



Underground, My First Love

I can't believe it, but it's been 20 years since I regularly attended Insulated Conductor Committee (ICC) meetings.

It's been 20 years since I made the pilgrimage to the Don CeSar, that grand hotel on the Gulf Coast of Florida where we gathered each fall. It's been 20 years since my kids played in the pool that was ringed by the white-haired individuals who made up the majority of the attendance at the ICC. Well, now my children are grown and have moved out on their own. I now have grandkids, and what hair I have left is turning white.

My good friend and former workmate Tom Champion is now the chairman of the ICC. Imagine that. The ICC was being held this year in my hometown, Kansas City, and Tom asked me to kick off the opening ceremony with a few words and some insights into what the future might hold.



Tom Champion, chair of the Insulated Conductors Committee of IEEE, puts up with a little too much attention from Rick Bush.

Of course, I said yes, and that brought back a flood of memories. In my youth, the ICC was not the most welcoming place for a young engineer. Our industry was in the early stages of sorting out what would make a good underground residential distribution system. As an industry, we were trying to discover whether we should cross link our polyethylene insulations, what kind of semiconducting jackets and neutrals made the most sense, and even whether cables needed an outer jacket.

The heavyweights in the industry seemed like giants to me. The most god-like was Henry Chu from ConEd in New York City. When Henry spoke, the room went silent. Everyone had to hear what operational crises he had dealt with in the past six months, whether it was a manhole fire, an explosion in a vault or a splice failure caused by thermo-mechanical bending.

I also got to witness epic verbal battles on the relative merits of polyethylene and ethylene propylene rubber insulations. In one corner was Dave Silver with General Cable, and in the

other corner was Larry Kelly with Okonite. The ICC was filled with industry titans in those days, an intimidating place for a 20-something starter engineer trying not to say anything too vapid.

But time and opportunity came my way, and I found myself performing cable pulling and sidewall bearing pressure tests on new cable designs for the Electric Power Research Institute. On top of that, I was given the opportunity to share these results at the ICC Open Forum. I couldn't believe it. At the ripe old age of 30, I was presenting the results to the entire ICC membership. Sure enough, the heavy hitters in the room challenged me on each bit of data. I must have held my ground, because after that presentation, I found myself a part of the ICC family. I had gone through the gauntlet and survived.

I stayed active at the ICC for more than a decade, and I even did a lot of the writing for the IEEE standard for measuring thermal soil resistivity. As luck would have it, this same ballot was up for reapproval this year and some of the sections I had written were being rewritten. Dave Purnhagen with USI was suggesting changes, and although I am no longer on the committee, I was grandfathered in and given the opportunity to share why the standard was written the way it was back in the day. This was a special treat for me.

Over the next two and a half days, I had the opportunity to connect with old friends and meet new friends. I found so many familiar names in the program: Spencer, Bernstein, Mosier, Orton, Boone, Buchholz, Williams, Zenger. I expect these are the heavy hitters to the next generation.

On the last day of the ICC meeting, Tom invited me to join a panel session to review the impact of new technologies and trends that are impacting the future of ICC and our industry. I shared the progress of research now being performed on the graphene and carbon nanotube conductors that one day could replace the copper and aluminum of today. Tom mentioned institutional issues including the retirement of the baby boom generation and business issues such as the pressure of distributed generation on today's regulatory models.

We have our opportunities and challenges. In short, our industry is in flux today, just as it was when I got my start in the early 1970s. The "next generation" will find as many ways to make their mark on the industry as we did when we joined the profession. But don't stay on the sidelines. Go ahead, dive in, fall in love and make a difference.

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