun, Sweden  
**CREE** Stephen; Dow Electrical & Telecommunications Europe, Horgen, Zurich, Switzerland
- F9.1.03 Effect of the fault impedance on the performance of directional over current relays in medium voltage power cables- a case study**  
**AMIN** Ahmed; Dar Engineering, Cairo, Egypt
- F9.1.04 Investigation of temperature dependence of DC diagnostic tests on LV PVC insulated cables**  
**TAMUS** Zoltán Ádám, **CSÁNYI** Gergely Márk, **TOMON** Gergely; Budapest University of Technology and Economics, Budapest, Hungary
- F9.1.06 The completion of 275 kV Suruga-Higashishimizu line**  
**OGAWA** Tomoya; Chubu Electric Power Co., Inc, Nagoya, Japan
- F9.1.08 Effect of water filled voids on the thermo-electrical behaviour of XLPE insulated cables using FEA method**  
**MECHERI** Yacine, **BOUAZABIA** Slimane, **BOUHADDICHE** Rafik; Université des Sciences et de la Technologie USTHB, Bab-Ezzouar, Algiers, Algeria

- F9.1.09** *Hybrid energy transfer lines with liquid hydrogen and superconducting cable - prototypes of future high power lines*  
**VYSOTSKY** Vitaly, **FETISOV** Sergey; Russian Scientific R&D Cable Institute, Moscow, Russia
- F9.1.10** *Syntactic foam as an alternative electrical insulation material for superconducting cable systems*  
**WINKEL** Daniel, **PUFFER** Ralf, **SCHNETTLER** Armin; RWTH Aachen University, Aachen, Germany
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## **F9.2 Cables and accessories design-Modelling**

Wednesday June 24<sup>th</sup>, 2015 - 11:00 - 12:30 - Room: F

Chairman: **Chang Michael**; Nexans, China

Rapporteur: **Peltron Guillaume**; ERDF, France

- F9.2.02** *Electric field distribution in polyethylene insulation used in the electric cables affected by water trees in the presence of space charges*  
**MEZIANI** Madjid, **ABDELOUAHAB** Mekhaldi, **TEGUAR** Madjid; Ecole Nationale Polytechnique d'Alger, Laboratoire de Recherche en Electrotechnique, El-Harrach, Alger, Algeria  
**MECHERI** Yacine; Université des Sciences et de la Technologie (USTHB), Laboratoire des Systèmes Electriques et Industriels (LSEI), Alger, Algeria
- F9.2.04** *Transient analysis of 3-core SL-type submarine cables with jacket around each core*  
**ANDERS** George; Lodz University of Technology, Lodz, Poland  
**GEORGALLIS** George; Hellenic Cables, Athens, Greece
- F9.2.05** *Cable joint to FFLP cable for provisional repair with quick installation*  
**ALMEIDA** Geraldo; Techsys Cables, Santo André - SP, Brazil  
**VASCONCELLOS** Gil; Matrixenergia, São Paulo - SP, Brazil  
**TALHOFFER** Fellipe; LIGHT SA, Rio de Janeiro, RJ, Brazil
- F9.2.06** *Design and analysis of high current heat cycles test set for underground cable*  
**PHAYOMHOM** Att; Metropolitan Electricity Authority, Bangkok, Thailand
- F9.2.09** *Replacement of porcelain bushings with polymeric bushings in HV underground XLPE cable termination box*  
**KIM** Jae-seung, **ROH** Tae-hyueng, **KIM** Dong Hyu, **KIM** Jin, **KIM** Youn Chan; KEPCO, Seoul, Republic of Korea
- F9.2.10** *Computationally light two-zone moisture migration modelling for underground cables - critical temperature vs. Critical heat flux*  
**MILLAR** Robert John, **DEGEFA** Merkebu, **LEHTONEN** Matti; Aalto University, Espoo, Finland
- F9.2.11** *A novel lumped I-C ladder method for computing switching overvoltages in EHV long shunt-compensated cables*  
**BENATO** Roberto, **DAMBONE SESSA** Sebastian; University of Padova-Department of Industrial Engineering, Padova, Italy  
**PIETRIBIASI** Davide; Prysmian Power Link, Milan, Italy
- F9.2.12** *Development of a 500 kV PPLP MI cable system for HVDC applications*  
**JUNG** Eui-hwan, **KIM** Sung-yun, **CHAE** Byung-ha, **YOON** Hyun-sung, **KANG** Chae-hong, **LEE** Su-kil, **JEON** Seung-ik; LS Cable & System, Gu-mi, Gyeongbuk, Republic of Korea

Wednesday June 24<sup>th</sup>, 2015 - 14:30

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## **A10 HVDC transient phenomena**

Topic 9: HVDC Cable Systems

Wednesday June 24<sup>th</sup>, 2015 - 14:30 - 16:00 - Room: A

Chairman: **Testa Luigi; Prysmian Cables and Systems, Spain**

Rapporteur: **Luton Marie-Hélène; Nexans France, France**

### **A10.1 The study on the transient electric field distribution of HVDC cable**

**LI** Zhonghua, **LIU** Lele, **GUO** Wenmin, **CHEN** Yu; Harbin University of Science and Technology, Harbin, China

### **A10.2 Modeling of DC cables for transient studies**

**NGUYEN TUAN** Minh; EDF R&D, Moret-sur-Loing, France

**XEMARD** Alain; EDF R&D, Clamart, France

**WOLFF** Quentin; EDF CIST, Saint-Denis, France

### **A10.3 Transient thermal phenomenon in HVDC extruded cables under test and operating condition – numerical simulation and measurements**

**LUTON** Marie-Hélène; Nexans France, Calais, France

**FROHNE** Christian; Nexans Germany, Hannover, Germany

**KARLSTRAND** Johan; JK Cablegrid Consulting AB, Karlskrona, Sweden

### **A10.4 Transients on DC cables connected to VSC converters**

**DENNETIERE** Sebastien, **SAAD** Hani, **HONDAA** Pierre, **NAUD** Antoine; RTE, Paris La Défense, France

### **A10.5 Transient space charge phenomena in HVDC model cables**

**VU** Thi Thu Nga, **TEYSSEDRE** Gilbert, **VISSOUVANADIN** Bertrand, **STEVEN** John Yuddy, **LAURENT** Christian; Laboratoire Plasma et Conversion d'Energie, Université Paul Sabatier, Toulouse, France

**VU** Thi Thu Nga; (second affiliation) University Power Electric, Hanoi, Viet Nam

### **A10.6 On the way to compare the polarity reversal withstand capability of HVDC mass-impregnated and extruded cable systems**

**MARZINOTTO** Massimo; TERNA S.p.A., Rome, Italy

**MAZZANTI** Giovanni; University of Bologna, Bologna, Italy

**VERCELLOTTI** Uberto; CESI S.p.A., Milan, Italy

**JAHN** Heiko; FGH Engineering & Test GmbH, Mannheim, Baden Württemberg, Germany

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## **B10 Cables for the future**

Topic 11: Cables for the Future

Wednesday June 24<sup>th</sup>, 2015 - 14:30 - 16:00 - Room: B

Chairman: **Rakowska Aleksandra; TU Poznan University of Technology, Polytechnika Poznanska, Poland**

Rapporteur: **Mirebeau Pierre; Nexans France, France**

### **B10.1 Update on world's first superconducting cable and fault current limiter installation in a German city center**

**STEMMLE** Mark; Nexans Deutschland GmbH, Hannover, Germany

**MERSCHEL** Frank; RWE Deutschland AG, Essen, Germany

**NOE** Mathias; Karlsruhe Institute of Technology, Karlsruhe, Germany

**HOBL** Achim; Nexans SuperConductors GmbH, Hürth, Germany

### **B10.3 The test results of superconducting AC and DC cables in Russia**

**SYTNIKOV** Victor, **BEMERT** Sergey, **ROMASHOV** Maxim; R&D Center @FGC UES, Moscow, Russia

### **B10.5 High power underground transmission lines**

**IMAMOVIC** Denis, **TENZER** Michael, **KOCH** Hermann; Siemens AG, Erlangen, Germany

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## **C10 Industrial and special cables**

Topic 12: Industrial and Special Cables

Wednesday June 24<sup>th</sup>, 2015 - 14:30 - 16:00 - Room: C

Chairman: **Rovira Jacint; Grupo General Cables Sistemas SA, Spain**

Rapporteur: **Ben Hassine Mouna; EDF R&D, France**

### **C10.1 Development of an alternative solution to mica tape for fire resistant cables**

**WALD** Detlef; Eifekabel, Villmergen, Switzerland

**ORTON** Harry; Orton Consulting Engineers International, North Vancouver, Canada

**DI** Jimmy; Volsun Electronics, Suzhou, China

### **C10.2 Cables for oil, gas and petrochemical industry**

**THOMBRE** Arun, **MOURAD** Bahaa; DUCAB, Dubai, United Arab Emirates

### **C10.3 Acceptance criteria in nuclear power plant cable qualification**

**PLAČEK** Vít, **KÁBRT** Jan, **HNÁT** Vladimír, **ŽÁK** Pavel; UJV Rez, a. s., Hlavní 130, Rez, 250 68 Husinec, Czech Republic

### **C10.4 Electrical performance improvement of cross-linked polyethylene cables using inorganic filler**

**ESSAWI** Sherif; Electrical Power Dept., Petrojet, Cairo, Egypt

**SAAD** Loai; Electrical Power and Machines Eng. Dept., Aswan University, Aswan, Egypt

**ASAAD** Jeanette; Polymers and Pigments Dept., National Research Center, Cairo, Egypt

**MOSTAFA** Mahmoud; Electrical Power and Machines Eng. Dept., Ain Shams University, Cairo, Egypt

### **C10.5 Determination of fire behavior of polymer cable materials and mathematical modeling of highly-filled halogen-free compound burning**

**SHUVALOV** Mikhail, **KAMENSKIY** Mikhail, **KRYUCHKOV** Aleksandr, **STEPANOVA** Tatiana, **FRIK** Andrey, **SAVIN** Dmitry; VNIIEK, Moscow, Russia

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## **D10 Environment and sustainability 2**

Topic 4: Cables, Environment and Sustainable Development

Wednesday June 24<sup>th</sup>, 2015 - 14:30 - 16:00 - Room: D

Chairman: **Koepfer Rolf; SYCABEL, France**

Rapporteur: **Barbeau Sophie; Nexans, France**

### **D10.1 Life cycle assessments of extruded AC and DC power cable systems**

**HAERING** Dominik, **SCHROEDER** Gero, **SAAM** Christoph, **WEINLEIN** Andreas, **BOSSMANN** Axel; Südkabel GmbH, Mannheim, Baden Württemberg, Germany

### **D10.2 Life cycle assessment improvement medium voltage cable for French market**

**HOUSTIN** Amélie; General Cable, Montereau-Fault-Yonne, France

### **D10.3 Circular economy concept for power cables**

**SLUIJER** Harrie, **VAN ROSSUM** Jos, **MIDDEL** Frank, **LAUWERS** Sander, **TAMMENGA** Hanneke, **LAMBALLAIS** Lawrence, **SNAAK** Emma; Prysmian Netherlands B.V., Delft, The Netherlands

**HERMANS** Dominique, **VAN SLOGTEREN** John, **ERKAMP** Martin, **DE VRIES** Hendrik; Alliander, Arnhem, The Netherlands

### **D10.4 Controlling fluid leaks in damaged fluid filled cables**

**RHODES** Rhys, **STEVENS** Gary C, **GERMAN** Ian; Gnosys Global Ltd., Guildford, Surrey, UK

**LAURICHESSE** Delphine, **BERTRAND** Yves; EDF R&D, Moret-sur-Loing, France

### **D10.5 Condition assessment of high voltage (22 kV) aerial bundled cable (ABC)**

**MUXWORTHY** Martin, **MAFFEI** Mark, **ALEXANDER** Graeme; Nexans Olex, Tottenham, Victoria, Australia

### **D10.6 Comparison of quickfield simulation of three single core XLPE cables, in flat formation, with complex loading, between not taking drying out and taking drying out of soil into account**

**LE ROUX** Joubert; Vaal University of Technology, Vanderbijlpark, South Africa

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## **E10 Challenging environment**

Topic 7: LV and MV Cable Systems

Wednesday June 24<sup>th</sup>, 2015 - 14:30 - 16:00 - Room: E

Chairman: **Beghin Véronique; TRACTEBEL, Belgium**

Rapporteur: **Colombier Serge; Prysmian Câbles & Systèmes, France**

- E10.2 Accelerated aluminum corrosion upon water ingress in damaged low voltage underground power cables**  
**KRUIZINGA** Bart, **WOUTERS** Peter; Eindhoven University of Technology, Eindhoven, The Netherlands  
**STEENNIS** Fred; DNV GL - Energy, Arnhem, The Netherlands
- E10.3 Long-term effect of water tree aged cables injected by silicone liquid under continuous electrical and thermal stress**  
**LI** Kangle; Sichuan University, Chengdu, China
- E10.4 Assessing smoke and heat release during combustion of electric cables using cone calorimeter**  
**BURJUPATI** Nageshwar Rao, **ARUNJOTHI** R.; Central Power Research Institute, Bangalore, Karnataka, India
- E10.5 Lethal combustion product evaluation of polymeric materials used in power cables**  
**NAGESHWAR RAO** Burjupati; Central Power Research Institute, Bangalore, Karnataka, India
- E10.6 High safety and low maintenance aerial cable system withstanding extreme weather**  
**EFRAIMSSON** Lars, **HAGMAN** Ingvar, **KÖHLER** Jan, **BRINGSSELL** Håkan; nkt Cables AB, Falun, Sweden

*Wednesday June 24<sup>th</sup>, 2015 - 16:30*

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**A11 Closing Session**

*Wednesday June 24<sup>th</sup>, 2015 - 16:30 - 18:00 - Room: A*

The Closing session will include three parts:

- **Round Table: World researches on HVDC materials, cables and cable systems**
- **Jicable'15 Young Researcher Awards**
- **Jicable'15 Award and closing of the Conference**