



**Training Proposal for:
San Diego Electrical Training Trust**

Agreement Number: ET15-0927

Panel Meeting of: June 26, 2015

ETP Regional Office: San Diego

Analyst: S. Godin

PROJECT PROFILE

Contract Attributes:	Retrainee Apprenticeship Priority Rate	Industry Sector(s):	Construction Green Technology Priority Industry: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Counties Served:	San Diego & Imperial	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, Local 569		
Turnover Rate:	≤20%		
Managers/Supervisors: (% of total trainees)	≤0%		

FUNDING DETAIL:

Program Costs	+	Support Costs	=	Total ETP Funding
\$333,340		\$23,022 8%		\$356,362

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	Commercial Skills Business Skills Computer Skills OSHA10/30	100	8-200	0	\$564	\$43.00
				Weighted Avg: 24			
2	Retrainee Apprentice Priority Rate	Commercial Skills OSHA 10	166	8-210	0	\$1,807	\$20.55
				Weighted Avg: 130			

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 \$1.35 per hour may be used to meet the Post-Retention Wage for some Job Number 2 second year Inside Wiremen Apprentices.

Wage Range by Occupation

Occupation Titles	Wage Range	Estimated # of Trainees
Journey Worker - Inside Wiremen & Sound Technician		100
2 nd Year Apprentice Inside Wireman		45
3 rd Year Apprentice Inside Wireman		45
4 th Year Apprentice Inside Wireman		21
5 th Year Apprentice Inside Wireman		30
2 nd Year Apprentice Sound Technician		7
3 rd Year Apprentice Sound Technician		13
4 th Year Apprentice Sound Technician		5

INTRODUCTION

The San Diego Electrical Training Trust (SDETT or Trust) (www.sdett.org) is dedicated to providing up-to-date industry skills and secure high-quality job opportunities for its members in San Diego and Imperial Counties. SDETT trains electrical workers to install power, lighting, controls, sound and communication controls, and other electrical equipment in commercial, industrial and residential facilities.

The Trust is governed by a Board of Trustees comprised of four labor and four management representatives, and is a joint effort of the International Brotherhood of Electrical Workers (IBEW) Local 569 and the National Electrical Contractors Association (NECA). Approximately 2,968 apprentices and journeymen work for over 294 signatory employers. The 266 planned retrainees included in this proposal are all members of IBEW Local 569 and covered by separate

collective bargaining agreements for two occupational titles: Inside Electrical Wiremen and Sound Technicians. The apprenticeship program for Inside Wiremen is 5 years in length and the Sound Technician is 4 years.

Employer Demand for Training

The demand for qualified Apprentice and Journeymen electrical workers in Imperial County is so great that the satellite training center in Imperial County schedules classes year round to meet the needs of local employers. Two large-scale utility grade solar projects are currently underway in Imperial County: Imperial Solar Energy Center West and Imperial County Solar Company 2. These two projects employ over 300 IBEW 569 members in a high unemployment (HUA) county. Similarly, demand in San Diego County is increasing due to current and upcoming construction projects including a new Kaiser Permanente hospital (and renovation of existing facilities); Carlsbad Desalination Plant; and Pico Pico Energy Center Gas Turbine Plant.

Participating 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 San Diego and Imperial Counties. SDETT will provide training to workers from both counties for commercial, industrial, residential, and solar farm projects with local signatory contractors.

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) or Unilateral Apprenticeship Committee (UAC). A JATC is created through collective bargaining, with an equal number of members appointed by union and management, as compared to a UAC which is created through a trade association. Both types require employer contributions to a training trust fund.

Depending on the type of trade, apprenticeship programs vary in length, typically from 2-6 years. 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.

ETP funding flows through a Multiple Employer Contract (MEC), in this proposal held by a JATC. The employers are not "participants" but are signatories to the Collective Bargaining Agreement.

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). [Note: This "blended rate" has been extended to Pre-Apprentices, for ease of administration.]

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.

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 are 77.02% for San Diego Electrical JATC and 68.9% for San Diego County Sound Technicians JAC, which meets ETP standards.

PROJECT DETAILS

This will be SDETT's third Agreement, although none have been held in the last five years. SDETT will provide OSHA 10/30 and a curriculum in Commercial, Business, and Computer Skills for Journeymen, for both large and small employers.

In addition to the standard RSI, Apprentices will receive OSHA 10. As well, the proposed training is entirely center-based and will be delivered at the Trust's training centers, a 32,000-square-foot state-of-the-art training center in San Diego and a smaller 5,000-square-foot satellite facility in Imperial County.

Training Plan

Apprenticeship Training

Commercial Skills (95%) – Inside Wiremen and Sound Technician apprentices will learn to install, maintain and repair various types of electronics equipment in commercial, industrial and residential establishments. Trainees will also learn to install, connect, and test electrical wiring

systems for lighting, heating, air conditioning and sound and communication systems for any building or structure.

Journeyman Training:

Commercial Skills (80%) - Green training will be the focus, especially energy-efficient technologies and products such as green building materials, solar photovoltaic panels, new motor controls, advanced welding, green materials testing and audit equipment.

Business Skills (5%) - Trainees must understand new national building codes and green practices; follow certification guidelines; use more collaborative bidding and project development practices; meet budgets; interact with various types of construction workers; and implement green solutions in traditional work environments. Training will give workers the tools to plan, organize, and manage their construction projects more efficiently. Training will also include teambuilding 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. AutoCAD and Job Tracking applications will provide trainees with the tools to modify blueprints, look up project requirements, build budgets and timelines, design virtual buildings, and adjust computerized control systems.

Certified Safety Training

OSHA 10/30 – 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.

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 San Diego and Imperial 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

SDETT employs a total of 20 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.

Marketing and Support Costs

SDETT conducts marketing through direct mailings, informational flyers, personal contacts, telephone calls, public service announcements, emails, and its website. Class information will be 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. The SDETT is also committed to working with the Helmets to Hardhat program to recruit more veterans into its apprenticeship programs.

Ten staff people in the JATC office will assist with marketing, recruitment, needs assessments and scheduling of classes. SDETT is requesting 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.

High Unemployment Area

Some Job Number 1 and 2 trainees work in a High Unemployment Area (HUA) exceeding the state average by at least 25%. Although signatory employers with locations in Imperial County qualify for HUA status under these standards, SDETT is not asking for a wage modification.

Tuition Reimbursement

In accordance with Title 22, CCR, Section 4412.1, SDETT represents that students enrolled in the ETP-funded program will not be charged tuition, fees, or any other costs associated with training. The representation will be made a condition of the Agreement.

RECOMMENDATION

Staff recommends approval of this proposal.

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

N/A

Exhibit B: Menu Curriculum**Class/Lab Hours**

8 – 200 (Job Number 1)

Trainees may receive any of the following:

Journeyman Training**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
 - 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)
- California Advanced Lighting Control Program (CALCP)
 - 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)

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-hour course)
- OSHA 30 (requires completion of 30-hour course)

Class/Lab Hours

8 – 210 (Job Number 2)

Apprentice Training**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 & 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

OSHA 10 (OSHA Certified Instructor)

- OSHA 10 (requires completion of 10-hour course)

Safety training cannot exceed 10% of total training hours per trainee. This cap does not apply to OSHA 10/30 training.

Note: Reimbursement for retraining is capped at 200 total hours per trainee for Job Number 1, and 210 total hours per trainee for Job Number 2, regardless of method of delivery.