



ICCN News letter

From the ICC Chair

At the spring 2014 ICC meeting, the Administrative Committee held an ad hoc meeting to address how the changes in our industry are likely to impact the ICC. The room was filled with more than 40 attendees, which resulted in some rather lively discussion.



A presentation was delivered that described some of the technological, economic and social trends that are impacting the electrical utility industry. We are in a period of transition, and our industry must adapt or risk becoming obsolete. That is unsettling for an industry accustomed to a slow pace of change where decisions can be made with deliberation, cost analysis and a focus on reliability. But business as usual doesn't cut it anymore. We need to become nimble and make decisions quickly to respond to our customers in real time—whether commercial or residential.

Two significant factors impacting our industry include the advent of distributed generation and the integration of smart technologies into the utility business model. These trends are not unexpected.

Most of our customers have grown up with instant communication and

access to information. The utility of the future will provide customers with information about energy use and energy options, which are increasing due to new generation technologies. In addition, the concept of the central power station may no longer be the most economical choice. A mix of generation sources distributed over a wide area may offer opportunities for increased reliability and reduced costs of distribution. The possibility of a broad fuel mix, including solar, geothermal, fuel cell and wind, adds flexibility, addresses climate change and offers a cushion against price shocks associated with individual fuel sources.

As an industry, we must adapt to take advantage of these trends if we want to prosper in the future economy. That means the ICC must also adapt, and our organization's leadership is always open to your ideas on how we can address the current trends and remain a part of the exciting and dynamic future to come.

Have a safe trip to Colorado Springs. I look forward to seeing you at the premier industry event dedicated to insulated cables and associated technologies.

Thomas C. Champion
NEETRAC—A Center of Georgia Tech
IEEE PES ICC 2014 and 2015 Chair

Keep Your Eye on the Future at the Fall 2014 Education Session in Colorado Springs

By Pete Tirinzoni, Northeast Utilities & Rachel Mosier, PE Power Delivery Consultants, Inc., ICC Chair & Vice Chair - Education Session

Do you spend your working hours underground, unaware of new developments and technology? Then plan on attending the ICC Fall 2014 Education Session where our speakers will address topics such as “The Rise of the Personal Power Plant” and “The Economics of Grid Defection.”

At the Spring 2014 ICC meeting in Kansas City, an ad hoc session was held on “The Impact of New Technologies and Economic Issues on ICC and Our Industry.” Panelists discussed the future and its impact on all of us. The upcoming Fall 2014 Education Session in Colorado Springs is a result of that ad hoc session.

Esteemed presenters from outside our traditional circle will be talking about their vision of the future for the transmission and distribution grids, and challenging some of our own beliefs and understandings. By learning where the electrical infrastructure is headed and how it is going to get there, you will have an opportunity to learn what materials and ideas the electric industry will need to get there, and how the ICC and you individually can best align for the future.

ICC Awards, Recognitions and Distinctions

By Lauri Hiivala, ICC Awards Chair

At each ICC meeting, certificates of appreciation are presented to all outgoing chairs and vice chairs, or upon publication of their standard or guide. They are also presented for best presentation at a subcommittee meeting or educational program and are as follows for Fall 2013.

- Vitaliy Yaroslavskiy, Subcommittee A Meeting, *105°C Qualification: Gambling with XLPE*
- Mike Smalley, Subcommittee B Meeting, *Connector Standard for Insulated Cable Joints: A Utility Perspective*
- Forest Rong, Subcommittee C Meeting, *The CX-3 115 kV Project in Oakland, CA: Seismic Duct Bank Design and Construction*
- Ian Grant, Subcommittee C Meeting, *The CX-3 115 kV Project in Oakland, CA: Seismic Duct Bank Design and Construction*
- Kent Brown, Subcommittee D Meeting, *A Decade of VLF Testing in Nuclear Power: What Have We Learned?*
- Richie Harp, Educational Program, *Technical Presentations and Tour of Electrical Distribution System at AT&T (Dallas Cowboys) Stadium*

IEEE PES Fellows Class of 2014

IEEE's Fellow status is awarded to individuals with outstanding qualifications and contributions in power engineering and industrial applications. Congratulations to Kent Brown who was one of 293 IEEE Senior Members, one of 24 PES members and the only ICC member to receive Fellow status this year. Kent was recognized for leadership in standards development



2014 IEEE Fellow Kent Brown

for design, testing and utilization of electrical equipment for the nuclear power industry.

As senior technical advisor to the vice president of engineering for TVA's Nuclear Power Group, Kent has been active in ICC since 1987, including serving as past vice chair of three working groups and as past chair and vice chair of the Station, Control and Utilization Cable Subcommittee, as well as receiving the ICC Distinguished Service Award in 2001.

2014 IEEE Herman Halperin Award

Established in 1986 through agreement between Herman Halperin and the IEEE Board of Directors, and made possible via funds contributed by Herman and Edna Halperin, the IEEE Herman Halperin Electric Transmission and Distribution Award recognizes an individual or team (up to 3) for outstanding contributions to electric transmission and distribution. It is awarded annually based on the recommendation of the Technical Field Awards Council of the IEEE Awards Board.

Prior to 1986, the award was known as the William M. Habirshaw Award. A recipient of the 1962 Habirshaw Award, Halperin had a distinguished 40-year career with the Commonwealth Edison Company, followed by 15 years as a consulting engineer. He was particularly recognized for contributions to the design and operation of electric plant facilities and power cable systems.

Dr. Peter Staecker, IEEE Past President, presented this year's award to Willem (Wim) W. Boone for successful international leadership and guidance in understanding critical factors affecting power cable life and in improving diagnostic test procedures.



2014 IEEE Herman Halperin Award winner Wim Boone (third from left), his wife Ina (far left), and his sons Willem and Pieter (to Wim's left and right).

Termination & Joints Standards To Be Based on Voltage Class—A New Direction

By Bill Taylor, 3M Senior Product Development Specialist

News flash! IEEE Std 48 and IEEE Std 404 will cease to exist in the near future. After much discussion, these two well-known standards that cover test procedures and requirements for terminations and joints on extruded and laminated dielectric shielded cables rated 2.5 kV to 500 kV are taking a new direction.

Having been in the process of harmonizing these two standards for many years, the ICC has decided to replace the standards with two new standards that will be split by voltage instead of by accessory. The new standards will cover both joints and terminations, with one for distribution voltages up through 46 kV and the other for transmission voltages of 69 kV and higher.

There are many reasons for this direction. Most of the test requirements, sequences and other guidelines in the existing two standards are patterned after distribution systems. It is very difficult to test transmission accessories in the same manner. For example, the short circuit test requirement limits the

current to 40 kA, which will not come close to heating up transmission connectors to the 250°C temperature requirement. The number of samples required to be tested and the test sequence required for transmission accessories makes the samples very long and makes testing difficult.

At ICC meetings, about 90% of the discussion time for these existing standards has been spent on distribution accessories because most of the people in the room are more familiar with distribution voltages. This means that the transmission sections of these accessories typically have not gotten the attention they should. Most of the areas that require revisions are in the transmission areas, and by creating a standard for transmission accessories, people familiar with these voltages and accessories can concentrate on these areas.

This is an exciting new direction for these standards and the best direction going forward. Please help us create these new standards.

ICC Standards Corner – Call to Action!

By John Merando,
Bechtel Power Corporation,
ICC Standards Coordinator

Summer is now over and few of us are giving much thought to the fact that another year is three quarters complete. Committed volunteer work on standards has either not started or the expected progress has not been made. Since our last ICC meeting, only one document, *IEEE 575 Guide for Bonding Shields and Sheaths of Single-Conductor Power Cables Rated 5 kV through 500 kV*, has become a revised standard. Congratulations to Chairman Michael Buckweitz and the working group for this success!

By the end of 2014, IEEE 848, 1242, and P400.4 are due for completion and submission to NESCOM. New documents P1254, P1810, P1844 and P1879 are scheduled for NESCOM consideration in 2015. By the end of 2018, another 17 standards need to be revised, balloted and approved by NESCOM, nine of which do not yet have a PAR and others are **in need of new individuals to take over for retired or inactive working group chairmen and vice chairmen.**

Remember, no longer are standards re-affirmed as written. If a standard is not revised every ten years, it will automatically be withdrawn. A revision may occur when material becomes obsolete, or if three or more amendments occur within three years after approval. Every IEEE standard can be withdrawn by the IEEE-SA Standards Board, meaning it is no longer available for purchase, not sanctioned for use by IEEE and may contain errors or outdated information.

Tell Us What You Think!

ICC welcomes your feedback. If you'd like to suggest topics for upcoming issues of the ICC Newsletter, or add a colleague to our email database, please contact Harry Orton at h.orton.1966@ieee.org

Calendar of International Events

Compiled by Wim Boone

2014

International Conference on Condition Monitoring and Diagnosis (CMD)

September 21-25, Jeju, South Korea
www.cmd2014.org

IEEE Conference on Electrical Insulation and Dielectric Phenomena (CEIDP)

October 19-22, Des Moines, Iowa
<http://sites.ieee.org/ceidp-2014/>

International Conference on Smart-Green Technology in Electrical and Information Systems (ICSGTEIS)

November 5-7, Bali, Indonesia
<http://icsgteis.unud.ac.id/>

2015

CIREC 2015 – 23rd International Conference and Exhibition on Electricity Distribution

June 15-18, Lyon, France
www.cired2015.org

Jicable'15 – 9th International Conference on Insulated Power Cables*

June 21-25, Versailles, France
www.jicable.org

The 11th International Conference on the Properties and Applications of Dielectric Materials (ICPADM)

July 19-22, Sydney, Australia
www.icpadm2015.org

*Abstracts and related papers must be submitted before November 15, 2014.

Dr. Bahder's Power Cable Innovations

By Carlos Katz, Cable Technology Laboratories



The article, "Who Was Dr. George Bahder?" that appeared in the spring newsletter triggered some to ask,

"What exactly were his contributions?" I was privileged to work with Dr. Bahder during his career from 1962 to 1982 and witness the positive impact that his contributions have made to the industry, including the 34 U.S. patents that he authored or co-authored.

Dr. Bahder was granted five patents (3.346.808, 3.346.809, 3.370.227, 3.374.428 and 3.340.137) in relation to the detection and measurement of partial discharge (PD), the most significant of which were related to measuring

PD in cable factory environments and to the development of water terminals that are now used globally to test high-voltage extruded type distribution and transmission cables.

Having studied the harmful effect of moisture on the performance of extruded cables, Dr. Bahder holds a patent on equipment to measure susceptibility to the formation of water trees (US Patent 3.821.640), as well as several patents related to materials and innovations that minimize the effects of moisture and are still in use worldwide (US Patents 3.943.271, 4.130.450, 3.651.244, 4.145.567 and 4.372.988).

Dr. Bahder also contributed innovations related to extrusion, including

calculating temperature transients and a cable curing system to facilitate the application of insulation (US Patent 4.080.131). He holds patents for a four-layer cable with emission shields (US Patent 3.885.085), which were a success prior to super-smooth shields, and for the development of a prototype process of curing cable insulation (US Patent 3.725.230). Dr. Bahder's interests ranged from cryogenic cables (US Patents 4.241.233, 4.394.534 and 4.397.807) and high voltage, high pressure fluid-filled cables (US Patents 3.594.489, 3.594.492 and 4.104.479), to the design and development of cable accessories (US Patents 3.845.235, 3.846.578 and 4.487.994) and innovations related to overhead conductors (US Patent 2.707.674).

His innovations and patents have no doubt had a very significant impact on the advancement, improvement and extension of life of power cables. Please feel free to contact me for the complete list of Dr. Bahder's patents.

Success for SC B1 at CIGRE

By Pierre Argaut, Chairman CIGRE SC B1

The 2014 Session of CIGRE was a great success! The technical meeting opened on Wednesday, August 27th with 460 attendees and a presentation on the trends in the field of insulated cables and how Study Committee B1 (Insulated Cables) will follow the four technical directions adopted by the Technical Committee of CIGRE.

Johan Karlstrand, Convener of the Tutorial and Publication Advisory Group of SC B1, received the CIGRE Technical Committee Award, which is granted every two years in recognition of outstanding work.

Presentations on Cigre SC D1 and the ICC (by Ed. Gulski) were given before lunch, making ICC better known among the CIGRE audience.

CIGRE President Klaus Froehlich at the official opening ceremony of the 45th CIGRE Session on August 24, 2014 at Palais des Congres, Paris, France.



On Thursday, SC B1 held its plenary annual meeting where future publications were announced and work items decided. On Friday, 30 out of the 33 published papers from 23 different countries that formed the basis for the SC B1 Special Report by Anders Gustafsson were presented in a session chaired by Wim Boone and attended by more than 320 people. The Customer Advisory Group and several working groups also presented their work.

Upcoming ICC Events

Fall ICC

Colorado Springs, Colorado October 5-8, 2014

For a full list of all Fall ICC presentations and activities, or to register for the meeting and Transnational and Networking Luncheons, please visit the website at www.pesicc.org.

Spring ICC

Clearwater Beach, Florida April 12-15, 2015

Please return frequently to the www.pesicc.com website for updates on presentations, event registration, and other meeting information.

ICC Newsletter Team

Harry Orton, ICC Communications Chair
Wim Boone, ICC Advisory Committee Chair
Ram Ramachandran, AC Task Force Chair