

Safety and sustainability transformed

PEARL conference attendees find confidence to move the electrical industry forward

By Samah Assad,
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CLEVELAND—Some are plant managers, others are exhibitors. Some hold the title of switchgear-selling vice presidents, others technicians leading the industry in testing equipment.

No matter the industry segment and expertise—whether it be switchgear or redistributed breakers—and despite the title, company, or location printed onto the name tags of the approximately 145 people who attended PEARL's 2015 Safety, Reliability, and Sustainability Conference, all converged on the conference grounds with one crucial, common goal: to learn how the electrical industry is transforming in the realms of safety and sustainability, and thus, improve the business as a whole.

PEARL is short for the Professional Electrical Apparatus Recyclers League, a trade association in Aurora, Colo., that represents companies that buy and sell surplus and remanufactured electrical equipment.

For many, the four-day conference, which was hosted at Hyatt Regency Cleveland at The Arcade April 24-27, did not disappoint. Instead, keynote speakers, plant tours, and training courses left attendees invigorated and excited to apply what they learned to their own businesses once the conference came to a close.

Transforming safety

As electrical safety standards continue to evolve, electrical businesses, their products, and employee safety requirements must follow suit.

This idea was the forefront of engaging discussions put on before attendees by two keynote speakers: Shermco Industries, Inc., training director Jim White and Eaton engineer Thomas Domitrovich

White underscored misconceptions surrounding NFPA 70E requirements and how some stakeholders in the industry may believe they are not subject to these guidelines.

"A lot of people don't consider that it applies to them because they don't have people in the field doing electrical work," White said. But, according



Attendees at the recent PEARL conference in Cleveland, representing all facets in the sales of reconditioned and surplus electrical apparatus, found time for a group photo.

to White, if a business has any employees or contractors doing some sort of electrical work, even building maintenance, service calls, or working with any piece of equipment that is at least 50 volts, they are held responsible and must have the correct safety equipment to reduce the risk of injury or other safety concerns.

"If you think you can bring in a contractor to avoid responsibility, think again," White said. "You have to qualify any contractor that comes in."

These safety standards also come with change in Occupational Safety and Health Administration (OSHA) reporting requirements, which White said have changed drastically. He explained that OSHA formerly required that businesses report a "catastrophe," which is defined as three people going to the hospital for a work-related injury or fatality.

Now, if an employee is merely admitted into a hospital or has any type of amputation—whether it be deemed something of large or small scale by the employer—it must be reported to OSHA within 24 hours of the incident. "You can't avoid responsibility if somebody gets injured," White emphasized.

Research shows that about 10 years ago, one person died in an electrical fa-

tality per day. Although the fatality rate by electrical shock has dropped since then, recent data reveals slips, trips, and falls remain the No. 1 cause of death in the workplace, with construction workers making up the largest percentage of fatalities.

But you have to "buy into it to believe it," White noted, reiterating that employees must "buy into" the importance of safety to be sure actions follow.

"Beliefs drive behaviors. How you think about safety determines how you're going to act," he said. "Somebody can come up to you and preach safety and it means nada, unless you buy into it."

White shared stories of electrical workers involved in line accidents and electrical arc flashes. Some were fatal, and others required limb amputation, causing the lives of those involved to be an every day struggle, while impacting them and their families forever.

Angie Rosenfield, office manager for Romac in Los Angeles, said she was still shaken after White showed a video of a man who suffered life-changing injuries from an electrical accident. She said she's known employees in the electrical industry who've suffered similar—and even fatal—experiences.

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Jim White

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“It was very powerful, and it hit really close to home, because I’ve had friends die from arc flash,” said Rosenfield, who has attended the conference since its beginning 18 years ago with her family on behalf of their business. “It really makes you want to go back to your shop and make sure all our guys have the proper gear on. We don’t take chances, you don’t want to take chances, especially when you’re working on something so powerful.”

Instances like these call for additional changes and specifications in NFPA 70E standards, especially when protecting employees.

This includes standards on flame-resistant arc-rated clothing, personal protective equipment, equipment labeling, and work permit changes. Rather than just meet minimum requirements, as White said it was viewed in the past, it’s important the requirements are exceeded for NFPA 70E. While additional standards can be viewed on OSHA’s Web site, one of the main items White highlighted was what he considers a misunderstanding by some about the phrase “normal operation,” calling for urgent need for specification and changes on the standard’s wording.

“Normal operation,” he said, refers to operating equipment in the manner specified by the manufacturer. Racking circuit breakers, or inserting and removing remote control center buckets, do not align with this goal and in turn can increase the risk of injury. Electrical workers must properly install and maintain equipment to ensure there is no evidence of pending failure.

“Interacting with equipment in a manner that can cause failure is not normal

operation,” he said. “Normal operation is, however, [how] the manufacturer tells you to operate the equipment.”

Clearing time, reducing incidents

Thomas Domitrovich, who has been with Eaton for around 20 years and comes with an extensive background in breakers and fuses, piggybacked on White’s statements and dove deeper into code requirements in the industry in terms of circuit protection and arc flash reduction.

One of the largest factors of reducing arc flash, he said, revolves around the core idea of time—specifically, reducing clearing time for currents. The time in which the arc current flows must be cut down in order to reduce incident energy, and thus, clearing time as well.

“When you’re working on electrical equipment, time is not on your side when an arc flash event occurs,” Domitrovich stressed. “So the goal of the game is to remove the arc current, open the circuit as quickly as you can, and reduce the incident energy.”

Domitrovich highlighted specific methods that would best reduce incident energy and time, so as to reduce the risk of injury to both employees and equipment.

One method, termed “zone selective interlocking,” occurs through communication between circuit breakers. This method acts to reduce trip times and helps reduce arc flash energy. Here, in one case, both breakers see the fault, and the upstream breaker waits as designed. In a second case, only the upstream breaker sees the fault and the trip occurs as quickly as possible.

Another method Domitrovich discussed was the “energy reducing main-

tenance switch,” which manually/automatically enables an instantaneous pickup and reduces arc energy to downstream equipment and personnel. This limits energy during maintenance.

Domitrovich shared success stories of these and other methods, where arc flashes may have caused a plant to shut down, but the plant’s decision to pre-plan and follow NFPA 70E requirements led to minimal damage, no injuries, no loss of lives or equipment, and quick re-energizing.

During a question-and-answer session after his talk, Domitrovich said that if an employee believes he or she is witnessing another employee taking unsafe action in an electrical setting, he or she should speak up.

“And you never know, you may save a life that way,” he said, noting the importance of all members of the industry—no matter what their background or whether or not they are competitors—coming together to discuss and learn about the importance of safety in the workplace.

“We may compete with each other in the marketplace, we may go head to head, we may have disagreements—fundamental disagreements—on certain things, but we’re all in the same litter box,” Domitrovich concluded. “So we’ve got to help increase electrical safety across the country. That’s one common thing.”

Building and fostering relationships

This was Steve Moffett’s first year attending the PEARL sustainability conference. Moffett, general manager of Lubbock Electric Co., said it was a great place to meet new, important contacts and build his network for business.

“We’re more geared toward electric motor and generator repair,” he said of Lubbock, “while [this event] is more into the switchgear and electrical controls. We do both at Lubbock, so I know virtually every player in the electric business, but I hardly know any of these guys,” said Moffett, who added that although he is not a member of PEARL, the events spurred him to contemplate the possibility of joining to reap the benefits.



Thomas Domitrovich



Attendees applaud the presentation of Thomas Domitrovich, who spoke about code requirements and described methods of reducing the chance of arc flash.



Steve Moffett views equipment at National Power Equipment, Inc.

Facility tours provide an opportunity to observe operations and put faces to names



Conference attendees walk the storage and inventory areas of North American Switchgear, one of three companies that hosted site tours during the PEARL conference.

Those who attended the PEARL conference's plant tours had the opportunity not only to see the equipment first-hand but to put a face to a name among sellers and buyers to build trust among those in the industry.

Ken Prince, owner of Cleveland-based National Power Equipment—one of three plants that opened its garage and storage rooms for attendees to peruse—acknowledged that buyers of electrical equipment may question why and how they can trust redistributed or reconstructed parts.

Kickstarted in 1994, his company has around 20,000 square feet of floor space dedicated to switchgear alone, with somewhere between 3,000 circuit breakers in stock at that location. However, the wealth of benefits that follows the usage of these parts by electrical companies can prove to be efficient and sustainable for buyers, he said.

With shop areas storing and rebuilding breakers, National Power Equipment happens to carry some examples of breakers that date back to the 1940s. But Prince explained there are many older pieces of equipment that are not manufactured today, and this becomes a challenge many businesses face when equipment breaks down on a production line and the product has been discontinued.

But he said businesses that are PEARL members build reputations within the electrical community by following standards to rebuild products that can be used in place of the former equipment.

This is where the trust between buyers and sellers of redistributed parts strengthens.

"A lot of it is reputation and a lot of that is what PEARL is all about—we're developing standards and making sure everybody follows them," Prince said.

Redistributed parts also become crucial if a piece of a breaker, such as a plastic mold-

ing, breaks but replacing the entire breaker would be expensive and time-consuming.

"It's a time saver more than anything else. Most of what we do is time-oriented; it's not so much if it's available. It's getting it to people when they need it."

Attendees had the chance to walk North American Switchgear's two locations, including its storage areas, which span around 300,000 square feet and contain thousands of parts

National Power Equipment Plant Manager David Oravek agreed with his colleague. "When somebody's down, they're down," he said. "And we do what we have to do to get them back up."

Oravek added that consistency with companies' personal standards aligning with PEARL's requirements has increased the reliability of redistributed products, especially with higher focus and improvement in testing and documentation. He said all equipment at National Power Equipment must be as clean and thoroughly tested "as it can possibly be." They test the equipment to confirm it can be reconditioned by tearing it down to the smallest component possible, and completing new plating and hardware.

"Everybody's starting to use the same standards and do the same tests, and it's working out well as long as everything's documented. It seems to work. We feel that everything possible is being done to make equipment reliable again," he said.

Kristen Habeeb, vice president of North American Switchgear as well as a past PEARL president and board member,

agreed that building a credible reputation comes with exceptional testing, such as testing insulation and resistance of products.

This work ends up benefiting buyers in two ways: from an efficiency standpoint, and in their pockets.

"Replacing all of your switchgear could cost millions of dollars and a lot of downtime. Environmentally, we didn't have to remake this whole product . . . so it's more green," she said. "It's definitely better than putting it in a landfill."

Attendees had the chance to walk through North American Switchgear's two locations, including its storage areas, which span about 300,000 square feet and contain thousands of parts.

Derek Bray, a business development manager for Indiana-based Select Equipment Co., attended the tour and agreed that the standards put in place by all of the 80 members in PEARL ensure equipment is safer for buyers.

"They're really pushing to safety and better reconditioning," said Bray, who attended PEARL's sustainability conference for the second year. "[This] means a safer product that goes out to the customer."

Many attendees and plant managers at the conference seemed to come to a common ground on what may be boosting this much-needed trust between buyer and supplier over time. Some said that one of the most groundbreaking changes they've seen transform the industry stems from the Internet and digital methods of communication. These strategies have made doing business easier and serving customers more efficient.

"Back when I first started [in 1994], you'd be talking to someone from another state about a certain part on an old breaker, and we'd literally take Polaroid pictures and FedEx them to the guys," Prince laughed. "With digital photography and everything else, it's instantaneous."

Colleague and plant manager Oravek recalled similar days in the business, when he and his fellow employees faxed or air-freighted photos back and forth. "Now, we can get people answers in minutes instead of days," he said. "So the Internet has really helped everybody along in that respect."—SA



Steve Estep (right), breaker technician with National Power Equipment, discusses the company's breaker inventory with conference attendees.

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“I’ve already met three good contacts on some equipment, and I don’t even feel like we’ve gotten into the real convention yet,” Moffett said Saturday prior to the Sunday trade show. “The industry really is small enough that we’ve got to keep going back to the same people over and over to buy. It tends to be really long-term relationships.”

“The only sustainability for a company is take care of your customers and give them good products,” he added.

Ken Prince, owner of National Power Equipment, is glad that conference attendees were able to tour the shop area where they build breakers, as well as witness the types of products National Power Equipment stocks. (See sidebar on the preceding page about the tours.) He noted that there is a long-lasting impact that stems from electrical industry leaders and members attending the tours—an impact that he said lasts long after the events are over.

“A lot of these people are people I’ve done business with for 20, 30 years and never met face-to-face,” he said. “Everybody has preconceived notions, and it’s just nice for people to see the place and see what we actually have and what we can do.” Conference attendees also toured Utility Relay Co. and North American Switchgear.

As attendees had the opportunity to get close and interact with products and plant managers in both training courses and tours, some said they appreciated the opportunity to connect, build relationships, and foster open communication in the industry. Others even added they believe this will naturally improve the industry over time.

AEMC Instruments, a global company that specializes in electrical test equipment, was one of many exhibitors that put its products on display at the conference as attendees mingled and networked to learn more about electrical products.

With this being AEMC’s first time as an exhibitor at this event, the company’s mid-Atlantic sales manager and engineer Mark Gutekunst said the event allowed him to communicate with frequent buyers of their manufacturing and testing equipment, paving the way for improved communication in business.

“It’s a nice show because it puts us back in contact—or touches, if you will—with existing customers, and also new ones,” he said. “When they come, they get to see what we do and talk about their applications, so it’s a good show.”



North American Switchgear’s Kristen Habeeb (right), along with other conference attendees, participates in a “Name Your Part” contest during the National Power Equipment tour.

Moving the industry forward

Along with the networking benefits, North American Switchgear vice president Kristen Habeeb said she enjoyed not only having people tour her plant, but also the opportunity to tour other companies’ plants to see what they have in stock, and to share ideas.

“There’s a lot of business out there—it’s silly not to be friendly competitors,” she said. “I think for everybody here connecting with the sales people and the owners of all these different companies, it’s tremendous to have a good working relationship with everybody.”

“Now everyone’s got their own niche, but it’s great to see what other people are doing,” Bray agreed. “They might be doing something different than you’re doing, and it really helps move the industry forward. When there’s more trust—between people, business is easier to do, and that’s what PEARL does. It gives you an idea of how to make your company better—seeing how someone else is doing it, it really helps you as a business owner, as someone who’s high up in your company, and make better decisions.”

A fresh lens for transformation

Habeeb pointed out what she believed were the key takeaways of the conference’s training courses: providing electrical industry employees with experience in areas they may not have otherwise dabbled in, and offering a fresh lens for viewing the business and their roles in the industry.

For instance, some of the courses took a deep dive into the working operations of circuit breakers and electrical operators. Habeeb took a utility relay course

herself and walked away with more information than she walked in with.

“It’s going to be a big benefit to the trainees who are coming, because a lot of these guys—they don’t work with this large equipment, but they do come across it from time to time,” she said. “Most people are in a service shop—they never see the switchgear or the factory or anything like that.”

All in for transformation

Conference organizer Andrew Van Wasshnova said next year’s event, which will be PEARL’s 18th annual of this kind, is expected to take place in Austin, Tex., with a date to be determined.

But before they think about next year’s events, attendees are still marveling at what they gained this year.

Whether it be a sales manager or an exhibitor, a technical assistant or a plant manager, hands were shaken, knowledge was gained, and relationships were fostered to help continue to build an invigorated electrical industry.

And despite any differences in attendees’ expertise or specializations, no matter what state their businesses are based or the products they sell, many of those who attended PEARL’s 2015 Safety, Reliability, and Sustainability Conference left the weekend with a strengthened confidence in the industry’s evolution, and how they can play a part in its transformation over time.

“As long as the group continues to strengthen, the electrical industry is going to be stronger as a whole, because there’s going to be a better product to put out there,” Habeeb said. “It’s a very special business.”

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