



Training Proposal for:

**Sacramento Area Electrical Workers Joint Apprenticeship
and Training Committee**

Agreement Number: ET16-0920

Panel Meeting of: January 22, 2015

ETP Regional Office: Sacramento

Analyst: K. Smiley

PROJECT PROFILE

Contract Attributes:	Retrainee Priority Rate Apprenticeship	Industry Sector(s):	Construction Priority Industry: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Counties Served:	Northern California	Repeat Contractor:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Union(s):	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No IBEW Local 340		
Turnover Rate:	≤20%		
Managers/Supervisors: (% of total trainees)	NA		

FUNDING DETAIL

Program Costs	+	Support Costs	=	Total ETP Funding
\$690,315		\$47,840 8%		\$738,155

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 Pre-Apprentice	Commercial Skills, OSHA 10	50	8-200	0	\$4,706	\$15.39
				Weighted Avg: 200			
2	Retrainee Priority Rate Journeymen	Commercial Skills, Business Skills, Computer Skills, OSHA 10/30	200	8-200	0	\$564	\$39.06
				Weighted Avg: 24			
3	Retrainee Priority Rate Apprentice	Commercial Skills	166	8-210	0	\$2,155	\$19.46
				Weighted Avg: 155			
4	Retrainee Priority Rate Apprentice Veterans	Commercial Skills	15	8-210	0	\$2,155	\$19.46
				Weighted Avg: 155			

Minimum Wage by County: \$15.39 per hour 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 \$5.01 per hour may be used to meet the Post-Retention Wage for Job Number 1.

Wage Range by Occupation

Occupation Titles	Wage Range	Estimated # of Trainees
Pre-apprentice Wireman		50
Journeyman Electrician		200
* Apprentice Electrician		181

* Veterans in Job Number 4 earn the same wages as other Apprentices.

INTRODUCTION

Sacramento Area Electrical Workers Joint Apprenticeship and Training Committee (Sac JATC or JATC) (www.340jatc.org), was created through collective bargaining in 1941. Located in Sacramento, the JATC is dedicated to providing up-to-date industry skills that lead to high-quality job opportunities. The JATC is comprised of four labor and four management

representatives, as appointed by the International Brotherhood of Electrical Workers (IBEW) Local 340 for Labor; and the National Electrical Contractors Association (NECA) for Management.

Need for Training

The Sac JATC has seen a growing need for electricians in the past three years. This need is due to their involvement in several new projects including the construction of the Golden 1 Center and the Sacramento Power Authority Cogen Pipeline Project. These projects are driving Sac JATC to take on recent Pre-apprentices and indenture more Apprentices in the years to come. Pre-apprentices start as Construction Wiremen who can promote to Electrician through their apprenticeship.

In order to meet the needs of their participating employers, Sac JATC must hire more Pre-apprentices. The recruited Pre-apprentices must complete 200 hours of training before they can be indentured as apprentices. As the Pre-apprentices complete their 200 hour training program, they begin to take specialized courses that will allow them to choose a focused occupation.

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). ETP funding is designed to supplement cost of delivery for the Related and Supplemental Instruction (RSI) portion of DAS-approved apprenticeship training. Depending on the type of trade, apprenticeship programs vary in length. In this case the program is five years, for all four occupational titles.

Apprentice programs are typically sponsored by a Joint Apprenticeship Training Committee (JATC). A JATC is created through collective bargaining, with an equal number of members appointed by union and management with employer contributions to a training trust fund. 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 case Diablo Valley College). The Apprenticeship Program allows reimbursement for up to 200 hours of RSI plus OSHA10, per-apprentice. (Journeymen are capped at 200 hours.) The trainer-to-trainee ratio for Apprentices is 1:25 and 1:20 for Journeymen.

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.

To ensure ETP does not displace Montoya Funds, Apprenticeship reimbursement is reduced by \$5.00, reducing the priority industry rate from \$18 to \$13 per hour. 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).

The ETP wage for Apprentices is no less than \$21.28 per hour, tracking the Special Employment Training wage as modified for priority industries. However, the actual wages paid are shown in the Training Plan Table and contract when they exceed \$21.28, for both Apprentice and Journeymen.

PROJECT DETAILS

The proposed training is entirely center-based. A new cohort of Apprentice trainees are scheduled to begin in February 2016. The curriculum was developed with national and local input. Separate curriculums have been developed for Pre-apprentices, Apprentices and Journeymen trainees. Some of the course topics in the curriculum have been duplicated but trainees will never receive the same training twice. Apprentice and Journeymen trainees will receive training that builds upon the training they received as Pre-apprentices and Apprentices. Union and management were consulted through joint committees at all levels.

Training Plan

Business Skills (5%): Training will be provided to Journeymen trainees to enhance collaborative bidding and project management practices. Course topics will include team building, leadership, problem solving, advanced time management and project management.

Commercial Skills (85%): Training will be provided to Apprentices, Pre-apprentices and Journeymen trainees on electrical standards and efficiencies. Course topics will include grounding; programmable logic controls and electrical design.

Computer Skills (5%): Training will be provided to Journeymen trainees to enhance understanding of job planning and job scheduling software. Course topics will include Job Tracking System, Scheduling & Planning Jobs and Auto Computer-Aided Design.

OSHA 10/30 (5%): Pre-apprentices trainees will receive OSHA 10 training and Journeymen trainees will receive either OSHA 10 or OSHA 30 training in a series of courses "bundled" by industry sector and occupation. Typically, it is delivered to workers in the building trades.

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. When OSHA is delivered via Computer-Based Training, training hours must be delivered in a classroom over a finite amount of time, and the vendor must have a certified instructor present.

DAS Completion Rates

According to the DAS, the average completion rate for Sac JATC, in the five-year period from 2009-2013, was 73.35%, which exceeds the industry average of 66.31%.

Curriculum Development

Employers submit program-training needs to the training center, which also receives additional union input at labor/management and industry meetings. Curriculum development is further customized for local area employers. Employer members of the JATC are also involved in Journeyman and Apprentice training plan design. Apprentice training will include RSI under the curriculum approved by DAS, along with ancillary training demand by signatory employers. All training will be conducted at the Sac JATC. The trainers are former or current journey level members of the trade and experts in the subject matter.

Commitment to Training

Employers will continue to make contributions to the training trust for every hour worked by apprentice and Journeymen. Safety training is, and will continue to be, provided by the participating employers in accordance with all pertinent requirements under state and federal law.

Veteran Apprentice – Job Number 4

The training curriculum will be the same as above. These trainees are in a separate Job Number to better track performance for this cohort, toward the goal of improved outreach for Veterans overall. Veterans who apply for the Sac JATC apprenticeship program will qualify immediately for an oral interview if they have related military experience.

Impact/Outcome

Apprentices will be certified as journeymen workers once they have completed the entire apprentice curriculum.

Journeymen and Pre-apprentice trainees will receive certifications in Arc Flash Prevention, Lockout/Tagout, and Rigging and Lifting.

Marketing and Support Costs

Marketing is done through its website, direct mailings, brochures/flyers, personal contacts, telephone calls, public service announcements and e-mail announcements. Sac JATC also promotes this training program at labor-management meetings and industry assemblies.

Sac JATC requests 8% support costs to fund its staff in recruiting and qualifying additional participating employers for this program. While many participating employers have already been recruited, additional recruitment and assessment activities with employers and Sac JATC must occur to support apprenticeship training. Staff recommends 8% support costs.

RECOMMENDATION

Staff recommends approval of this proposal.

ACTIVE PROJECTS

The following table summarizes performance by Sac JATC under an active ETP Agreement:

Agreement No.	Approved Amount	Term	No. Trainees (Estimated)	No. Completed Training	No. Retained
ET15-0904	\$335,200	09/02/2014 – 09/01/2016	280	35	35

Based on ETP Systems, 17,148 reimbursable hours have been tracked for potential earnings of \$274,864 (82% of approved amount). The Contractor anticipates completing the contract in February of 2016. The Contractor projects final earnings of 100% based on training currently committed to by employers and in progress through January 2016 of final training.

PRIOR PROJECTS

The following table summarizes performance by Sac JATC under an ETP Agreement that was completed within the last five years:

Agreement No.	Location (City)	Term	Approved Amount	Payment Earned \$ %
ET13-0915	Sacramento	11/1/2012– 10/31/2014	\$331,095	\$290,902 (88%)
ET10-0258	Sacramento	11/2/2009– 11/1/2011	\$74,669	*\$26,041 (35%)

*ET10-0258 ended before the Apprenticeship Pilot Program began. Their performance was impacted by the difficulty of trying to recruit Journeymen for non-mandatory training.

DEVELOPMENT SERVICES

California Labor Federation in Sacramento assisted with development of this proposal for no fee.

ADMINISTRATIVE SERVICES

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

TRAINING VENDORS

To Be Determined

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

8-200

Trainees may receive any of the following:

Apprentice Training**COMMERCIAL SKILLS****2nd Year**

- Orientation, Level II
- Test Instruments, Level I
- Codeology, Level I
- AC Theory, Level I
- Blueprints, Level I
- Electrical Safety-Related Work Practices, Level I
- Transformers, Level I
- Application #5: Conduit Bending
- Application #6: Conduit Bending
- Application #7: Comb. Circuit Wiring
- Application #8: Transformer Connections

3rd Year

- AC Theory
- Blueprints
- Code and Practices
- Electrical Safety-Related Work Practices
- Fire Alarm Systems
- Grounding and Bonding
- Transformers
- Conduit Bending: Rigid & EMT, Chicago & 555
- Lighting Control Panels
- Motor Controls: Relays & Start/Stop
- Cad-Welding
- Ground Testing
- Transformer wiring
- CPR/First Aid Refresher
- COMET

4th year

- Code Calculations
- Blueprints (& layout yard)
- Grounding and Bonding
- Motors
- Motor Control
- Lightning Protection

- Lighting Essentials
- Field Trip to Motor Repair Shop and Folsom Power House
- Motor Controls: Mag Starter & 3-Wire Control
- PLC's
- VFD's
- Motor Control Labs
- Code Prep

5th Year

- Code and Practices
- Code Calculations
- Motor Control
- Orientation
- Rigging
- Torque
- PV/Solar Installer
- CALCTP
- EVITP
- CPR/First Aid Refresher
- Foreman Training: Managing the Work including NECA/IBEW presentations

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 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 (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
- Understanding New Technologies and Changes to Industry Standards
- Proper Equipment Set-Up
- 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

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

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)

Pre-Apprentice Training**COMMERCIAL SKILLS****Construction Wiremen 1**

- Klein Virtual Boot Camp (do in computer lab in 1st week)
- Chapter 2: Atoms & electricity
- Chapter 3: Sources and Characteristics of Electricity
- Chapter 4: Current, Voltage, Resistance, Ohm's Law

Construction Wiremen 2

- Review of CW1 Major Topics Relevant to CW2
- Chapter 5: Simple, Series, and Parallel Circuits
- Chapter 6: Measuring Voltage, Current, and Resistance
- Chapter 7: Ohm's Law
- Chapter 8: Resistors
- First Aid/CPR

Construction Wiremen 3

- Review of CW2 Major Topics relevant to CW3
- Chapter 11: Solving the DC Circuit
- Chapter 12: Solving the DC Parallel Circuit
- Chapter 13: Solving the DC Series-Parallel Circuit
- Prints/Specifications (Overview/Introductory)

Construction Wiremen 4

- Review of CW3 Major topics Relevant to CW4
- Chapter 9: Electricity and Magnetism
- Chapter 15: AC Fundamentals
- Chapter 16: Inductance & Capacitance
- Codeology

Construction Wiremen 5

- Review of CW4 Major Topics relevant to CW5
- Chapter 20: Circuit Conductors & Wire Sizes
- Chapter 21: Fuses & Circuit Breakers
- Grounding
- Chapter 22: Relays
- Chapter 23: Lighting Equipment
- Basic Lighting Controls
- Related NEC Content

Construction Wiremen 6

- Review of CW5 Major Topics Relevant to CW6
- Chapter 19: Transformers
- Chapter 24: AC Motors
- Motor Controls (Overview & Introductory)
- PV/Solar (Overview & Introductory)
- Uses of PLC's/ VFD's (Overview & Introductory)
- Alarms & Signaling Systems (Overview & Introductory)
- Related NEC Content

OSHA 10 (OSHA CERTIFIED INSTRUCTOR)

- OSHA 10 (10 hours for Completion)

Safety Training cannot exceed 10% of total training hours per-trainee

Note: Reimbursement for retraining is capped at 200 total training hours per trainee, regardless of the method of delivery.