Fall 2015, Volume 4, Issue 2

ICC Newsletter

From the ICC Chair

This upcoming fall meeting will be my last as Chair of the ICC. While time has passed quickly, we started with several personnel changes and have succeeded in working out most of the wrinkles to help keep the ICC moving forward.

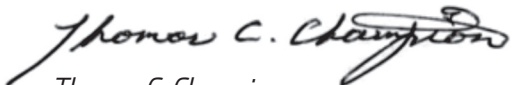
Many consider our industry in a major transition as utilities move from a central power station business model to distributed generation, renewables and the smart grid. In 1947, then Chair L. F. Hickernell (pictured above) presided over the first ICC meeting in New York City, which included 45 attendees and focused on determining the ICC's organizational structure and function. The result was 12 subcommittees, which remained the basic ICC structure until 1998.

PES is now going through a reorganization intended to address the impact of evolving technologies and identify future needs. One suggestion from the reorganization task group was to broaden the ICC scope to include all conductors, both overhead and underground, thereby changing our name to Conductors Committee. While this change is not likely to occur because overhead conductor expertise resides primarily within the T&D Committee, the suggestion points to the need to remain constantly vigilant.

Today, ICC has between 350 and 420 meeting attendees and an organizational structure of seven subcommittees. Thanks to the contributions of many dedicated individuals, we have grown substantially. And we will continue to grow if we remain cognizant of industry trends and if our leaders step forward to move us in the right direction.

L. F. Hickernell rose to the position of vice president of engineering at Anaconda Wire and Cable and president of the AIEE (IEEE's predecessor) from 1958 to 1959. If you would like to know more, check out the Engineering and Technology History Wiki (previously the IEEE Global History Network) at http://ethw.org/L._F._Hickernell.

Have a safe trip to Tucson! 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

Fall 2015 Education Session Cable Ampacity

By Peter Tirinzoni & Rachel Mosier, PE, Power Delivery Consultants, Inc., Education Chair & Vice Chair

Have you always wanted to know more about cable ampacity? Who hasn't!

In response to overwhelming demand, the next education session will focus on **Underground T&D Cable Ampacity!**

The session will cover ampacity basics, backfill design, grounding/bonding impact, trenchless considerations, transient analysis and dynamic (real-time) ratings.

Don't miss this session and the opportunity to hear from well-known cable industry experts at the J.W. Marriott Starr Pass in Tucson, AZ on Wednesday, November 4, from 1 to 5 p.m.

Calling All ICC Women Attendees!

At the past two ICC meetings, Cindy Flenniken and Rachel Mosier hosted a social event for like-minded professional women in our industry. Our attendance has already doubled!

Please join us for our third social gathering of ICC Women Engineers on Sunday, November 1, from 4 to 5 p.m. in the San Xavier Room at the JW Marriott Starr Pass Resort, Tucson. We hope to see you there!

RSVP: cindy.flenniken@lyb.com or r.mosier@pdc-cables.com

Ron Halderman Inducted into the Hall of Fame

By Rachel Mosier, P.E., Power Delivery Consultants, Inc.

ICC member Ron Halderman, P.E., was recently inducted into the North American Society for Trenchless Technology (NASTT) Hall of Fame!

Ron Halderman graduated from the Colorado School of Mines with a degree in geological engineering. He has been involved in drilling for the past 35 years, and he serves as the Director of Horizontal Directional Drilling (HDD) for the Mears Group. He is a true leader in the horizontal directional drilling industry, holding two patents—one regarding drilling mud and another that involves using two rigs with cleaning systems on each side of a river. The latter invention is now used worldwide.

Ron is also an active member at various industry conferences, including NASTT's No-Dig Show, UCT, ASME and, of course, ICC. He has published several articles in trade journals, including Trenchless Technology, No-Dig International, World Tunneling, Pipe Line Industry and Pipeline & Gas Journal.

Ron recently took time during his jury duty lunch break to talk to me about his career.

The following is an excerpt from our conversation:

Q: What's been your favorite HDD project and why?

A: The project in the San Francisco River in Brazil. There were piranhas in the river. I didn't go fishing, but I liked to watch them.

Q: What was your most challenging HDD project?

A: That would probably be the crossing from Tanner's Point to Craney Island in Virginia. We drilled two parallel 7,300-foot drills of pipe-type cable, with several 20-degree horizontal curves and a 48-degree horizontal curve at each exit point. We accomplished this in part by drilling intersecting pilot holes. The entire process was state-of-the-art, and nobody else thought Mears could do it except the client, who was ultimately pleased and impressed with the results.

Q: Do you have any suggestions for students who want to get into HDD? Should they pursue civil engineering? Mechanical engineering? Geology?

A: I recommend geological engineering because it covers both geology and civil engineering.

Ron lives in Montana (otherwise known as "Big Sky Country") with his wife Lynn of 32 years. They have two daughters and a son, two horses, a dog and two cats. When Ron is not busy drilling boreholes, you can find him fly fishing on the rivers of Montana.

ICC AWARDS

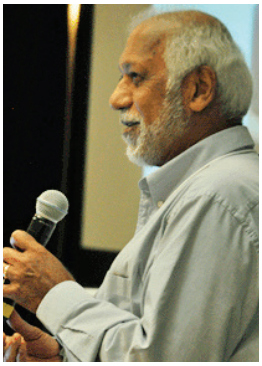
By Lauri Hiivala, ICC Awards Chair

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. COAs are also presented for best presentation at a subcommittee meeting or educational program as follows for Fall 2014:

- Nigel Hampton and Joshual Perkel, Subcommittee A Meeting, *Decision Making & Forecasting Using "Real" Utility Data – Pitfalls, Challenges, and a Way Forward*
- Thomas Parker, Subcommittee B Meeting, *The Need for a New MV Joint Connector Test Procedure*
- Don Koonce, Subcommittee C Meeting, *115 kV Temporary Construction Cables*
- Kent W. Brown, Subcommittee D Meeting, *State of the Nuclear Industry*

Working Group B19: Cable Preparation Techniques for Installation of Cable Accessories (IEEE 1816-2013) received the **2015 PES Technical Committee Working Group Recognition Award** for the timely development of a new standard on cable preparation for installation of joints and terminations.

Deepak Parmar received the **2015 Technical Committee Distinguished Service Award** that acknowledges the efforts of an individual whose sustained performance has contributed to the advancement of a committee technology. He was awarded for his leadership in the area of thermal resistivity of soils and backfill materials.

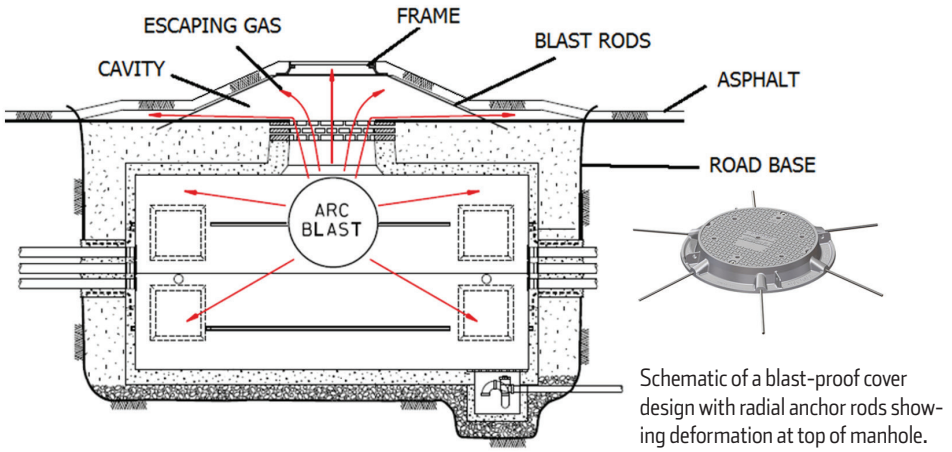


C34 Discussion Group – Manhole Events

By William Black, Georgia Tech, Chair of C34 Discussion Group

With extended service lives and increased loads, manhole events resulting in subsurface fires and explosions are becoming more prevalent. Much of the equipment involved in these events was installed decades ago and has been in service past its original design life. When the equipment fails, it can cause combustible gases to build up in vaults and manholes. Any ignition source can ignite the accumulated gases, resulting in smoking manholes, manhole fires and flying manhole covers.

Manhole events are a complex problem with multiple causes and several potential solutions. Although an electrical fault is a very brief event, the energy generated, even at distribution voltages, can create significant damage. Further complicating these events is the fact that the gases that can evolve during the fault are often combustible and have the potential to ignite. This added source of chemical energy must be dissipated along with electrical energy before the event can be safely diffused.



Schematic of a blast-proof cover design with radial anchor rods showing deformation at top of manhole.

In an effort to further the understanding of these manhole events, ICC committee C34D has prepared a white paper that outlines the causes and discusses potential solutions. A compilation of data and experiences contributed by utility engineers, manufacturers and researchers over a four year span, the white paper contains a brief statistical analysis of manhole events that have occurred in North America. It presents a summary of the current level of knowledge, including a list of hardware and instrumentation designed to reduce the safety risk to the public and utility maintenance crews. Also included in the paper is a discussion of several manhole cover designs that limit the motion of the cover and relieve pressure generated during the sudden release of energy inside the manhole (see schematic).

The white paper describes a number of utility schemes that have been employed to mitigate the effects of a possible manhole event. A theoretical study that can serve as a tool for the design of safer manhole structures is discussed, and a list of literature that can serve as further reading on the subject of manhole events is provided.

The C34 Discussion Group is now working to identify areas where further research and data collection is required to develop strategies aimed at detecting, mitigating and preventing these types of events. Click here for a copy of the white paper or contact C34D Chairperson William Black at william.black@me.gatech.edu.

Calendar of International Events

Compiled by Wim Boone

2015

2015 Conference on Electrical Insulation & Dielectric Phenomena (CEIDP)
October 18-21, 2015, Ann Arbor, Michigan
http://sites.ieee.org/ceidp/2015-call-for-papers/

Cigré/IEC 2015 International Symposium: Development of Electricity Infrastructures in Sub-Saharan Africa/October 26-30, 2015, Cape Town, South Africa
http://cigre.org/Homepage/Events/Symposia/Symposia-2015/Cigre-IEC-symposium-in-Cape-Town

IEEE - 2015 International Conference on Condition Assessment Techniques in Electrical Systems (CATCON)/December 10-12, 2015, Bengaluru, India
www.catcon2015.org

2016

Cigré Session 2016/August 21-26, 2016, Palais des Congres, Paris
http://www.cigre.org/Events/Session/Session-20

IEEE Dielectrics & Electrical Insulation Society Conference on HV Engineering & Applications
September 2016, Chongqing, China
http://sites.ieee.org/deis/conferences/

ICC Newsletter Team

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

Jicable '15 at a Glance

By Marco Marelli, Chair of the ISTC, Jicable '15

On June 21 to 25 in Versailles, France, more than 800 attendees from 47 countries exchanged insight and ideas at Jicable '15, the 9th International Conference on Insulated Power Cables.

Nigel Hampton (third from left) accepts the award for the Jicable '15 Winning Paper from Steering Committee Chair Laurent Tardif (far left), Steering Committee Member Lucien Deschamps (second from left), and International Scientific and Technical Committee Chair Marco Marelli (far right).

The week opened with lectures about the energy market in Brazil and the electricity transmission infrastructure in Europe, both of which pointed to the need for developing a global sustainable electrical "network of the future" and robust, reliable transmission infrastructures.

Among all subjects covered in most of the 326 submitted papers were submarine cables, HVDC systems, diagnostics and testing. These topics had the most participation in the conference's 50 oral sessions and 4 posters sessions during the week.

The winning paper was *The Impact of VLF Frequency on the Effectiveness of Withstand Diagnostics,* by N. Hampton, J. Perkel, V. Tomer, M. Kuntsevich and J.C. Hernandez. The three best works of the Young Researcher Contest included works on spatially-resolved measurement and diagnostic methods, by E. Fisher and C. Weindl; measurement and modelling of surface charge accumulation on insulators in HVDC lines, by B. Zhang, Q. Wang and G. Zhang; and modelling for Vortex Induced Vibration (VIV) analysis of submarine cables, by J. Hedlund.

The adjunct events were extremely interesting as well. These included five tutorials, the technical exhibition with 40 exhibitors, three technical visits to sites of interest and World Energy Transmission System (WETS) workshops WETS'15 and WETS D'15.

The success of Jicable '15 confirmed that this event is the leading worldwide forum for insulated power cables, and the outstanding technical level of the conference further raised the expectations for the next Jicable event in 2019.

Upcoming ICC Events

November 1-4, 2015..... Fall ICC – Tucson, Arizona
For a full list of all Fall ICC presentations and activities, or to register for the meeting and Transnational Lunch, please visit the website at www.pesicc.org.

April 3-6, 2016..... Spring ICC – Fort Lauderdale, Florida
Please return frequently to the www.pesicc.com website for updates on presentations, event registration, and other meeting information.

ICC STANDARDS CORNER

By John Merando, ICC Standards Coordinator

Congratulations to WG D10W Chairman Robert Konnik and Vice Chair Ajit Gwal for successfully revising IEEE 383, *Standard for Qualifying Electric Cables and Splices for Nuclear Facilities,* which was approved by the SA Standards Board on September 3, 2015.

PARs and PAR extensions that were approved by the SA Standards Board at this year's June and September meetings include P1407, P1493, P1637, P400.3, P1614, P1210, P48 and P1185. All of these standards are slated for approval in 2019. The growing volume of documents that are due for revision and that must be updated to avoid withdrawn include standard number 1242 due in 2015; standard numbers 532, 1407, 592, C62.22.1, 1493, 386, 495, 1610, 1216, 1425, 1406, 1234, 442, 400.1, 400.3 and 1617 due in 2018; and standard numbers 1142, 635, 48 and 82 due in 2019.

These 21 documents represent approximately 36 percent of the 58 standards and guides that ICC sponsors. Each has a technical and financial impact on our economy, our environment and our society. We are very grateful to the dedicated engineers, technicians, marketing and sales personnel that volunteer their efforts to write, revise and maintain these documents, and to the corporations that support these activities. We encourage their continued standards development participation.

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.