

# APPRENTICESHIP

*Preserving institutional knowledge while  
growing the next generation of talent*



CALIFORNIA APPRENTICESHIP COUNCIL

*Third Quarter 2013*

## DIR GREETS THE NEW FISCAL YEAR WITH SUCCESSES & IMPROVEMENTS



Christine Baker, Director,  
Department of Industrial Relations

As we approach a new fiscal year, California's financial health looks much improved. This is good news for the state as a whole, and also for the Department of Industrial Relations; it will help us in our goal to make California the best state in which to work and live.

It's a fact of life that funding and resources change from time to time, and it was vital that DIR respond to the state's changing needs; as a result, some DIR offices have moved and consolidated, and that process continues.

One successful example is apprenticeship public works enforcement moving from The Division of Apprenticeship Standards (DAS) to the Division of Labor Standards Enforcement (DLSE). About a year ago, SB 1038 streamlined public works enforcement, bringing the apprentice prevailing wage and employment ratio under the jurisdiction of the DLSE, and allowing the investigators at DLSE to inspect both prevailing wage and apprenticeship within the same investigation. The apprenticeship programs themselves have played a pivotal role providing leads and partnering with DLSE to ensure all contractors abide by the law.

Since apprenticeship public works enforcement has been under DLSE, 528 complaints have been received and addressed, and nearly \$500,000 in penalties have been assessed for violation of Labor Code Section 1777.5, governing employment of apprentices on public works jobs.

Additionally, DLSE has assessed over \$273,000 in training fund contributions. Once a year, DAS distributes training fund grants to the apprenticeship programs, distributed the funds on a pro-rata basis depending on how many apprentices are participating in the program. These funds help continue the tradition of journeymen training apprentices, ensuring a skilled workforce to build California's infrastructure for years to come.

Recently Tidwell Concrete Construction was assessed \$16,000 in apprenticeship fines on a San Diego Community College project, and Icon Metal Works, Inc. was assessed \$28,700 on a project at U.C.L.A. An enforcement action against contractors working on the San Diego Hilton brought in training fund contributions totaling almost \$218,000, affecting over 2,000 workers.

California Labor Commissioner Su's passion for labor law enforcement has revitalized investigations in the Public Works Unit. This energy should encourage the apprenticeship community, since contractors will know that DLSE will vigorously enforce prevailing wage and apprenticeship laws.

DIR as a whole is doing very good work; if you read our news releases you'll see what DLSE, DOSH, DAS, LETF and all the other divisions, programs and boards are doing to protect and promote workers and

employers. Our IT team has worked diligently this past year to help DIR provide better service to the public through technology, implementing online services such as Entertainment Work Permits (temporary and 6-month), Public Works contract registration, elevator inspection tracking, and online payments for licensing, registration, and other fees. So far this year, we have already instituted online systems for EAMS lien fee collections, OSIP annual reports, electronic certified payroll submission for public works projects, and personnel position tracking.

Great customer service is our goal and our focus is on continuous improvement. Later this year, we'll introduce a telephone call center that will provide a more effective and efficient way for callers to get the DIR services and information they need. The improvement of our website for greater user access will continue as well.

The important efforts made throughout DIR are commendable, and I would like to thank all who have contributed. I am very proud of the work we at DIR have accomplished thus far, and am excited to see what the rest of 2013 holds in store.

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## APPRENTICES BUILDING CALIFORNIA'S ENERGY-EFFICIENT FUTURE



*Diane Ravnik, DAS Chief*

California leads the nation in adopting the highest energy efficiency standards in the country.

California's AB 32, the "California Global Warming Solutions Act of 2006" established greenhouse gas emissions reduction goals of 25 percent to be achieved by 2020. AB 758, the "California Comprehensive Energy Efficiency Program for Existing Residential and Nonresidential Building" passed in 2010, requires the State Energy Commission, California Public Utilities Commission (CPUC) and their stakeholders to develop a comprehensive program of energy efficiency in California's existing buildings.

In July 2012 Governor Jerry Brown signed landmark legislation authorizing the nation's first investment in high-speed rail, which the State Building and Construction Trades Council estimates will ultimately create some 160,000 construction jobs over the length of the project. And most recently, Proposition 39, the "California Clean Energy Jobs Act" created a \$1 billion yearly fund, approximately \$400 million of which is to be spent on energy-saving projects in the state's schools.

How will these ambitious energy efficiency goals and standards be achieved? By employing highly-skilled, apprenticeship-trained individuals to make it happen!

In January, 2010, the California Apprenticeship Council voted to require all crafts to add "green" components to their "Minimum Industry Training Criteria (MITC)" and in October of that year the CAC accepted revised MITCs with green components for 23 building and construction trades, many with multiple occupations. Each individual apprenticeship program has now modified their standards to include those "green" components and stands ready, willing and able to meet the challenges ahead to achieve the state's energy efficiency goals.

*How will these ambitious energy efficiency goals and standards be achieved? By employing highly-skilled, apprenticeship-trained individuals to make it happen!*

A study commissioned by the CPUC and produced by UC Berkeley's Don Vial Center on Employment & the Green Economy shows that achievement of these goals does not mean the creation of new "energy efficiency" occupations; rather the "California Workforce Education & Training Needs Assessment" author, Carol Zabin, concluded that, "Two-thirds of the direct jobs (in energy efficiency) are expected to be in the construction trades." Such work has already begun and examples are highlighted in this special "green" issue of the CAC Newsletter.

This issue's cover photo depicts the Alameda County IBEW-NECA's newly-

launched Zero Net Energy Training Center, where the current generation of electrical apprentices will receive state-of-the-art training and journeymen will continue to advance their skills. This new training center is one of only a handful of US Department of Energy-designated "zero net energy" buildings in the nation, and is the first achieved by retrofitting an existing commercial building.

The 392-megawatt Ivanpah Solar Electric Generating System is one of several solar plants highlighted in the article about the great opportunities available for operating engineers. When completed later this year, the project will be the world's largest concentrated solar thermal power plant. At the peak of construction, Bechtel Construction employed some 2000 construction workers at Ivanpah, including up to 400 apprentices daily in 12 different construction crafts. This project and others like it display the variety of opportunities available to apprentices in almost all construction trades, and demonstrates the pivotal role apprentices play in building California's energy-efficient future.



California Division of  
Apprenticeship Standards

The Division of Apprenticeship Standards (DAS) creates opportunities for Californians to gain employable lifetime skills and provides employers with a highly skilled and experienced workforce while strengthening California's economy.

[www.dir.ca.gov/das](http://www.dir.ca.gov/das)

## Letter from the CAC Chair

# APPRENTICES STEP INTO THE FUTURE WITH GREEN TECHNOLOGIES



Paul Von Berg, CAC 2013 Chair

When I was told the theme for this newsletter would be “green technology” I thought, How appropriate a subject for the apprenticeship community!

The word *technology* refers to the making, usage, and knowledge of tools, techniques, systems and methods of organization in order to solve a problem. Technology has affected our society in any number of ways, both good and bad. A few good ones include medical technology, information technology, manufacturing technology, construction technology, and on it goes. But what is this thing called “green technology”?

The good news is, green technologies involve environmentally-friendly functions like energy efficiency, renewable resources, safety and health. Green technology considers both the short-term and the long-term impact on the environment.

Green technologies are clean technologies and are good business; green technologies are sustainable; and green technol-

ogy is one of the fastest-growing industries in the country.

Among the many examples of green technologies are recycling, renewable energy, water purification, air purification, sewage treatment, environmental remediation, solid waste management, and energy conservation—to list just a few.

One of the best known examples of green technology is the solar cell. Through various technologies, solar cells convert sunlight into electrical energy. Generating electrical power with solar technologies means consuming less fossil fuels while reducing pollu-

*Let's work together to ensure that we train our apprentices and journeymen to become productive and qualified green workers.*

tion and greenhouse gas emissions. Solar energy can come from a small photovoltaic solar panel as well as large-scale concentrating solar plants. A solar thermal collector is designed to collect heat by absorbing sunlight. Depending on the location on earth and the orientation of the solar panel, the quantity of solar energy striking the earth is about 1,000 watts per square meter under clear skies.

Wind power, another green technology, has been used for centuries to power wind mills, and since wind is plentiful and dependable, modern wind farms convert the power of the wind into electrical energy around the world.

The solar and wind energy plants and other green technologies are the way of the future. These revolutionary technologies will take an important place in all aspects of our lives, from our daily routines in our homes to our place of work and our recreation activities.

This exciting new frontier combines the technological advances of our time with concern for our environment. The need for training our apprentices for green technology has never been more apparent. Whether we are training firemen, culinary workers, laborers or hairdressers, green technology will affect all these occupations.

In the construction trades alone, there are many new disciplines to master: Green Awareness, Photovoltaic, PVB Racking, Thermal Solar, SWPPP, Weatherization, Energy Auditor, Waste Diversion, GEO Thermal Energy, PVB Maintenance, and Maintenance Worker, to name just a few of the green jobs in a field that is quickly expanding.

Let's work together to ensure that we train our apprentices and journeymen to become productive and qualified green workers to face the challenges and opportunities these new technologies will present today and in the future.

To learn more about the California Apprenticeship Council, please visit [www.dir.ca.gov/cac/cac.html](http://www.dir.ca.gov/cac/cac.html)



# IBEW Celebrates Grand Opening of Innovative Training Center

## ZERO NET ENERGY TRAINING CENTER IS ENERGY CONSERVATION FIRST

Paul Burton, Editor, "The Journeyman"

The opening of IBEW Local 595's new Zero Net Energy Training Center was celebrated as a "game changer" for the electrical industry and an example of labor management cooperation. The union hosted a grand opening celebration at its ZNE Center in San Leandro May 30, featuring speeches and presentations by Governor Jerry Brown, Congresswoman Barbara Lee, State Senator Ellen Corbett, and other officials. IBEW Local 595 Business Manager Victor Uno thanked the union's Trustees and leaders and the National Electrical Contractors Association (NECA) for creating the center, which he said was a fulfillment of a vision for a new model of training. "We are proud to push the envelope in the areas of energy conservation efforts, renewable energy promotion, job creation, work-force training and labor-management cooperation," Uno said.

NECA's Northern California Chapter Executive Director Don Campbell told the diverse crowd of over 500 people, "This is the most important grand opening event I've been part of—it shows what labor-management cooperation can accomplish." Campbell told attendees that the center "utilized new technologies, advanced building designs and innovative construction methods to achieve a dramatic and unprecedented 75 percent reduction in energy use when compared to similar existing commercial buildings in the country. This energy savings lowers the ZNE Center's carbon footprint by 175 tons of

carbon dioxide per year—equal to the carbon emitted by 30 passenger vehicles annually as well as a savings of 500 barrels of oil each year." The project includes wind turbines and solar panels that produce 139 kilowatts of energy to offset the building's energy use.

"This remarkable facility is a shining real-world model for education and training," said By-

*"It is simple and elegantly designed and a great example of balance of innovation and functionality. This is the future."*

ron Benton, Training Director for Alameda County's JATC. "We are celebrating the realization of our collective vision for a more sustainable world where young men and women will be trained for good paying jobs and new economy careers." Benton noted that the ZNE Center is the only one of the 21 ZNE buildings in the U.S. that is a retrofit of an existing building. He said there are hundreds of thousands of existing buildings crying out for energy retrofits, and trained workers are needed for the projects.

Benton outlined some of the elements of the JATC apprenticeship program and said the ZNE Center would "Create the best trained, most skilled workers



Governor Jerry Brown and VIPs at ribbon-cutting ceremony

for the new economy of energy efficiency and renewable energy." He said the building's use of natural lighting and natural ventilation would not only reduce energy use but also create an enhanced learning environment.

Governor Brown said that while, "We live in Twitter time, we have to think long term." He said that building something new takes time but the model of the ZNE center can be replicated. "We can create millions of jobs or hundreds of millions of jobs around the world," he said. Brown said he wanted to push for more apprenticeship training where people can "work and earn instead of borrow and learn." He said, "The bold stuff is really important," and commented that his own forward thinking was "how I got the nickname." He joked that, "I'm not as far ahead as I used to be" and said he was trying to be mainstream. "This building is mainstream," Brown said. "It is simple and elegantly designed and a great example of balance of innovation and functionality. This is the future."

REGISTERED APPRENTICESHIP OPPORTUNITIES FOR MILITARY VETERANS



Van Ton-Quinliven, California Community Colleges Vice Chancellor of Workforce & Economic Development

Recently I attended the June meeting of the National Advisory Committee on Apprenticeship in Washington, D.C. This particular meeting was special in that it was held at the Pentagon and co-hosted by the U.S. Department of Defense and the U.S. Department of Labor. The meeting topic was increasing military veterans’ access to Registered Apprenticeship opportunities.

An estimated 1 million service members are expected to separate over the next few years. Currently, approximately 20 per-

cent of registered apprentices are veterans. Questions were raised about whether this percentage could be increased and what strategies would enable the creation of more apprenticeship slots. The Advisory Committee sought greater partnerships between apprenticeship programs and the military in anticipation of so many servicemen and servicewomen returning to our communities.

Frank DiGiovanni, Director of Training Readiness and Strategy in the Office of the Secretary of Defense, pointed to a revision in Title 10 which now authorizes our servicemen and women—within 180 days prior to their exit from the military—to be enrolled in a registered apprenticeship program while still enlisted. This represents a mindset shift and recognizes the hardship these warriors face when attempting to reenter civilian life after having served our country.

Presentations by the various branches of the military—including the Marine Corps and Army to the Combined Arms Support—made it clear that the military has undertaken a multitude of steps to better equip exiting personnel for civilian employment. Progress has been made in mapping Mili-

*The Advisory Committee sought greater partnerships between apprenticeship programs and the military in anticipation of so many servicemen and servicewomen returning to our communities.*

tary Occupational Specialty (SOC) to civilian occupations that are in demand. (See MyNextMove.org/vets.) Another website, Navy Credentialing Opportunities On Line (Navy COOL), defines the civilian credentials that best match a sailor’s rating and training, and outlines the paths to achieve them; there is also “Army COOL.” Much work is also being done to allow for the voluntary release of training and credentials earned while in the military for the purpose of verifying employment potential.

John Ladd, Administrator for the US Department of Labor’s Office of Apprenticeship, challenged the union members of the Advisory Committee to question current practices and to better recognize relevant skills and experience earned in the military that could count toward apprenticeship training. For more information see [www.doleta.gov/oa/](http://www.doleta.gov/oa/)

*Van Ton-Quinlivan was appointed Vice Chancellor of Workforce and Economic Development by Governor Brown in 2011. Within the California Community Colleges Chancellor’s Office, Vice Chancellor Ton-Quinlivan oversees the administration of funds that bridge the skills and jobs mismatch and prepare California’s workforce for 21st century careers. The Division collaborates with employers, organized labor, local communities, and their community colleges through programming to close the skills gap and foster successful student completion.*

**Apprentice Statistics** For the quarter ending June 30, 2013

Number of active apprentices .....	54,492
Number of new registrations and reinstatements .....	4,467
Number of active women apprentices.....	3,279
Percent of active apprentices represented by women .....	6%
Percent of active apprentices represented by minorities .....	50.7%
Number of active veteran apprentices .....	3,675
Number of veterans registered in 2013.....	449
Number of those veterans who have completed apprenticeships.....	212

## RELATED & SUPPLEMENTAL INSTRUCTION & THE DEPARTMENT OF EDUCATION



John Dunn,  
Educational Programs  
Consultant,  
Department  
of Education  
jdunn@cde.  
ca.gov

As an Educational Programs Consultant at the California Department of Education (CDE), I oversee the related and supplemental instructional (RSI) funds that support apprenticeship programs statewide. These RSI funds are allocated on a yearly basis to local educational agencies (LEAs) that work directly with apprenticeship programs and distribute the RSI funds based on classroom attendance by apprentices.

The growing importance of technical knowledge, academic skills, and the ability to make sound technical judgments has made the inclusion of formal classroom instruction that is tied to on-the-job training an integral component of apprenticeship programs.

RSI constitutes the classroom aspect of an apprenticeship program. That instruction is the joint responsibility of the local school district, or community college, and program sponsors; regional occupational centers and programs (ROCPs) and adult schools, together with apprenticeship committees or other program sponsors, to provide the required RSI.

Most of the funding to support RSI is provided by program sponsors. Supplemental funding, through California's annual budget, has been administered by the California

Department of Education. Throughout the fiscal year the Department makes distributions, based on pre-established funding limits and apprentices' actual attendance at the RSI courses, to approved local educational agencies (LEAs).

During each year of their apprenticeship, registered apprentices work on the job for 2,000 hours of reasonably continuous employment and attend approximately 144 hours of related and supplemental classroom instruction.

*It has been an eventful past six months in the Apprenticeship world as it relates to the RSI funds, budget issues and possible changes.*

Sponsors/employers also share responsibility with LEAs for ensuring that industry standards are integrated into both on-the-job training and RSI content. Sponsors/employers and LEA representatives monitor and update the curriculum/workplace linkage, identify the changes necessary to keep the program current, and provide information on growth and projections of training needs in the industry.

It has been an eventful past six months in the Apprenticeship world as it relates to the RSI funds, budget issues and possible changes. At the time of this writing, it appears that the RSI funds will be transferred to the Chancellor's Office of the Community Colleges, which will act as the fiscal agent for the RSI funds.

Over the past year or two, I have been working to improve data collection and oversight of the RSI

funds through the Annual Survey and then the addition of an Annual Review document. With increased emphasis statewide on Apprenticeship, these changes were needed to ensure that the funding was used properly and the oversight by LEAs became more uniform.

I have been working with Cris McCullough and others at the Chancellor's Office to create the outline of a possible system of recommended policies and procedures to guide programs that receive RSI funding and the LEAs (CDE and Community College) that provide oversight of the RSI and instruction. Our hope is that we would have a common platform between the two agencies as it related to RSI funding, regardless of what occurred in the budget.

In addition, new language was inserted into the budget trailer bill addressing this issue. The language states that:

*(b) BY MARCH 15, 2014, The Chancellor and the Division of Apprenticeship Standards, with equal participation by local education agency and community college apprenticeship administrators, shall develop common administrative practices, treatment of costs and services as well as other policies related to apprenticeship programs. Any policies developed pursuant to this subdivision shall be operative upon approval of the California Apprenticeship Council.*

Essentially, we are continuing the collaborative process that we have all been working on over the past few years to create the best Apprenticeship model in the nation and we look forward to working with you on the next steps toward that goal.

# California Advanced Lighting Controls Training Program: CALCTP

## NONPROFIT MAXIMIZES ENERGY EFFICIENCY, SUSTAINABILITY, RETURN ON INVESTMENT

By Bernie Kotler, Co-chair, CALCTP  
Executive Director, Sustainable Energy  
Solutions, California IBEW-NECA LMCC

The California Advanced Lighting Controls Training Program (CALCTP) helps property owners, managers, architects, engineers, designers and builders save energy and money by optimizing the operation and efficiency of advanced lighting controls (ALC) equipment and systems. CALCTP certification enables them to achieve a high return on energy efficiency investments in new or existing facilities.

CALCTP is a statewide nonprofit, public/private partnership that increases the effectiveness, efficiency, and use of lighting controls in commercial, industrial and institutional facilities. CALCTP educates, trains, and certifies California C-10 licensed electrical contractors and state-certified general electricians in the proper installation, calibration, programming, commissioning and maintenance of ALC systems, including dimmers, occupancy sensors, photo-sensors, electronic ballasts, high efficiency lamps and fixtures as well as communication-based control equipment.

ALC systems present an enormous opportunity to improve energy efficiency and save billions of dollars in energy costs in California's 9 billion square feet of commercial, industrial and institutional space— but only if the ALC systems work well.

CALCTP was created because, in the past, many ALC systems were not correctly installed or maintained and did not achieve the expected energy savings. CALCTP is correcting that weakness with rigorous, comprehensive training and certification that allows property

owners and managers to identify contractors and electricians who will deliver optimally performing ALC systems.

Property owners value the program because today's ALC systems are even more sophisticated and complex, and high-level training is essential if those systems are to work properly.

*It's a great example of businesses, workers, utilities, government and the education community working strategically together ... to the benefit of all Californians.*

Founded in 2008, CALCTP is a collaborative that includes a wide-ranging group of organizations representing most of the public and private elements of the lighting control industry in California.

Funding for the program has been provided by the U.S. Department of Labor, State of California Employment Training Panel, Investor-Owned Utilities (IOU), California Labor Management Cooperation Committee, TomKat Charitable Foundation, and the California Energy Commission Clean Energy Workforce Training Program.

That funding has enabled CALCTP to train over 2,300 state-certified general electricians and 300 electrical contractors on the proper installation and commissioning of ALC systems. Training is offered to journey-level electricians at six community colleges, 21 joint apprenticeship training centers (JATCs), and three utility energy centers. While apprentices are not eligible to take CALCTP train-

ing, fifth-year students who have passed the state certification test may enroll. With CALCTP training and testing being so difficult and demanding, it is not surprising that a majority of CALCTP certified electricians are graduates of five-year apprenticeship programs.

Many JATCs have CALCTP dedicated hands-on labs, including the newly-opened Zero Net Energy (ZNE) Center in San Leandro. (See page 6.) The ZNE Center utilized CALCTP certified electricians to install the state-of-the-art ALC system that has contributed significantly to achieving ZNE status.

CALCTP partner utilities, which serve more than 90 percent of the California market, strongly support the use of CALCTP certified contractors and electricians on all ALC projects. According to Delette Olberg of Southern California Edison "The beauty of this partnership is that we all win. Hundreds of jobs are created, businesses enjoy lower energy costs, utilities realize significant energy efficiency savings and millions of tons of greenhouse gas emissions will be removed from our environment. It's a great example of businesses, workers, utilities, government and the education community working strategically together and it's to the benefit of all Californians."

Architects, engineers and builders can increase energy efficiency and investment return for their clients by requiring a CALCTP certified contractor in their project specifications. Property owners and managers can find a list of CALCTP-certified contractors, and more information on the program at: [www.calctp.org](http://www.calctp.org).

## CALIFORNIA SOLAR PLANTS GREAT OPPORTUNITIES FOR OPERATING ENGINEERS APPRENTICES



By James Leslie, Coordinator  
Bert W. Tolbert, Director of Training

Over the past two years California solar energy projects have employed as many as 45 Operating Engineers Apprentices on multiple projects.

Current solar projects are:

- Ivanpah Solar Electric Generating System—370 megawatts
- Abengoa Mojave Solar 1—250 megawatts
- Genesis Solar Energy—250 megawatts
- Centinela Solar Energy—275 megawatts
- Desert Sunlight Solar Farm—550 megawatts

Operating Engineers Apprentices are not only getting opportunities to learn to operate and perform maintenance on scrapers, dozers, forklifts, front end loaders, cranes, skid steers and other traditional equipment, they are performing survey and grade checking as well. Apprentices are taking advantage of opportunities to learn to operate new and spe-

cialized equipment such as drilling, pile driving, GPS, overhead cranes and attachments on heavy equipment that are unique to the solar panels or heliostat mirrors they are installing.

The Operating Engineers apprentice program is 6000 hours of on the job experience and learning, supplemented with six semesters of classroom instruction. Apprentices go through training prior to going to work for contractors. Some of the classes and training include:

- MSHA safety training
- OSHA 10 hour safety training
- Forklift safety training
- Hand signaling and rigging with cranes and excavators
- Excavation safety
- Grade Checking
- Equipment Safety

Brady Renick is a step 5 Equipment Operator apprentice working at the Ivanpah solar electric generating plant where large heliostat mirrors will focus the sun's rays on boilers to make

steam to drive turbines. Brady has obtained enough hours and completed classes in order to pass the OECF test to get his crane license and is currently operating cranes on site. This a skill that will keep Brady employed for years to come.

Kelly Corbin is a step 1 Special Inspector apprentice working for MB Pro at the Genesis Solar plant in Blythe CA, learning to x-ray pipe and sample concrete, a great opportunity to get certified for x-ray and NDT testing.

Gary (Zeke) Manning is a step 2 Equipment Operator apprentice working at the Genesis Solar plant in Blythe CA, operating a forklift with a special attachment to install heliostat mirrors with multiple controls. Also Zeke is learning to run an overhead crane and accumulating hours towards getting his license for operating cranes.

Carolyn DeNess is a step 1 Equipment Operator apprentice working for Granite Construction at Centinela Solar Energy in Imperial County CA. Carolyn in operating a pile driver machine driving posts into the ground to hold solar panels, she is also learning to check grade. These are very desirable skills she can use throughout her career as an Operating Engineer.

The commitment to training apprentices to work efficiently and safely from IUOE Local # 12 Business Manager William C Waggoner, Director of Training Bert W Tolbert and OETT staff as well as contractors like Bechtel, Fluor Constructors, Granite and ARB are a huge reason these projects are being built on time and on budget.

## ETI DEDICATES SOLAR POWER GENERATING SMART MICROGRID SYSTEM

By Jane Templin, Outreach Director

The IBEW Local 11/LA Chapter NECA Electrical Training Institute held their official ribbon-cutting ceremony to dedicate a first-of-its-kind, state-of-the-art solar power generating smart microgrid system August 22, 2012. Honoring the dedication were many dignitaries, including four U.S. congresswomen, two state assembly members, mayors from the local communities, and IBEW members, contractors and guests.

This was a visionary design-build turnkey project by NECA contractor Pacific Data Electric, one of the foremost companies in the field of renewable energy production, storage and management. PDE created the fully self-contained, self-reliant system with the collaborative partnership of Dyna Power Company, who designed and manufactured the intelligent digital inverter.

The new system can charge electric vehicles directly from multiple energy sources, including solar, battery storage or utility grid power. Injecting stored power into the building's electrical usage will keep it from exceeding utility rate demand threshold, a huge savings factor. And integrating three separate DC power sources with varying voltages improves usage, efficiency and reliability, including providing uninterrupted stand-by emergency power to vital areas like ETI's computer server room during utility power outages.



*Electric vehicles are charged directly from multiple energy sources, including solar, battery storage or utility grid power.*



This new energy system not only produces savings for the IBEW/NECA Electrical Training Institute, it also increases the training capacity for our journeymen and apprentices in the installation of high tech clean energy systems.

*The state-of-the-art system provides uninterrupted stand-by emergency power to ETI's computer server room during utility power outages.*

## *Santa Clara Stadium Project Works Clean for LEED Certification*

# SUPER EFFORT BY 49ERS LEEDS TO BIG WIN FOR THE ENVIRONMENT

By Matthew Rowlett, Training Officer, Carpenters Training Committee

The San Francisco 49ers are attempting to build the first football stadium to open with LEED certification in 2014. As part of obtaining LEED certification, NRG Energy is working with the 49ers organization and the Santa Clara Stadium Authority to be the sustainable energy provider for the new venue. The new 49ers stadium will have three solar installations, including solar array-covered bridges, a solar canopy above the green roof and solar PV on the training center. The total system will have a peak capacity of 400 kilowatts, which is the amount of energy used at the stadium during their ten home games per season.

Along with the solar applications that will be used, the construction on the project is being closely watched; strict methods must be followed. Devon Burns, Apprentice Carpenter, said they reuse lumber and plywood until it is completely unusable, then place it in a wood-only recycle container. Jose Arroyo, Foreman for Conco Construction, said he has never reused material as much as they do on this project; they normally reuse a 2"x4" piece of lumber 4 or 5 times, but on this project they are reusing the same piece of lumber 12 to 15 times. "The lumber has to be completely unusable or cut down below two feet long before we are allowed to throw it out" says Devon Burns. "It can be a pain reusing this material so much, but I understand it's for the environment." Turner/Devcon, the General Contractor, see that their subcontractors are taking every step possible to ensure that they are building as "green" as possible.

Pascual Valenzuela, Apprentice Insulator, is also learning about green construction while installing Rigid Board insulation panels that are supplied by a local vendor from Stockton, CA.; using local products is part of obtaining the LEED certification.

Henry Nanes, Foreman for Res-com Insulation, added that his company is not only using local vendors, but they are using recycled products and "low-VOC" products required for the LEED certification. Volatile organic compounds are used as solvents or thinners that work with the resin in caulks and sealants to bind together all the ingredients, allowing it to adhere to the building materials.

LEED certification is not an easy thing to achieve; every construction worker has to understand the ramifications of every step of the process. It is important to use the right products, but certain techniques must also be used. Recycle, recycle, recycle is the word at the new Santa Clara Stadium, as evidenced by the multiple recycle bins onsite that state "Metal Only" or "Wood Only."

Apprentices are growing accustomed to these green projects, and Santa Clara Stadium will educate approximately 150 apprentices in these environmentally friendly practices.

*LEED certification is not an easy thing to achieve; every construction worker has to understand the ramifications of every step of the process.*



*Devon Burns, Apprentice Carpenter*



*Pascual Valenzuela, Apprentice Insulator*

# Save the Date!

## California Conference on Apprenticeship

Celebrating the 75th Anniversary of the  
Shelley-Maloney Apprentice Labor Standards  
Act of 1939

April 29 - May 1, 2014—San Diego, CA

**Biennial Conference Benefitting  
Apprenticeship in California**

**Please share this event with  
others interested in learning  
more about apprenticeship!**

- ◆ Nine Informative Workshops
- ◆ Shelley-Maloney Act Historical Presentation
- ◆ Hall of Fame Honoree Banquet & Entertainment
- ◆ 2 Networking Events (April 29, 2014)
- ◆ Vendor Exhibits



California Conference on Apprenticeship Committee  
In Association with the California Apprenticeship Council