



Training Proposal for:

Fresno, Madera, Kings & Tulare Counties Electrical Industries Joint Apprenticeship and Training Committee

Agreement Number: ET15-0917

Panel Meeting of: January 22, 2015

ETP Regional Office: Sacramento

Analyst: M. Mazzone

PROJECT PROFILE

| | | | |
|---|--|---------------------|--|
| Contract Attributes: | Apprenticeship Retrainee Priority Rate SB <100 | Industry Sector(s): | Construction Priority Industry: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |
| Counties Served: | Fresno, Madera, Kings, Tulare | 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 Contractors (IBEW) Local 100 | | |
| Turnover Rate: | ≤20% | | |
| Managers/Supervisors: (% of total trainees) | N/A | | |

FUNDING DETAIL:

| | | | | |
|----------------------|---|----------------------|---|--------------------------|
| Program Costs | + | Support Costs | = | Total ETP Funding |
| \$297,000 | | \$20,520 8% | | \$317,520 |

| | | |
|------------------------------|-----------------------------------|----------|
| In-Kind Contribution: | 50% of Total ETP Funding Required | Inherent |
|------------------------------|-----------------------------------|----------|

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 | 75 | 8-200 | 0 | \$564 | \$34.20 |
| | | | | Weighted Avg: 24 | | | |
| 2 | Retrainee Apprenticeship | Commercial Skills OSHA 10 | 99 | 8-210 | 0 | \$2,780 | \$20.55 |
| | | | | Weighted Avg: 200 | | | |

Minimum Wage by County: ETP SET (Priority Industry) wage: \$20.55 per hour.

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

Health benefits may be used to meet the Post-Retention Wage in Job Number 2.

Wage Range by Occupation

| Occupation Titles | Wage Range | Estimated # of Trainees |
|---|------------|-------------------------|
| Job Number 1 | | |
| Journeyman Inside Wireman (Electrician) | | 75 |
| Job Number 2 | | |
| Apprentice Inside Wireman (Electrician) | | 99 |

INTRODUCTION

Fresno, Madera, Kings & Tulare Counties Electrical Industries Joint Apprenticeship and Training Committee (Fresno Electrical JATC) (<http://www.fresnojatc.org/>) provides up-to-date skills training and secures high-quality job opportunities for its members. The Fresno Electrical JATC is governed by a Board of Trustees comprised of labor and management representatives, and is a joint effort of the International Brotherhood of Electrical Workers (IBEW) Local 100 and the National Electrical Contractors Association (NECA). All trainees are members of IBEW Local 100 located in Fresno, Madera, Kings and Tulare Counties (Region).

PROJECT DETAILS

Need for Training

Fresno Electrical JATC trains electricians who install power, lighting, sound, communications, and other electrical equipment in commercial, industrial and residential buildings. This proposal will help fund both Journeyman and Apprentice Electrician training. The Journeyman program is designed to bring worker skills up-to-date as required by California Code of Regulations, Title 24, (California Building Standards) and is governed by the California Building Standards Commission.

Title 24 standards is updated and published every three years. The most recent edition was released January 1, 2014 with an effective date of July 1, 2014. Due to the changes in Title 24, there are new requirements in California's advanced lighting controls acceptance testing. The changes have affected electricians throughout the state as installation and compliance requirements have changed.

In addition to the new regulations, the construction industry is undergoing significant changes as it shifts to "green" building. Building green comes with higher quality standards, increased material cost, and more advanced technology. Experienced journeymen require training to utilize new products, reduce waste and to continue improving efficient working standards. The demand for energy efficient construction has increased significantly and is the future of the industry.

The Apprentice training will prepare trainees with the skills to replace retiring Journeyman Electricians and accommodate the increased need for Electricians in the Region. Through direct engagement of the unionized employers, the apprenticeship program is uniquely designed to place its graduates directly into "learn-while-you-earn" apprenticeships that provide a quality wage and entry into a rigorous trade education leading to a lifelong career within the local community.

Employer Demand

Currently, there are several work projects in the Region that will require Electrician Apprentices and Journeymen.

- 60 Megawatt solar project in Mendota (Fresno County)
- 2 – 20 Megawatt solar projects in Corcoran (Kings County)
- 200 Megawatt solar project beginning May 2015 in Tranquility (Fresno County)
- Expansion to the Court House in Hanford (Kings County)
- Expansion to the Waste Water Treatment plant (City of Fresno)
- Construction of High-Speed Rail in Spring 2015 (Fresno/Madera/Kings counties)

Training is required to be employed on these public and private works projects. Without the proposed training, Fresno Electrical JATC will not be able to help its employers meet the quickly changing needs of the highly competitive construction industry.

Apprenticeship Pilot

Apprenticeship programs were established in California under the Shelley-Maloney Act of 1939. The Panel is authorized to fund Apprentice training so long as it does not displace any other

source of government funds, or replace an existing apprenticeship program approved by the Division of Apprenticeship Standards (DAS). The Pilot provides reimbursement for the Related and Supplemental Instruction (RSI) portion of an apprenticeship-training program. RSI is delivered as class/lab training.

Under the Pilot, ETP will fund RSI that under a curriculum that is developed with a Local Educational Agency (in this case Fresno Unified School District) and is approved by DAS. ETP will also reimburse “ancillary” training that the program sponsor deems necessary for current industry needs. ETP will reimburse up to 200 hours per-trainee for Apprentices (plus 10 for OSHA) and up to 200 hours per-trainee for Journeymen.

Additionally, 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. The JATC is requesting this modified retention period.

To ensure ETP does not displace Montoya Funds, the reimbursement rate is reduced by \$5.00 (from \$18.00 to \$13.00 per hour). Journeymen may also be trained under the Pilot at a “blended” rate of \$22 per hour, which is mid-way between the standard and Small Business priority industry rate (from \$18.00 to \$26.00 per hour).

ETP funding will only apply to apprentices in Year 2+ to ensure commitment. For ease of program administration, the post-retention wage will be SET statewide wage as modified for Priority Industry: \$20.55.

Retention Rate

According to reports published by the DAS for the five-year period 2008 - 2012, the average apprenticeship completion rate for Fresno Electrical JATC is 68.95%. This rate exceeds the Commercial Electrician Industry average at 49.80% placing the JATC above the industry average.

The Fresno Electrical JATC takes responsibility for placing Apprentices with employers and keeping them working. The school graduated 20 Apprentices in 2014 and will graduate 10 in 2015.

PROJECT DETAILS

Fresno Electrical JATC, with input from both labor and management representatives, has customized the national electrical curriculum to address the local needs of its members, participating employers and the industry. The union was directly involved in the development of this curriculum and training plan and is in full support of the training for its members.

Journeyman Electricians (Job Number 1) will receive between 8–200 hours of class/lab training. Apprentices (Job Number 2) will receive between 8–210 hours of class/lab training.

Journeyman Training

Commercial Skills (80%) – Green training is the focus of the program because of 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. Journeymen will also receive training on meeting Title 24 compliance requirements.

Computer Skills (5%) – Training will incorporate changes in software programs due to the industry moving towards energy-efficient construction practices. Electricians will receive job specific software training including: AutoCAD, Scheduling and Planning system and Job Tracking.

Business Skills (5%) - Electricians are faced with understanding new national building codes and green practices; following certification guidelines; using more collaborative bidding and project development practices; meeting budgets; and implementing green solutions in traditional work environments. Training will give tools to plan, organize and manage construction projects to complete them efficiently and on time. Training will also include team-building and leadership skills to lead teams.

OSHA Skills 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.

This training is not required as a condition of doing business in California. However, the coursework must be approved by, and the instructors must be certified by Cal-OSHA.

Completion of the training results in a certificate that expands employment opportunities. To ensure that each trainee receives certification, ETP will only consider payment earned upon completion of the full 10-hour or 30-hour course.

Apprentice Training

Commercial Skills (90%) - Inside Wireman Apprentices learn to install, maintain and repair various types of electrical and electronic equipment. Trainees will also learn to install connect and test: electrical wiring systems for lighting, heating, air conditioning and sound and communications in any building or structure.

OSHA 10 (10%) - Electricians work under extremely dangerous conditions which require considerable physical effort on the part of the apprentice to do lifting, climbing, crouching, and working in cramped areas. There is the potential for injury or death for themselves and other people in the work area vicinity. The participating employers and property owners need electricians to undergo additional training to ensure that their skills are up to date and that they can perform their work efficiently and safely.

Commitment to Training

There are over 40 employers that contribute to the JATC and all participating employers are subject to Unemployment Insurance fund contributions. Each participating employer is bound by the collective bargaining agreement to contribute to the JATC fund and this contracted amount is not affected by the ETP funds being requested.

The JATC has four full-time and six part-time trainers assisting with the training. The trainers are former or current members of the trade and some have received Master Certification status by the National Joint Apprenticeship and Training Committee. The training center is a state-of-the-art facility and promotes a highly productive training environment.

Marketing and Support Costs

The Fresno Electrical JATC is requesting 8% support costs to assist in the recruitment, employer outreach, and assessment of employer-specific job requirements.

Marketing is done through direct mailings, informational flyers, personal contacts, telephone calls, public service announcements, emails, and Fresno Electrical JATC 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 Apprentice program are sent to local, state and federal agencies as well as to local high schools, community colleges, and community-based organizations.

RECOMMENDATION

Staff recommends approval of this proposal.

DEVELOPMENT SERVICES

California Labor Federation (Workforce Economic Development) and Strategy Workplace Communications in Oakland assisted with development at no charge.

ADMINISTRATIVE SERVICES

Strategy Workplace Communications will also perform administrative services for an amount not to exceed 13% of payment earned.

TRAINING VENDORS

To Be Determined

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

8 – 200 (Job 1)

Journeyman Training

Trainees may receive any of the following:

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 Bounding
 - ❖ 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
 - ❖ 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 (CALCTP)
 - ❖ 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

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
- Job Tracking System
- Scheduling & Planning Jobs
- **OSHA 10/30 (Certified OSHA Instructor)**
- OSHA 10 (requires completion of 10 hours)
- OSHA 30 (requires completion of 30 hours)

Class/Lab Hours

8 - 210

Apprentice Training

Trainees may receive any of the following:

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
- 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
 - ❖ 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
- 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 (Certified OSHA Instructor)

- OSHA 10 (requires completion of 10 hours)

Safety training is capped 10% of a trainee's total 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 210 total training hours per trainee. Safety training cannot exceed 10% of total training hours for any individual trainee. This 10% safety training cap does not apply to OSHA 10/30 training.