



Training Proposal for:
**Kern County Electrical Joint Apprenticeship
 & Training Committee**
Agreement Number: ET15-0920

Panel Meeting of: February 20, 2015

ETP Regional Office: North Hollywood

Analyst: M. Reeves

PROJECT PROFILE

Contract Attributes:	Retrainee Apprenticeship Priority Rate	Industry Sector(s):	Construction Priority Industry: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Counties Served:	Kern	Repeat Contractor:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Union(s):	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No International Brotherhood of Electrical Workers, Local 428		
Turnover Rate:	≤20%		
Managers/Supervisors: (% of total trainees)	N/A		

FUNDING DETAIL:

Program Costs	+	Support Costs	=	Total ETP Funding
\$249,880		\$17,280 8%		\$267,160

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 Priority Rate Journeyman	Business Skills, Commercial Skills, Computer Skills, OSHA 10/30	35	8-200	0	\$564	\$36.65
				Weighted Avg: 24			
2	Retrainee Priority Rate Apprentice	Commercial Skills, OSHA 10	89	8-210	0	\$2,780	\$20.55
				Weighted Avg: 200			

Minimum Wage by County: \$20.55 per hour 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 \$0.39 per hour may be used to meet the Post-Retention Wage in Job Number 2.

Wage Range by Occupation

Occupation Titles	Wage Range	Estimated # of Trainees
Journeyman Electrician/Inside Wireman		35
Apprentice Electrician/Inside Wireman		89

INTRODUCTION

Kern County Electrical Joint Apprenticeship & Training Committee (Kern Electrical JATC) is a nonprofit training organization dedicated to providing up-to-date industry skills training and secure high-quality job opportunities for its members. Founded over 52 years ago, the JATC trains Electricians to install power, lighting, controls and other electrical equipment in commercial, industrial and residential facilities. Kern Electrical JATC is governed by a Board of Trustees comprised of three labor and three management representatives, and is a joint effort of the International Brotherhood of Electrical Workers (IBEW) Local 428 and the National Electrical Contractors Association (NECA).

Employer Demand for Training

Participating employers and union representatives have identified the following reasons for 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.

Kern County is California's leading oil producing county and building many of the state's utility solar farms. As a major contributor to the state's energy and agricultural resources, this county needs trained electricians to help the state meet demand. Kern Electrical JATC is located in Bakersfield and proposes to train Journeymen and Apprentice Electricians, all of whom are members of IBEW Local 428.

Kern Electrical JATC will provide training to workers for commercial, industrial and oil field projects with local signatory contractors. Journeyman and Apprentice Electricians will be working on utility grade solar projects that are both planned and currently under construction. Most of these solar projects are expected to reach completion in 2016. In addition, it is anticipated that some of the electricians trained under this proposal will work on oil refinery upgrade projects, as well as on a local Hydrogen Energy California (HECA) plant that is projected to be operational in the near future.

Apprenticeship Pilot

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 provides reimbursement for the Related and Supplemental Instruction (RSI) portion of an apprenticeship-training program. RSI is delivered as class/lab training that is developed with a Local Educational Agency (Kern Community College District) and approved by DAS. The program provides reimbursement for 200 hours of RSI plus OSHA 10. All training will be class/lab.

For the building trades, where it is not customary for workers to be employed for 90 consecutive days with one employer, the Panel may substitute hours worked for retention. The modified retention period must be no less than 500 hours within 272 days with more than one employer. Kern Electrical JATC is requesting this modified retention period.

To ensure ETP does not displace Montoya Funds, Apprenticeship Pilot reimbursement is reduced by \$5.00, reducing the priority industry rate from \$18.00 to \$13.00 per hour. The ETP wage for Apprentices will be \$20.55 per hour. This is the Special Employment Training Statewide wage as modified for priority industries, which is being used for all apprentice occupations, for ease of administration.

DAS Retention Rates

The average apprenticeship completion rate for Kern Electrical JATC from 2008 to 2012 is 60.6%, which is within an acceptable range of the industry sector average of 65.1%.

PROJECT DETAILS

To meet current and future demand for electrical industry workers, Kern Electrical JATC will provide a curriculum in OSHA 10/30, Business, Commercial and Computer Skills and training for both large and small employers. The proposed training, entirely center-based, is scheduled to commence the week following Panel approval.

Training Plan

The following classes will be offered to **Journeymen**:

Commercial Skills (80%) - Green training will be the focus due to the demand for energy efficient construction methods and technologies. 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.

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 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.

OSHA 10/30 (10%) - OSHA 10/30 training is a series of courses “bundled” by industry sector and occupation. It consists of 10 hours of training for journey-level and 30 hours for frontline supervisors. The coursework is geared to 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 and understand their rights as workers. Equipment and materials not used correctly can also lead to injuries for the worker and puts other people in the area in potential danger.

The following classes will be offered to **Apprentices**:

Commercial Skills (90%) - Apprentices will 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 for any building or structure. This training will provide the skills to perform the following:

- Installing New Wiring and Repairing Old Wiring
- Installing Receptacles, Lighting Systems and Fixtures
- Troubleshooting and Repairing Electrical Systems
- Establishing Grounding Systems
- Installing Service to Buildings and Other Structures
- Providing Power and Controls to Motors, HVAC, and Other Equipment
- Installing Fire Alarm and Security Systems
- Installing, Maintaining and Repairing Lightning Protection Systems

OSHA 10 (10%) - Electricians work under extremely dangerous conditions which require considerable physical effort on the part of the Apprentice such as lifting, climbing, crouching, and working in cramped areas. With the potential for serious injury or death of workers and/or others in the vicinity of the work area, participating employers and property owners need electricians to undergo additional training to ensure that their skills are up to date and that work is performed with optimal efficiency and safety.

Curriculum Development

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. IBEW Local 428 was directly involved in the development of the Curriculum and training plan, and is in full support of the proposed training for its members.

The Apprentice program uses the National Joint Apprenticeship and Training Committee's Curriculum which was developed for the exclusive use of IBEW-NECA JATCs.

Trainer Qualifications

Kern Electrical JATC has two full-time and seven 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

Kern Electrical JATC 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.

Two staff people in the JATC office will assist with marketing, recruitment, needs assessments and scheduling. Kern Electrical JATC 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. Safety training is provided by the participating employers in accordance with all pertinent requirements under state and federal law.

RECOMMENDATION

Staff recommends approval of this proposal.

DEVELOPMENT SERVICES

California Labor Federation in Sacramento assisted with development of this proposal at no charge.

ADMINISTRATIVE SERVICES

Strategy Workplace Communications in Oakland will perform administrative services 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

0-30

OSHA 10/30 (OSHA CERTIFIED INSTRUCTOR)

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

0-10

OSHA 10 (OSHA CERTIFIED INSTRUCTOR)

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 training hours per trainee in Job Number 1, and 210 total hours per trainee in Job Number 2, regardless of the method of delivery.