



THE ACADEMY OF ELECTRICAL CONTRACTING

PAPER PRESENTED BY FELLOW
RUSSELL J. ALESSI ('03)

Seeing the Forest through the Trees
By using ELECTRI International Information

JUNE 2012

As a research foundation, we face a variety of challenges in achieving and communicating our mission. For example:

- Securing enough money and resources to accomplish a solid agenda
- Creating effective processes for conducting research and programs
- Articulating critical ideas in order to turn them into valuable research and programs
- Moving away from reactive thinking and toward focusing ahead five to fifteen years in order to give EC companies the opportunity and means to create a vision and shape their future

Despite all of these valid and important challenges, the most significant challenge for ELECTRI International is to have our products and research not only used but also recognized when they are being used.

The purpose of this paper is to shed some light on the availability of ELECTRI information, to discuss how these products can be accessed and implemented, and to define how ELECTRI products are helping to shape and focus the big picture of the electrical construction industry.

Creating a Body of Knowledge

The mission of ELECTRI International as established by the ELECTRI Council is:

“To use its resources to commission and disseminate collaborative and innovative research, education, and technology solutions that advance the future growth and prosperity of the electrical construction industry.”

The belief behind that statement – one that has been proven throughout ELECTRI’s more than two decades of fueling research – is that by creating a body of knowledge by funding research, we can help electrical contractors stay on the cutting edge of processes and practices in our industry.

One of the most important concepts to understand about the Foundation is that not all research projects will be considered equally important by all electrical contractors, manufacturers, distributors or industry allies. For example, many contractors might value research on comparing separate and prime contracts or the economic impact of portability or project labor agreements. Others with different business models or from different geographic areas may not see the value of investing in these topics.

Therefore, a research product in itself is not always immediately valuable to the entire audience. However, each project is valuable because each adds information to the overall body of knowledge that helps to improve the industry as a whole.

As the saying goes, “A rising tide floats all the boats.”

Managing and Supporting ELECTRI Projects

ELECTRI does more than simply selecting projects and sending checks. In order to ensure the best possible research outcomes, we also maintain contact with researchers and contribute the expertise of our Council, members and allies.

For example, each research project funded by ELECTRI International has a Task Force that includes ELECTRI Council members and others with EC industry expertise - from contractors to manufacturers and distributors. They provide their industry experience and expertise as a resource to the researcher.

This close interaction among researchers and Task Force members helps increase the quality and relevance of the individual research projects and helps bridge the gap between academia and industry by building relationships of trust and mutual understanding. Both practitioners and academics benefit from the cross-fertilization and welcome the unique opportunity to focus the research on specific problems of interest to the EC industry.

Additionally, as part of the research process, each ELECTRI study must deliver regular progress reports, either as a written update or as an in-person presentation at an ELECTRI Council meeting. The reports help researchers and the ELECTRI Council to evaluate the progress of each study and to ensure that the work accomplished matches the research project's initial objectives and deliverables.

Finally, ELECTRI invites researchers to conduct workshops before ELECTRI Council meetings throughout the year. These workshops give Council members the opportunity to learn more about the research projects they have selected for funding and to focus on specific problems of interest to their work. Often, new aspects of a research topic emerge from this direct interaction between researchers and Council members and can lead to expanded research that takes solutions farther than initially anticipated.

ELECTRI in Academia and Abroad

In working with the university community, we have found that funding and supporting research not only benefits EC companies, but also provides teaching materials that are then used to train the next generation of researchers and academics who will lead the next round of innovations.

ELECTRI researchers and consultants become industry experts in the many areas in which their detailed research identifies new approaches and operational processes. In addition to delivering the information through the Management Education Institute (MEI), these researchers become valued consultants who help implement change within cutting-edge EC companies. The experience and the understanding that researchers gain through their involvement with the electrical contracting industry as ELECTRI researchers and/or as consultants is then carried back into college and university classroom programs.

For example, one popular researcher reported to ELECTRI that over the past 15 years, he has created and conducted ten seminars based on his ELECTRI research which he then delivered through MEI. As a

result, he reports having trained approximately 10,000 individuals employed by NECA companies. This researcher also reports publishing over 100 academic technical papers based on ELECTRI research during this same 15-year timeframe.

ELECTRI supports this mutually-beneficial cycle of learning and innovation within academia through:

- Commissioning investigative work
- Contributing the insight and experience provided by ELECTRI Council members
- NECA Student Chapters
- Student learning projects such as the *Green Energy Challenge* and *Student Passport Program*
- Making ELECTRI research available to professors who then use the studies in their construction and engineering curricula. A University of Houston researcher who recently received a grant from ELECTRI downloaded 15 different research reports to use as part of his course curriculum background knowledge.

ELECTRI also funds a program to support younger academics in which projects that can be completed more quickly and with a smaller financial investment provides working experience while getting students engaged with the Foundation earlier in their careers. In July 2011, the ELECTRI Council selected two new projects: a study on service as a core of business excellence at Virginia Tech and a study on succession planning at Arizona State.

Often, a research project funded by ELECTRI parallels work being conducted by a NECA committee or task force. In such cases, the researcher becomes an important part of the NECA task force, sharing knowledge uncovered during the research and gaining insight from the task force perspective. Over the years, this collaborative model has been frequently implemented in new market areas such as VDV integration among electrical contractors, sustainability, energy efficiency, and energy audit education.

The integration of ELECTRI's Research, Education and International Centers has dramatically enhanced NECA's international reach. For example:

- The *Student Passport Program*, originally designed in the Research Center, is an international student learning and volunteering experience, focused so far on Central America. It is part of ELECTRI's annual Cross Border Meeting.
- Our 5th Annual *Green Energy Challenge* in 2013 may include student teams from schools in Mexico. NECA member contractors and Chapters in Mexico will participate as judges.
- ELECTRI Research has been used in European & Latin American meetings and in research conducted at international universities. An ELECTRI paper on Energy Security was delivered in Greece in 2005; a student in the Netherlands used our productivity information for his dissertation.
- An ELECTRI researcher from Wisconsin used the Foundation's Productivity and Change Order research as the basis for an \$850 million claim pertaining to construction of the Copenhagen Metro. ELECTRI research has also attracted more than \$2 million in matching funds for projects from organizations such as the Construction Industry Institute, The Mechanical Contracting Foundation (MCAA), the New Horizons Foundation (SMACNA) and the National Association of Electrical Distributors Foundation.

Making ELECTRI Products Available

ELECTRI International has made a commitment to disseminate the outcome of each Foundation-funded research project to as broad an audience as possible by publishing and distributing reports for free or at a nominal charge. But the useful lifecycle of an ELECTRI research study does not end with its publication date. In many cases, the studies are transformed and re-energized in various ways, such as articles in academic journals, workshops/seminars, university classroom programs, consultancy services, etc.

The outreach list is long and we are constantly working on extending our network and increasing the influence of ELECTRI products by means including:

1. ELECTRI Website – www.electri.org

ELECTRI is currently re-designing our website to improve and modernize our public appearance and to better meet the needs of our contributors, researchers and anyone looking for current scientific reports about trends, technical improvements, safety, productivity and many other topics relevant to the EC industry. The new website will highlight all research projects funded and published by ELECTRI since 1992, and will be linked to the NECA bookstore.

The ELECTRI website will offer comprehensive search functionality so that users can access research reports by keywords, title, author, or research institution. We anticipate launching the new website by July 2012.

2. NECA Electronic Bookstore

The one-stop-shop for every available ELECTRI International research publication is NECA's Electronic Bookstore (<http://www.necanet.org/publications>). Most reports are available as a printed copy for a nominal charge and as a PDF download. NECA members may download all ELECTRI publications at no charge.

3. ELECTRI Knowledge Network (EKN)

The Network was developed in cooperation with Penn State University as a prototype project to help with the dissemination of ELECTRI productivity research. At this time, the EKN includes about 30 studies focusing on productivity in electrical construction. ELECTRI will have a link to the EKN and all of the projects will be part of the ELECTRI website so that users can easily access this tool. <http://www.electri.org/ekn>

4. Management Education Institute Seminars

As ELECTRI research projects are completed and published, the content is developed into educational programs available to the EC industry through NECA's Management Education Institute (<http://www.necanet.org/education/mei>). The MEI curriculum focuses on the business, technical, and project management disciplines that are essential to success in our industry. This curriculum comprises a sequential learning series that addresses the needs of electrical contracting managers, beginning with their early roles as supervisors and continuing through their tenure as decision-making executives with corporate responsibilities.

Many NECA Chapters want to deliver ELECTRI research findings, as offered by MEI, directly to their members. All NECA Chapters have the opportunity to participate in the annual Wendt Scholarship program that subsidizes the cost of bringing industry experts directly to the Chapter and its members.

The numbers are impressive:

- ELECTRI research projects constitute over 30 % of MEI's current educational program.
- 33 MEI programs come straight from ELECTRI research.
- More than 25,000 students have completed the three levels of the ESP program since it began in 2000.
- More than 450 people have taken the ESP Instructor Training Program.
- Over the last two years, the Facilities Energy Audit program has offered 22 classes and reached 429 students.
- In 2012, 20 chapters received Wendt Scholarships offered through ELECTRI to bring industry educational seminars directly to their members.
- 333 executives have completed the Executive Management Institute since 2002.

5. Convention Workshops/Seminars

ELECTRI researchers are frequently invited to the annual NECA Convention to discuss their projects or to run workshops/seminars based on their research findings. It is not unheard of for NECA members to then hire these researchers as consultants for their companies.

6. Webinars

Webinars are electronic seminars during which a moderator presents information to all participants via the computer in an online meeting. Electrical contractor attendees benefit from this format because it allows them to learn about topics relevant to their work without having to spend time and money traveling to a program. This is a newer delivery mechanism for the Foundation.

ELECTRI uses webinars mainly to promote and disseminate research studies that have a practical impact on the EC industry. For example, the NECA Safety Director and an ELECTRI researcher from the University of Colorado recently delivered a webinar for line contractors.

7. Industry Publications

Electrical Contractor Magazine, which serves the entire electrical contracting industry, is an excellent way to transfer ELECTRI information to the industry. Executives from the magazine attend ELECTRI Council meetings to find new ideas, market trends and talented researchers as potential topics and authors for article series in the magazine.

*** **

Taken together, all of these activities demonstrate how engaged NECA members and industry partners are with our Foundation. ELECTRI progress is outstanding. Our programs are innovative and strong. We take every opportunity to engage contractors, chapters and partners in our work.

Building a strong body of useful knowledge is our investment in industry excellence.

Russell J. Alessi is the President of ELECTRI International - The Foundation for Electrical Construction, Bethesda, Maryland. Alessi is also Executive Director of International Development, an international liaison assignment for NECA and served as Secretary of the Academy from 1993 to 2009. He was inducted as a member of the Academy in 2003. In 1993, Alessi was awarded the Westin International Fellowship Award to study quality management among electrical contracting associations worldwide. Alessi was the Assistant Executive Vice President of the National Association of Plumbing-Heating-Cooling Contractors (1984-1990) and the Executive Vice President of the NAPHCC Educational Foundation (1986-1990) in Falls Church, Virginia.

Academy of Electrical Contracting * 3 Bethesda Metro Center * Suite 1100 * Bethesda, MD 20814
301-215-4528 * mike.thompson@necanet.org