

NECA and IBEW Launch Net Zero Plus Initiative To Transform Southern California

Walk into the Net Zero Plus Electric Training Institute and expect the Los Angeles-area facility to come alive. That's by design because, as leaders in the electrical contracting industry have described it, it serves as a paradigm-shifting, living laboratory and demonstration center.

It's no secret that California has taken the lead when it comes to the country's evolution toward a more sustainable future through renewable energy generation, battery storage, and emerging energy-efficiency technologies. What's also being noticed? A variety of forward-thinking organizations—including the National Electrical Contractors Association—are playing a central role.

At the center of this change is the International Brotherhood of Electrical Workers Local 11 and the Los Angeles Chapter of the National Electrical Contractors Association's Net Zero Plus initiative, which is transforming existing and new buildings into high-performance and net zero buildings, meaning they can produce more energy that they use.

One of those buildings is the Net Zero Plus (NZP) Electrical Training Institute (ETI) in greater Los Angeles—a facility that provides industry-leading training to more than 6,000 apprentice and journeymen electricians every year. The facility is being retrofitted to become a net zero building, and, when completed, it will become the largest net zero commercial retrofit in Southern California and the second largest in North America. The facility will feature advanced and emerging clean energy and efficiency technologies. It will earn the International Living Futures Institute's net zero certification and will be a verified net zero building by the New Buildings Institute.

Brett Moss, the facility's training director, pointed to a unique and exciting relationship between labor and management, which allows this program to be a leader in the region and the country.

"We have leadership that has vision," Moss said. "They understand you can't be playing catch-up. You have to be out front."

The facility's key technological and architectural components include a utility scale microgrid; a utility scale battery energy storage system; a 500 kW rooftop and parking shade structure PV solar array; 144,000 square feet of LED lighting; 2,700 square feet of DC lighting; interactive dashboards with real time building performance data; electrochromic glass; high efficiency heating and cooling systems; advanced lighting and mechanical control systems; electric vehicle charging stations; smart-grid and smart-meter labs; an advanced weather monitoring station; and a High Solar Reflective Index (SRI) roof. Dan Cohee of PDE Total Energy Solutions, the construction manager for the project and design-build electrical contractor for the microgrid, said the facility has the ability to provide critical loads of power during a power outage and serve as a community disaster recovery center for up to 72 hours. Educational dashboards will await guests at the entrance of the facility. Technology such as the microgrid will be present in other areas of the building.



Leaders from IBEW Local 11, LA/NECA, LA Department of Water and Power, and PDE Total Energy Solutions among others at the groundbreaking ceremony of the net zero retrofit of the NZP ETI in June 2015.

"Everything was designed looking forward to the future," Cohee said.

The Net Zero Plus Electric Training Institute provides a cutting-edge curriculum on these technologies, training more than 6,000 men and women annually for careers in the electrical industry.

Along with the opportunity for community engagement for collaborative participation in the coming energy revolution, project organizers said net zero plus strategies incorporate grid reliability; energy security; comprehensive energy storage solutions; advanced building controls; renewable energy technologies; reduced environmental impacts; natural disaster and emergency response solutions; reduced operating costs; comprehensive energy insight and analytics; scalable solutions for high performance and net zero energy buildings; and multiple financing options and resources.

Along with PDE Total Energy Solutions, members of the project team include O'Bryant Electric, Western Allied Mechanical, Environmental Building Strategies and Simon-Glover Architects. The size of the facility is 142,000 square feet with an estimated project cost of \$15.5 million.

Gary Leder, project manager at O'Bryant Electric, said among the projected building retrofit outcomes are a 51 percent reduction in total electricity usage and an annual reduction of 28.9 metric tons of CO₂. That includes an average generation of 185,500 kWh/yr more energy than is consumed with a 46 percent reduction in lighting consumption, a 63 percent reduction in heating consumption and a 60 percent reduction in cooling consumption. The facility will become a resource for architects, developers, and building owners and managers to learn about the integration of net zero technologies and strategies.

IBEW Local 11 and LA/NECA, the owners of the facility, have launched this project, expected to take about nine months, as part of a set of comprehensive strategies transforming the way buildings use, produce, store, and monitor energy. IBEW Local 11 and LA/NECA are working collaboratively with developers, municipalities, architects, manufacturers, and building owners/managers on the integration of net zero technologies and strategies.



An apprentice at the NZP ETI training in the design and planning of a rooftop PV solar array.

The training component is critical to the facility's mission, Moss said.

"This is why we exist," Moss said "These projects truly represent the future of our industry. We're looking to conserve resources and save money. These projects do that, and my contractors have to know about the technology and the background behind it."

Moss said the building retrofit ties together a lot of technology that's out there but doesn't exist in one place.

"We will continue to develop curriculum based on this," Moss said, adding that the microgrid technology is part of that curriculum. "The entire building is a living laboratory and demonstration center," Moss said. "It will continue to evolve."

The Net Zero Plus Electric Training Institute has about 80 instructors, and Moss said the thousands of students who go through the facility every year recognize this is the future of the industry. "The students energize my staff," he added.

The grand opening of the Net Zero Plus Electric Training Institute is scheduled for April 21 in Commerce, CA. Jim Willson, executive director of the Los Angeles chapter of NECA, said organizers will be expecting a wide spectrum of leaders from electrical, environmental and business communities. They've also been reaching out to associations and academia as well as representatives at the grassroots level such as inspectors. "It's a roadmap to the future," Willson said.

The media is paying attention to the progress being made renewable energy generation as well. *Building Below Zero*, a one-hour independent PBS documentary that features Net Zero Plus, is in production.

The show will highlight rapid changes in the building and electrical industries and the need for more efficient and intelligent buildings that reduce environmental impacts, lower electricity costs and provide energy security. It will feature commentary from government, business, labor and environmental leaders. It is slated to premiere with a Southern California broadcast in April and a subsequent national broadcast.

Moss praised the vision and leadership of the area's contractors, chapter, local unions in embracing the project.

"Without them, none of this happens," Moss said. "It's important that everyone gets on the same page, and education is what drives that."



PHOTOS COURTESY OF NET ZERO PLUS ELECTRICAL TRAINING INSTITUTE

NECA Safety Awards Program Recognizes Excellence in Member Companies

Safe and sound productivity in electrical construction is the objective in the electrical business. NECA's Safety Excellence and Zero Injury Awards program is an elite and growing safety recognition program focused on recognizing thriving companies that excel in multiple areas of their safety and health programs.

Awards are presented to member companies that consistently have OSHA-recordable injury and fatality rates at levels lower than industry standard and implement internal company safety practices above and beyond basic compliance.

The Zero-Injury Award recognizes those member companies that have worked a full calendar year without recordable incidents.

The Safety Excellence Award is the NECA's premier recognition program and acknowledges member-contractors safety performance. Winners are selected based on their comparison to BLS data and electrical contractors. This award considers the following man-hour categories:

- 1 to 25,000 man-hours
- 25,001 to 50,000 man-hours
- 50,001 to 100,000 man-hours
- 100,001 to 150,000 man hours
- over 150,001 man-hours

There are four parts to the award selection criteria: incident rates (recordable cases, lost workdays, non-fatal cases without lost workdays, fatalities), experience modification rate (EMR), OSHA citations, operations and best practices. Frequency and

severity ratings are important, but the rates will not be the sole source for determining winners.

"Members are increasingly experiencing the importance of having a good safety program and the benefits that go along with it," NECA Safety Director Wesley L. Wheeler said. "The NECA Safety Awards demonstrate their commitment to safety for everyone to see: their employees, their customers and their fellow contractors."

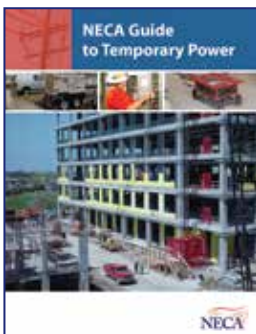
There were more than 130 Safety Excellence Award and 108 Zero Injury Award Winners recognized in 2015, representing a slight increase in participation and winners for the year. Awards will be sent directly to winning companies and they will be recognized at national, chapter and district meetings, including the NECA Safety Professionals Conference.

Applications must be received by February 26, 2016—only one application submission is required for both awards. Finalists will be selected after an evaluation of applications on March 18. NECA will notify award recipients by April 4, and awards and letters will be distributed by June 6.

For more information on NECA's Safety Awards Program, go to www.necanet.org.

NECA Temporary Power Guide Helps Contractors Get it Right

Temporary wiring is often treated as an afterthought—after all, "it's only temporary." But temporary power is not an *anything goes* situation. Whether electrical workers are handling temporary or permanent wiring, safe work practices are required.



Energized electrical systems and circuits, even if only temporary, present hazards for electrical workers and others in construction. Safe work practices should always be applied when working on temporary wiring. Electrical contractors are usually responsible for installing the permanent wiring during construction. In addition, construction projects

require temporary electrical wiring that must be installed and used by all the trades during the construction of buildings or structures. Temporary installations are often viewed as being less dangerous than permanent electrical installations, but temporary electrical wiring on projects should be treated no differently than permanent electrical wiring with regard to the workmanship, wiring methods, and safe work practices.

Temporary wiring must meet the requirements of the NEC, and be installed and maintained by qualified contractors and workers that understand effective application of safe work practices in compliance with industry standards. Article 590

of the NEC provides minimum requirements for installing temporary electrical power and lighting. NFPA 70E, *Standard for Electrical Safety in the Workplace* provides the requirements for electrical workplace safety.

NECA is proud to announce that it has just published the *NECA Guide to Temporary Power*. This new publication provides essential resources for electrical contractors to help them get it right when it comes to temporary power responsibilities. This new guide is organized in an easy-to-read format and includes links to valuable resources that assist in attaining compliance and safety of temporary power systems. The guide contains essentials such as how to effectively plan the installation, how to prefabricate where practical, and how to implement safe work practices when handling temporary wiring, designs, OSHA compliance, and more. Along with the extensive resources, this product provides access to all Letters of Interpretation from OSHA relative to temporary installations. This new guide is a must for all electrical contractors that have to design, install, maintain, and remove temporary power systems. Get your copy today.

The *NECA Guide to Temporary Power* is available at www.necanet.org/store.