



Training Proposal for:
Orange County Electrical Joint Apprenticeship
and Training Trust Fund
Agreement Number: ET16-0913

Panel Meeting of: September 25, 2015

ETP Regional Office: San Diego

Analyst: S. Godin

PROJECT PROFILE

Contract Attributes:	Priority Rate Retrainee Apprenticeship SET	Industry Sector(s):	Construction Green Technology Priority Industry: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Counties Served:	Orange	Repeat Contractor:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Union(s):	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No International Brotherhood of Electrical Workers (IBEW) Local 441		
Turnover Rate:	≤20%		
Managers/Supervisors: (% of total trainees)	≤0%		

FUNDING DETAIL:

Please choose an option from the list below. Please choose the "BLANK" if N/A.

Program Costs	+	Support Costs	=	Total ETP Funding
\$446,820		\$31,005 8%		\$477,825

In-Kind Contribution:	50% of Total ETP Funding Required	Inherent
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TRAINING PLAN TABLE

Job No.	Job Description	Type of Training	Estimated No. of Trainees	Range of Hours		Average Cost per Trainee	Post-Retention Wage
				Class / Lab	CBT		
1	Retrainee Journeyman Priority Rate SET	Commercial Skills, Business Skills, Computer Skills, Continuous Improvement, OSHA 30	50	8-200	0	\$564	\$29.92
				Weighted Avg: 24			
2	Retrainee Apprentice SET	Commercial Skills, OSHA 10	165	8-210	0	\$2,725	\$20.55
				Weighted Avg: 196			

Minimum Wage by County: \$20.55 per hour for SET Statewide priority industry.
Health Benefits: Yes No This is employer share of cost for healthcare premiums – medical, dental, vision.
Used to meet the Post-Retention Wage?: Yes No Maybe
 Up to \$4.10 per hour will be used to meet the required SET priority industry wage of \$20.55 per hour in Job Number 2.

Wage Range by Occupation		
Occupation Titles	Wage Range	Estimated # of Trainees
Job Number 1: Journeyman		50
Inside Wireman		30
Transportation Systems Installer		15
Sound Technician		5
Job Number 2: Apprentice		165
Inside Wireman		100
Transportation Systems Installer		65
3 rd year Sound Technician		3

* Wages vary by union local.

INTRODUCTION

Created in 1950, the Orange County Electrical Joint Apprenticeship and Training Trust Fund (OC/TTF or Trust) (www.ocett.org) is administered jointly between the Orange County Chapter of the National Electrical Contractors Association (NECA) and the International Brotherhood of Electrical Workers (IBEW) Local 441. The Trust is located in Santa Ana. Its mission is to

provide up-to-date industry skills training and secure high-quality job opportunities for Journeymen and Apprentices in three electrical occupations.

At present, the OC/TTF serves approximately 1,200 Journeymen and 189 Apprentices. The Trust administers funds for three apprenticeship programs under two different JAC's:

Orange County Electrical JAC

- Inside Wireman
- Intelligent Transportation Systems

Orange County Sound Technician JAC

- Sound Installer

Approximately 191 employers are signatory to the three collective bargaining agreements. These employers perform specialized construction work related to the design, installation and maintenance of commercial and residential electrical systems.

This is the third agreement between ETP and OC/TTF in the last five years. The Trust reports that as a result of ETP funding it graduated seven apprentices in 2013 and 67 apprentices in 2014. OC/TTF anticipates that 42 apprentices will graduate in 2015. Both the Inside Wiremen and Transportation Systems apprenticeship programs are five years, and the Sound Technician Installer program is three years, in duration.

PROJECT DETAILS

Employer Demand for Training

Signatory employers and union representatives have identified the following reasons for Journeymen training: new energy efficiency regulations, the need to reduce costs to remain competitive, higher quality standards, the increasing complexity of construction projects, and a retiring workforce in Orange County. OC/TTF will provide training to workers for commercial, industrial and residential projects with local signatory contractors.

Current and upcoming Orange County construction projects include: Broadcom Commercial/Industrial Complex; Irvine Company 20 story high rise office building; Energy Center Gas Turbine Plant; Yorba Linda Power Plant; Source Complex Buena Park Hotel & high-rise office building; San Clemente Retail Plaza; Newport Mesa School District Solarization Project; multiple Kaiser Hospital solarization projects and numerous smaller commercial projects.

Apprenticeship Program

The Panel is authorized to fund Apprentice training that does not displace any other source of government funds, or replace an existing apprenticeship program approved by the Division of Apprenticeship Standards (DAS). The Panel adopted the Apprenticeship Training Program as a pilot in March 2012. It is designed to supplement cost of delivery for the Related and Supplemental Instruction (RSI) portion of DAS-approved apprenticeship training.

Apprenticeships are a multi-year training program that results in DAS certification to work as a Journeyman. They are authorized in California under the Shelly-Maloney Apprenticeship Labor Standards Act of 1939. Apprentices commit to training under contract with an apprenticeship

program sponsor. They advance through a series of apprenticeship levels as they complete modules of RSI and on-the-job training. Wages are paid for hours worked on the job, in progression with a series of advancements up to the Journeyman level.

Apprentice programs are typically sponsored by a Joint Apprenticeship Training Committee (JATC) as here. A JATC is created through collective bargaining, with an equal number of members appointed by union and management contributions to a training trust fund. The employers are not “participants” but are signatories to the Collective Bargaining Agreement.

Depending on the type of trade, apprenticeship programs vary in length. As noted earlier, here there are two five year programs and one three year program. They also vary in size, ranging from less than 10 to several hundred apprentices at any given point in time. Several types of trainees are eligible under the Apprenticeship Program: Apprentices (second-year), Journeymen and Pre-Apprentices. First-year Apprentices are not eligible due to the higher drop-out rates associated with this entry-level.

RSI is traditionally delivered as class/lab, and ETP does not reimburse CBT delivery for apprenticeship training. The curriculum is developed with input from DAS and a designated Local Educational Agency; in this proposal the LEA is Palomar Community College. The Apprenticeship Program allows reimbursement for up to 200 hours of RSI plus OSHA10, per-apprentice.

For the building trades, it is not customary for workers to be employed for a standard retention period of 90 consecutive days with one employer. In that instance, the Panel may substitute non-consecutive hours worked for retention. This modified retention period must be no less than 500 hours within 272 days with more than one employer. Both the standard and modified retention periods will apply to this proposal.

Because ETP funding cannot displace another source of government funds, the fixed fee rate is reduced by \$5.00 to account for adult education funding appropriated each year for Apprentice training through the California Community College Chancellor's Office and Department of Education. This changes the ETP Priority Industry Rate from \$18.00 to \$13.00 per hour for all Apprentice Job Numbers.

In addition, the Panel adopted a “blended rate” for Journeymen, reflecting the fact that they may be employed by a variety of contractors over the two-year term of contract ranging from large employers, to small (≤ 100 employees). This is \$22 per hour, midway between the Priority Industry standard rate (\$18) and Small Business rate (\$26).

Under the Apprenticeship Training Program, the post-retention wage has been standardized to \$20.55 per hour reflecting the Special Employment Training (SET) wage for Priority Industry. This wage was chosen for ease of administration, recognizing that most Apprentices and all Journeymen exceed the highest ETP wage requirements. However, if the actual rate is higher, it will be used, as is true here for Journeymen.

DAS Completion Rates

The average completion rate for Apprentices in the Electrical Industry is 66.3% as measured by DAS over the most recent five-year reporting period (CY2009 through CY2013). The DAS completion rates for OC/TTF were 65.75% for its Inside Wiremen and Transportation Installers and 61.79% for its Sound Installers, both of which exceed the benchmark of no less than 50% of the industry average.

Training Plan

OC/TTF will provide its journey workers with OSHA 10/30 and a variety of Business, Commercial and Computer skills training topics included in the Agreement's menu curriculum. Apprentices will receive Standard Related and Supplemental Instruction (RSI) in addition to OSHA 10. All training is center-based and will be delivered at the Trust's training center in Santa Ana.

Journeyman Training

Commercial Skills (80%)

Green training is expected to be the centerpiece of the program because of the demand for energy efficient construction methods and technologies by participating employers and property owners. Training will cover energy-efficient technologies and products such as green building materials, solar photovoltaic panels, new motor controls, advanced welding, green materials testing and audit equipment.

OC/TTF will also offer a new journey level certification class: Instrumentation. The Instrumentation class is a joint Electrical and Pipefitter class teaching electricians how to calibrate and install electrical wiring in pipes. The course is critical for journeymen working in high industrial areas and in water treatment plants.

Business Skills (5%) - Electricians must understand new national building codes and green practices; follow certification guidelines; use more collaborative bidding and project development practices; meet budgets; interact with other types of construction workers; and implement green solutions in traditional work environments. The proposed training will give trainees the tools to plan, organize, and manage construction projects more efficiently. Training will also include team-building and leadership skills so that electricians can lead teams in an effective and efficient manner.

Computer Skills (5%) - Training will include scheduling, planning and modeling software and AutoCAD and Job Tracking applications that provide trainees with the tools to modify blueprints, look up project requirements, build budgets and timelines, design virtual buildings, and adjust computerized control systems.

Apprenticeship Training

Commercial Skills (95%)

Inside Wiremen and Transportation System Installer Apprentices learn to install, maintain and repair various types of electrical and electronic equipment in commercial, industrial and residential establishments. They will also learn to install connect and test: electrical wiring systems for lighting, heating, air conditioning and communications in any building or structure.

Sound Installer Apprentices learn to install, maintain and repair limited energy monitoring, communication and signaling systems. These may include: fire alarm, telephone, computer networks, access control, security, closed captioned television (CCTV), video sound systems and other signal, traffic, and communications systems.

Certified Safety Training

OSHA 10/30 (10% Journeymen; 5% Apprentices) – OSHA 10/30 training is a series of courses “bundled” by industry sector and occupation. It consists of 10 hours of training for Apprentices and 10 or 30 hours for journeymen. The coursework is geared towards construction work, and also manufacturing. Completion of the training results in a certificate that expands employment opportunities. The coursework must be approved by Cal-OSHA, and the instructors must be certified by Cal-OSHA. This training provides a complete overview of occupational safety and health so that workers are more knowledgeable about workplace hazards.

Green Technology

Training will cover energy-efficient technologies and products such as green building materials, solar photovoltaic panels, new motor controls, climate energy efficiency and green materials testing and audit equipment. This training will help electrical workers hone the new skills and knowledge necessary to work in green construction in the Orange County area.

Curriculum Development

The Apprentice program uses the National Joint Apprenticeship and Training Committee’s Curriculum which was developed for the exclusive use of IBEW-NECA. The Journeyman upgrade Curriculum is employer-driven to meet the needs of signatory Orange County employers. The Curriculum was developed and customized with input from both labor and management representatives to address the local needs of union members, participating employers, and the industry as a whole.

Trainer Qualifications

OC/TTF employs a total of 15 full and part-time trainers. All trainers are former or current members of the trade and some have received Master Certification status by the National Joint Apprenticeship and Training Committee. All trainers are approved by Santiago Canyon College.

Marketing and Support Costs

OC/TTF conducts marketing through direct mailings, informational flyers, personal contacts, telephone calls, public service announcements, emails, and its website. Class information is disseminated throughout the year to all apprentice and journeyman electricians within the jurisdiction, as well as to the electrical contractors who employ them.

Application announcements for the Apprenticeship program are disseminated to local, state and federal agencies as well as to local high schools and community colleges; and community based organizations.

Four staff persons in the OC/TTF office will assist with marketing, recruitment, needs assessments, and scheduling of classes. The Trust requests 8% support costs to fund its staff in recruiting and qualifying additional participating employers for this program. Many participating employers have already been recruited; however, additional recruitment and assessment activities are anticipated. Staff recommends the 8% support costs.

Commitment to Training

Employers will continue to make contributions to the training trust for every hour worked by Apprentices and Journeymen. General safety training is provided by the signatory employers in accordance with all pertinent requirements under state and federal law.

Impact/Outcome

OC/TTF offers certification classes in topics such as Green Audits, Arc Flash Safety Awareness, OSHA 10/30, Instrumentation, Electric Vehicle Infrastructure (EVIT) and California Advanced Lighting Control Program (CALCTP).

Retention Modification

For occupations in which workers are hired for short-term jobs, retention may be satisfied by employment of at least 500 hours within 272 days; or alternatively, full-time at 35 hours per week with one employer for 90 consecutive days.

Tuition Reimbursement

OC/TTF represents that students enrolled in the ETP-funded program will not be charged tuition, fees, or any other costs associated with training. This representation will be made a condition of the Agreement.

RECOMMENDATION

Staff recommends approval of this proposal.

ACTIVE PROJECTS

The following table summarizes performance by OC/TTF under an active ETP Agreement:

Agreement No.	Approved Amount	Term	No. Trainees (Estimated)	No. Completed Training	No. Retained
ET14-0918	\$335,299	5/05/14-5/04/16	254	341	71

The Trust reports that training under this Agreement was completed by 6/11/15. The ETP tracking system shows that 26,419 eligible reimbursable hours have been delivered to 341 trainees. This equates to \$412,449, more than 100% of the Agreement amount. The Trust anticipates close-out of this Agreement by CY 2015.

PRIOR PROJECTS

The following table summarizes performance by OC/TTF under a previous ETP Agreement that was completed within the last five years:

Agreement No.	Location (City)	Term	Approved Amount	Payment Earned \$ %
ET13-0903	Santa Ana	09/04/12-09/03/14	\$336,789	\$336,789 (100%)

DEVELOPMENT SERVICES

California Labor Federation in Sacramento and Strategy Workplace in Oakland assisted with the development of this proposal at no cost.

ADMINISTRATIVE SERVICES

Strategy Workplace will also perform administrative services in connection with this proposal for a fee not to exceed 13% of payment earned.

TRAINING VENDORS

None

Exhibit B: Menu Curriculum

Trainees will receive any of the following

Class Lab Hours

8-200 (Job 1 Journeyman)

COMMERCIAL SKILLS

Codeology

- National Electrical Code
- Other Recognized Standards (Installation Changes)
- Plan, Build, and Use
- Related Standards (Mandatory and Permissive Rules)
- Special Occupancies and Equipment
- Arc Flash

Analog/Digital Circuit (AC/DC) Principles

- Math for Electricians
- Ohm's Law
- Generators
- Inductance/Reactance
- Series/Parallel Circuits

Grounding

- Grounding and Bonding
- National Electrical Code Article 100-Definitions and Provisions
- National Electrical Code Article 110-Requirements
- National Electrical Code Article 90-Introduction
- National Electrical Code Article Chapters 1-4
- Significant Changes to National Electric Code

Fire Alarm Systems and Installations

- Definitions and Systems
- Initiating Devices and Notification Systems
- National Electrical Code and Installation Requirements
- Start Up and Check Out Procedures
- National Fire Protection Act, 1972 (NFPA 72)

Fire Life Safety

- National Electrical Code (Relating to Fire Alarms)
- National Electrical Code Article 725
- National Electrical Code Article 760
- NFPA 72
- Principles of Electronics

Industrial Motor Control

- Control Relays and Timers
- Jogging and Plugging Controls
- Manual Starters and Magnetic Coils
- Push Buttons, Selector Switches, and Mechanical Devices
- Solid State Electronic Devices
- Variable Frequency Drives

Programmable Logic Control (PLC)

- Developing Ladder Programming
- Introduction to Programmable Equipment
- Programming Programmable Logic Controllers
- Using Timers and Counters in Logic Programs
- Writing a Program

Electrical Design

- 3 and 4-Way Switching
- Design of Electrical Circuits
- Magnetic Motor Control and the Code
- LonWorks and Building Automation
- Transformers and the Code

Voice, Data, and Video

- Audio Distribution
- CCTV Security Surveillance
- Computer Networking
- Fiber Optics
- Telephonic Interconnect

Industry Specific Skills

- Solar Panel Installation
- Solar Photovoltaics
- Building Automation Systems
- Confined Space Entry
- Specialized Tools
- Conduit Bending
- Rigging and Lifting
- Firestop Installation
- Blueprints and Schematics
- Work Flow and Resources
- Proper Installation and Use of Testing and Auditing Materials and Equipment (Green Training)
- Understanding New Technologies and Changes to Industry Standards (Green Training)
- Proper Equipment Set-Up (Green Training)

- Safe Working Practices (Training is capped 10% of a trainee's total hours)
- Advanced Instrumentation and Motor Controls
- Programmable Logic Controllers
- Advanced Welding
- Architecture Designs and Advanced Plan Reading
- Management and Monitoring of Materials
- Testing Materials and Equipment –Proper Set-Up and Use (Green Training)
- Understanding Changes to Industry Standards (Green Training)

CALCTP (California Advanced Lighting Control Program)

- Advanced Lighting Control Systems
- Lighting Control Strategies
- Line Voltage Switching Controls
- Low Voltage Switching Control
- Dimming Controls
- Occupancy Sensors
- Photosensors

CALCTP Acceptance Testing
Electric Vehicle Infrastructure Training Program (EVITP)
Instrumentation Certification

BUSINESS SKILLS

- Teambuilding Skills
- Green Awareness Training and Green Certifications
- Leadership Skills
- Customer Service Skills
- Conflict Resolution
- Problem Solving
- Decision Making Skills
- Inventory Checklist
- Advanced Time Management
- Filling Out Work Documents and Reports Accurately
- Project Management
- Creating Project Bids

COMPUTER SKILLS

- Auto Computer-Aided Design (AutoCAD)
- Job Tracking System
- Scheduling & Planning Jobs

OSHA 10/30 (OSHA CERTIFIED INSTRUCTOR)

- OSHA 10 (requires completion of 10 hours)
- OSHA 30 (requires completion of 30 hours)

Class/Lab Hours

8 - 210 (Job 2 Apprentices)

COMMERCIAL SKILLS

Safety

- General job-site safety awareness
- First Aid/CPR Certification
- Emergency Procedures
- Compliance with OSHA, NFPA and EPA Regulations
- Substance Abuse Awareness

Tools, Materials and Handling

- Proper care and use of hand and power tools
- Proper rigging methods
- Proper digging techniques
- Proper use of motorized equipment; platform lifts, fork-lifts and bucket trucks
- Proper material lifting and handling

Math

- Appropriate mathematical calculations to solve for related problems.

Electrical Theory

- Basic electro -magnetic principals
- Ohm's Law
- AC/DC Theory
- Series, Parallel and Combination Circuits
- Characteristics of circuits; voltage, current, power, resistance, impedance, capacitance and reactance.
- Theory of superposition and solving for multiple voltage-sourced circuits
- Operation and characteristics of three-wire systems
- Operation and characteristics of three-phase systems
- Use of electronics in the electrical industry
- Code Requirements
- National Electrical Code and Local Codes

Conductors

- General characteristics
- Conductor installation codes and techniques
- Methods for selecting proper size and type of conductors

Conduit and Raceways

- Terms associated with conduits and raceways
- Procedures for laying out various types of bends
- Procedures for making proper bends when fabricating conduits

- Conduit support systems recognized by Code First Aid/CPR

Lighting Systems

- Function, operation and characteristics of various lighting systems
- Lighting distribution and layout

Installation and connection of fixtures

- Over-current Devices
- Function, operation and characteristics of over-current protection devices
- NEC requirements for over-current protection devices
- NEC requirements for ground-fault and arc-fault protection

Grounding Systems

- Functions, operation and characteristics of grounding systems
- Sizing, layout and installation of grounding systems
- Insulation and isolation
- Proper grounding and bonding techniques
- Special circumstances

Services and Distribution Systems

- Function, operation and requirements for various panel boards and switch gear
- Grounding requirements
- Code requirements

Prints and Specifications

- Creation of blueprints plans and specification
- Use of blueprints, plans and specification
- Recognizing information contained within blueprints

Motors, Motor Controllers and Process Controllers

- Function, operation and characteristics of motors (AC, DC, Dual-Voltage)
- Proper motor installations
- Motor controllers, control circuits and control devices
- Control Transformers, switches and relays
- Instrumentation, process control systems and devices

Generation and Power Supplies

- Principles of generating electricity
- Principles of Alternative Energy Generating Systems
- Installation and maintenance of uninterruptible power supplies (UPS)
- Installation and maintenance of emergency battery systems

Transformers

- Function, operation, and characteristics of transformers
- Selection and installation of transformer types
- Transformer grounding techniques

- Harmonics and power quality
- Personal Development
- Orientation to organization and structures
 - Working with others
 - Personal financial development

Electrical Testing

- Steps used for various testing processes
- Proper selection and use of test meters
- Utilizing the results of testing procedures

Specialty Systems

- Fire Alarms
- Security Systems

CALCTP

- Advanced Lighting Control Systems
- Lighting Control Strategies
- Line Voltage Switching Controls
- Low Voltage Switching Control
- Dimming Controls
- Occupancy Sensors
- Photosensors

Electric Vehicle Infrastructure Training Program (EVITP) Job Site Management Skills

OSHA 10 (OSHA CERTIFIED INSTRUCTOR)

OSHA 10 (requires completion of 10 hours)

Note: Reimbursement for Job Number 1 training is capped at 200 total training hours per trainee. Reimbursement for Job Number 2 Apprenticeship training is capped at 200 total training hours per trainee in Commercial Skills and 10 hours of OSHA10 for a total of 210 hours. Safety training cannot exceed 10% of total training hours for any individual trainee. This 10% safety training cap does not apply to Hazardous Materials or OSHA 10/30 training.