

ICCN News letter

From the ICC Chair

Between ICC meetings, big changes can happen. While they can sometimes slip by without much



notice, we need to be vigilant about changes affecting our industry. Please bring any issues and new technologies that impact our industry to the attention of the subcommittees. When we work together as a cohesive team, we can drive our industry in a direction that benefits all.

Since our last meeting, the ICC leadership has transitioned as I step in as Chair and try to fill John Smith's shoes who did an outstanding job of keeping the membership informed. I appreciate the opportunity and challenge to continue and build upon John's legacy as the "great communicator" and to make the ICC more dynamic and responsive to the changing winds of technology.

Frank Frentzas with Commonwealth Edison is our new Vice Chair/Treasurer, and there have also been changes to subcommittee chairs and vice chairs as updated on the ICC web site. Thank you to all of these individuals for their continued support.

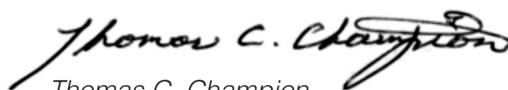
Our new leadership team will hit the ground running at the upcoming spring meeting on May 4-7 in

Kansas City where Rick Bush, Editorial Director of T&D World Magazine, will provide our keynote address. As a former ICC member, Rick was instrumental in writing the ICC standard that covered soil thermal resistivity measurements. Rick has promised an entertaining keynote speech, complete with a "roast" of ICC luminaries.

The opening session will also recognize various achievements, including one member who has been promoted to IEEE Fellow and another who will be presented with the 2014 IEEE Herman Halperin Award by IEEE Past President Dr. Peter Staecker.

Finally, please spread the word and invite your colleagues to come learn about how ICC influences industry standards, provides learning opportunities on new and existing technologies and acts as a forum for networking with other industry professionals. We are again offering 10 free meeting registrations on a first-come, first-served basis to first-time utility attendees!

Have a safe trip to Kansas City. I look forward to seeing you at the premier industry event on insulated cables and associated technologies.



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

Continue the Efforts and Participation

*By John T. Smith, III
General Cable Corporation
Immediate Past ICC Chair*

As outgoing ICC Chair, I am honored to have had the opportunity to serve. Thank you to all the officers and members for their generous support over these past informative and enjoyable (and sometimes exhausting) two years.

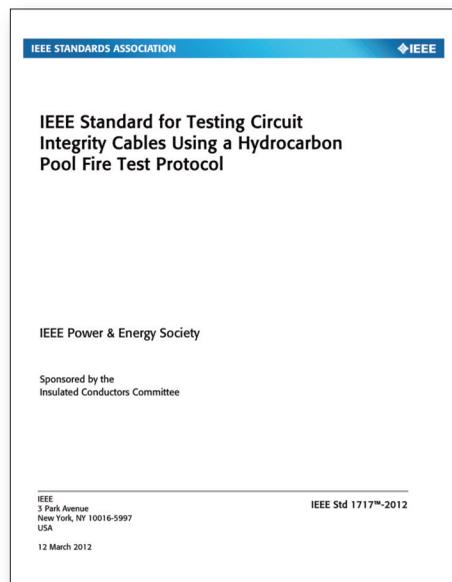
During my tenure, efforts were implemented to increase utility engineer participation, and they will continue. ICC's standards process was improved through offline WG and DG meetings via teleconferencing and webinars between meeting dates, and several IEEE standards were approved within the new 10-year approval cycle. These efforts must continue for timely, effective standards development and maintenance. The new mobile tools evaluated for personalized meeting agendas will continue with expanded capabilities under the guidance of Rachel Mosier.

Over the past two years, ICC members have continued to be recognized and honored for their participation and contributions within the electrical wire and cable industry. We must continue to solicit, mentor and promote ICC membership participation to maintain leadership and ensure new ideas and a broader, more diverse sharing of the ICC's volunteer workload.

Please continue to lend your support and active participation to the work of the ICC, one of the best professional and technical committees of the IEEE-PES.

News from Subcommittee D, Generating Station and Industrial Cables

By Robert Konnik, Marmon Innovation & Technology Group,
Former Chair of Subcommittee D



Subcommittee D is tasked with cable systems for use in generating stations, substations, industrial facilities, shipboards, military installations, submarines, mining and transit/locomotive cars. While the word “nuclear” is not used, I frequently hear Subcommittee D referred to as the nuclear group. When I first became a Sub D officer, there was a lot of talk about a nuclear renaissance. There was a recession at the time and oil had dropped significantly in price. When I became chairman, the oil industry had recovered, but with issues at Japan's Fukushima nuclear plants, the talk of a nuclear renaissance had halted. Now with issues in Korea's nuclear plants, there is even more need for nuclear standards.

Over the past five years, Subcommittee D has been involved with reaffirming many existing standards including IEEE 1428 and 648, a corrigendum published for IEEE 1202, and revisions for IEEE 1143, 1185 and 422. Two new standards

were published—IEEE 1717 *Standard for Testing Circuit Integrity Cables Using a Hydrocarbon Pool Fire Test Protocol* and IEEE 1682 *Standard for Qualifying Fiber Optic Cables, Connections and Optical Fiber Splices for Use in Safety Systems of Nuclear Power Generating Stations*. There are also standards that will be in ballot this year, including IEEE 848, 1242 and 383. Two additional new standards should be in ballot in 2015—IEEE 1810 *Guide for the Installation of Fire-Rated Cables Suitable for Hydrocarbon Pool Fires for Critical and Emergency Shutdown Systems in Petroleum and Chemical Industries* and IEEE 1844 *Standard Test Procedure for Determining Circuit Integrity Performance of Fire Resistive Cables in Nuclear Facilities*. There are also new discussion groups that include D20D *Standard for Submersion Testing of Cables Used in Nuclear Plants* and D21D *Standard Test Procedure for Determining Circuit Integrity Performance of Fire Resistive Cables in Tunnels and Safety Critical Transit Applications*.

We will continue to see new nuclear standards, as well as standards in petrochemical and transit. There is also a white paper on bend radius being developed, and IEEE 1202 is in revision. Within the next two years, IEEE 1185, 1428 and 634 will need to start the revision process, followed by IEEE 422, 1143, 1682 and 1717 in 2016 and 2017. Subcommittee D is always looking for volunteers to do presentations, but even more, we are looking for volunteers to contribute to standards.

ICC Awards

By Lauri Hiivala, ICC Awards Chair

At each ICC meeting, certificates of appreciation (COAs) are presented to all outgoing subcommittee, working group and discussion group chairs and vice chairs, or upon publication of their standard or guide. At the Spring 2013 meeting, COAs for best presentations were presented to the following individuals:

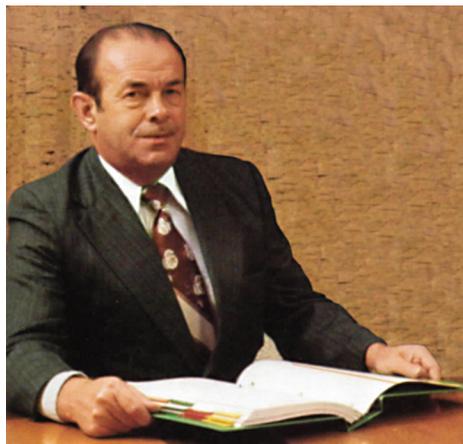
- Timothy J. Person, Subcommittee A Meeting, *Temperature and Stress Effects on the Dissipation Factor of XLPE Insulation*
- Yingli Wen, Subcommittee C Meeting, *Super Storm Sandy of 2012*
- Gabriel Taylor, Subcommittee D Meeting, *Evaluation of Critical Nuclear Power Plant Electrical Cable Response to Severe Thermal Fire Conditions*
- Robert Demair, Subcommittee D Ad Hoc Discussion Group Meeting, *Measurement of Toxicity Index per NES 713 on Cable Components Separately and When Bundled into the Proportions of a 1/C, 1/0 AWG, 15 kV Cable*
- Kent Brown, Discussion Group D5 Meeting, *A Structured Approach to the Reduction of Training Radius Issues*
- Frank Petzold, Subcommittee F Meeting, *Combination of VLF and Resonance Principle for Withstand Testing of Long Cable Length*
- Rusty Bascom, Educational Program, *Cable System Characteristics and Fault Types and Failure Modes*

IEEE's Fellow status is awarded to individuals with outstanding qualifications and contributions in power engineering and industrial applications. ICC member Serge Pelissou became one of the 297 IEEE Fellows class of 2013 for his contributions to characterization of extruded cables and components in their life cycle.



Who Was Dr. George H. Bahder?

By Carlos Katz, Cable Technology Laboratories



I first met Dr. George Bahder in April 1962 when he came to work at the R&D laboratories of General Cable Corporation in Bayonne, New Jersey. About a month after I started working there, he interviewed for an engineering position. Dr. Bahder brought a copy of his doctorate thesis to the interview. With one glance at the thesis, an associate director requested to speak with Dr. Bahder, but he was already on his way to the bus terminal three blocks away. Dr. Bahder was practically fetched off the bus and returned to the laboratory where he was hired on the spot.

Dr. Bahder was born in Poland on January 17, 1925. Prior to coming to the U.S. in 1962, he received B.S., M.S. and D.Sc. degrees from the Polytechnic Institute, Warsaw, Poland. Between 1948 and 1962, he served as an assistant professor and professor of electronics with the Electrical Institute of Warsaw and the Polytechnic Institute of Lodz. At that time, his research focused on electrical measurements and test techniques related to dielectrics.

At General Cable, Dr. Bahder quickly ascended to assistant director of R&D for power and control cables. He later became director of R&D for Phelps Dodge Wire and Cable and then returned to General Cable as the corporate vice president of R&D where he was responsible for power, control, communications, industrial and

OEM cable and wire products. In 1978, Dr. Bahder, together with Carlos Katz, founded Cable Technology Laboratories, Inc. where he became president and director of R&D.

Throughout his career, Dr. Bahder patented innovations in cable design, manufacture and testing, including designs with reduced loss, new concepts for joints and terminations, resistance to water trees, water-blocking compounds and several methods of extruded cable manufacture. Overall, he was granted approximately 35 U.S. patents.

Over the years, Dr. Bahder worked on the development and implementation of new technologies, including high-pressure oil filled pipe-type cables and cross-linked polyethylene insulated cables to ensure reliable operation at high voltage stresses.

He also worked on a horizontal extrusion and curing system, various methods for operational conversion, new design concepts and a wide range of innovative test methods and procedures. One of his patented methods for partial discharge testing was even adopted as an industry standard. He also developed analysis for determining transients and measuring corona losses on high-voltage overhead lines, as well as optical fiber cables for voice and data transmission.

Throughout his career, Dr. Bahder published more than 60 technical papers. He was a senior member of ICC, an IEEE Fellow, member-at-large of the National CIGRE Executive Committee, and a member of CIGRE, the National Research Council and the National Academy of Sciences. He passed away at the early age of 57 in December of 1982. Today, the memorial award of the ICC is rightfully named for Dr. George H. Bahder.

Calendar of International Events

Compiled by Wim Boone

2014

IEEE PES Transmission & Distribution Conference & Exposition
April 14-17, Chicago, Illinois

7th International Symposium on Electrical Insulating Materials (ISEIM)

June 1-5, Niigata City, Japan

IEEE Electrical Insulation Conference (EIC)
June 8-11, Philadelphia, Pennsylvania

Polymers in Cable
June 17-18, Philadelphia, Pennsylvania

18th International Conference on Dielectric Liquids
June 30-July 3, Bled, Slovenia

CIGRE International Council on Large Electric Systems – 45th Session
August 24-30, Paris, France

International Conference on High Voltage Engineering and Application (ICHVE 2014)

September 8-11, Poznan, Poland

International Conference on Condition Monitoring and Diagnosis (CMD)
September 2-25, Jeju, South Korea

IEEE Conference on Electrical Insulation and Dielectric Phenomena (CEIDP)
October 19-22, Des Moines, Iowa

2015

CIREC 2015 – 23rd International Conference and Exhibition on Electricity Distribution
June 15 – 18, Lyon, France

Jicable'15 – 9th International Conference on Insulated Power Cables
June 21-25, Versailles, France

The Art of Writing Standards

By John Merando, Bechtel Power Corporation, ICC Standards Coordinator

Developing and maintaining standards are the most important activities that IEEE ICC working groups (WGs) are tasked to perform. The ICC is responsible for more than 60 standards, and at any given point, about one third of these are in the process of development, revision or update.

The first step in development is for the discussion group (DG) to agree on a scope, purpose and title for the proposed document. This information should be well thought out as it forms the basis for the Project Authorization Request (PAR) form. When a completed draft standard is up for approval, it is compared to the original PAR and the scope, purpose and title should match.

After approval of the PAR by the IEEE SA Standards Board, the WG officially starts the standard writing process. Most WGs start with an outline, which determines the structure and sections to be worked on by various members. A list of references and concepts/ideas is then developed and assigned to WG members for research. The draft document starts to take form with concepts, figures, tables, clauses and sub-clauses. The work is performed between ICC meetings and submitted to the WG membership so that a draft can be assembled and distributed for review prior to the next meeting. The WG meetings at the ICC meeting can then be used to discuss concepts, resolve technical issues and dis-

agreements, and keep the document on schedule by tracking status of assigned tasks.

One of the challenges in writing standards is the potential for inconsistency in writing style. That is why the WG appoints an editor, which is often the WG chair. There is also the need for a clear understanding of intent and meaning because these documents can be cited in judicial cases. Normally, standards use the word "shall," recommended practices use the word "should," and guides use the word "may." The word "must" should be avoided as its mandatory inference could be confused with "shall" and called into question in a court of law.

It's also important to present the information so that it is clear and concise. Developing a good structure takes effort, but upfront planning helps produce a cohesive document that reduces rewrites. Consistency can be achieved by organizing subjects as various points that then serve as sub-clauses in the draft. It often helps to look at recent standards as an example for tone and structure.

Keeping WG meetings on track requires consensus among diverse interests and points of view. The WG chair uses the ICC Policies and Procedures Manual, Roberts Rules of Order and the IEEE Standards Style Manual to run the meetings and to develop the document in compliance with the IEEE Constitution and Bylaws.

Guidebook: ICC's Agenda App

By Rachel Mosier, PE
Power Delivery Consultants, Inc.,
ICC Past Chair

At our fall meeting, we trialed a new and improved app for our agenda. It was a smashing success! The attendees gave it such great reviews that we'll be using it again for our upcoming spring meeting.



If you're new to the free Guidebook app, it runs on all smartphones and installation is easy and intuitive! Just install Guidebook from the App Store or Google Play Store. If you already installed the Guidebook app, just "x" out the fall meeting.

Then, from the app, select Download Guides and search for ICC under the Trade Shows & Events option. Select the IEEE Insulated Conductors Committee (ICC) meeting and you're in! It's that easy.

Guidebook will give you access to the latest meeting schedule, including automatic updates. You can set up your own personalized schedule, browse exhibitors, view maps and floor plans, and access other useful information about the ICC and the 2014 spring meeting.

If you have any questions or comments, please send me an email at r.mosier@pdc-cables.com. Your feedback is always welcome.

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 heorton@msn.com

ICC Newsletter Team

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

Upcoming ICC Events

Spring ICC – Kansas City, Missouri

May 4-7, 2014

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

Fall ICC – Colorado Springs, Colorado

October 5-8, 2014

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