



Training Proposal for:

**San Francisco Electrical Industry Apprenticeship and Training Trust
Agreement Number: ET17-0904**

Panel Meeting of: August 26, 2016

ETP Regional Office: San Francisco Bay Area **Analyst:** D. Woodside

PROJECT PROFILE

Contract Attributes:	Retrainee Priority Rate Apprenticeship Veterans	Industry Sector:	Construction Priority Industry: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Counties Served:	San Francisco	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 6		
Turnover Rate:	≤20%		
Managers/Supervisors: (% of total trainees)	N/A		

FUNDING DETAIL:

Program Costs	+	Support Costs	=	Total ETP Funding
\$516,320		\$35,640 8%		\$551,960

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	Journeyman Priority Rate	Commercial Skills, Business Skills, Computer Skills, OSHA10/30	190	8-200	0	\$564	\$67.25
				Weighted Avg: 24			
2	Apprentice	Commercial Skills, OSHA10/30	140	8-210	0	\$2,780	\$28.80
				Weighted Avg: 200			
3	Veteran Apprentice	Commercial Skills, OSHA10/30	20	8-210	0	\$2,780	\$28.80
				Weighted Avg: 200			

Minimum Wage by County: \$21.28 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

Although health benefits are provided, they are not being used to meet the Post-Retention Wage.

Wage Range by Occupation

Occupation Titles	Wage Range	Estimated # of Trainees
Journeyman Electrician (Inside Wireman)		190
Apprentice Electrician (Inside Wireman)		140
Veteran Apprentice Electrician (Inside Wireman)		20

INTRODUCTION

Established in 1962, the San Francisco Electrical Industry Joint Apprenticeship and Training Trust (SF Electrical JATC) www.sfelectricaltraining.org is a cooperative effort between the San Francisco Chapter of the National Electrical Contractors Association (NECA) and the International Brotherhood of Electrical Workers (IBEW) Local Union 6. SF Electrical JATC serves approximately 391 Apprentices and 1,200 Journeymen.

673 employers are signatory to the collective bargaining agreement. Approximately 70% of these employers are small businesses. Participating employers perform specialized construction work related to the design, installation, and maintenance of electrical systems in commercial, industrial, and residential buildings. SF Electrical JATC recruits and trains apprentices to meet the expanding and rapidly changing needs of San Francisco's electrical industry. Additionally, the JATC provides skills upgrade and improvement courses to Journeymen.

The JATC's training program keeps Journeymen and Apprentices technologically current in various fields including energy efficiency systems, computerized layout, and a new level of infrastructure for energy systems and telecommunications.

Employer Demand

The local hiring demands of the City and County of San Francisco have been considered for this funding request. Large and small infrastructure projects continue to generate the need for electricians who are able to work on more technically advanced construction projects. Examples include the Warriors Stadium, Bayview/Hunters Point Development, Treasure Island Development, Pier 70 Redevelopment, Park Merced and Visitation Valley Redevelopment, Cathedral Hill Hospital, and Transbay Terminal construction.

This will be the fifth Agreement between ETP and SF Electrical JATC. However, this is the first time Veterans have been included as a discrete cohort of Apprentice trainees. This JATC is returning to the Panel for funding at this time because all training has been delivered under its fourth Agreement. This new proposal is driven by the demand of employers for skilled apprentices and journeymen electricians in San Francisco. The JATC expects an increase in the number of apprentices graduating from this five-year program: from 20 in the Spring of 2016 (the first class to graduate in three years) and 18 more in the Fall of 2016, to 48 graduates planned in the Spring of 2017 alone.

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 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.

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 Foothill College). The Apprenticeship Program allows reimbursement for up to 200 hours of RSI plus OSHA10, per-apprentice. (Journeymen are capped at 200 hours.)

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 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 the SET Statewide rate as modified for priority industries (\$21.28 per hour). ETP funding will only apply to apprentices in Year 2+ to ensure commitment.

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 Apprentices and Journeymen.

PROJECT DETAILS

All training outlined in this proposal will be center-based, classroom/laboratory training occurring at the JATC's training facility in San Francisco. Journeymen will receive Commercial Skills, Business Skills, Computer Skills, and OSHA 10/30; Apprentices and Veteran Apprentices will receive Commercial Skills and OSHA 10/30 training.

Journeyman

Commercial Skills (80%) – Electrician/Inside Wiremen install, maintain and repair various types of electrical and electronic equipment in commercial, industrial and residential establishments. They also learn to install, connect, and test electrical wiring systems for lighting, heating, air conditioning, and communications in any building or structure. In San Francisco, industry is undergoing significant change due to the emergence of green technology. Green training is expected to be the centerpiece of the new program because of the demand for energy efficient construction methods and technologies. The shift from analog to digital equipment also dictates the need for extensive retraining.

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. ETP-funded 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. 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 delivery is by CBT, all training hours must be delivered in a classroom over a finite number of time, and the vendor must have a certified instructor present to confirm attendance.

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. OSHA 10/30 is not included in the 10% limitation on safety training, nor in the 50% limitation on CBT.

Apprentice

Commercial Skills (95%) The Inside Wireman Apprenticeship is a 5-year program comprised of school and hands-on training. The apprentice electrician works directly under the supervision of

a qualified journeyman electrician and assists with installing and/or maintaining a variety of approved wiring methods for distribution of electrical light, heat, power, radio and signaling utilization systems. Leadership (also called Foreman Training) training will be provided for upper level apprentices so that they develop the skills to make them eligible for foreman work after they become a journeylevel electrician.

COMET (Construction Organizing Membership Education Training) is a course to teach apprentices how to work onsite with other workers both union and nonunion. The JATC states that this is a very important class because there can be differences and challenges between employees which can lead to an unproductive workplace. The title of the course is misleading because it is not a class to teach union organizing or recruitment. It is essentially a teambuilding class for apprentices.

OSHA 10/30 (5%) This training provides a complete overview of occupational safety and health so that construction workers are more knowledgeable about workplace hazards. With OSHA 30, apprentices will also learn how to respond to such hazards.

Veteran Apprentice

The Veteran training curriculum will be the same as Apprentice training outlined above. These trainees are in a separate Job Number to better track performance toward the goal of improved outreach for Veterans.

The JATC is committed to supporting job-related training that helps Veterans transition into the California workforce. Veterans in an Apprenticeship are eligible to receive Montgomery GI Bill benefits, such as a Monthly Housing Allowance. These benefits are paid directly to the Veteran trainees. SF Electrical JATC recruits Veterans in cooperation with Helmets-to-Hardhats, a national joint labor-management program that recognizes the link between skills acquired in military service and the building trades. On its website, the JATC advertises special days just for Veterans to apply for the apprenticeship program. Veterans who apply for an apprenticeship can skip the first stage (the written assessment) and go the second stage (the interview).

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

SF Electrical JATC employs 4 full and 18 part-time trainers. All trainers are former or current members of the trade and the director of the school has received Master Certification status by the National Joint Apprenticeship and Training Committee. In addition, all instructors meet standards set by the LEA.

Impact/Outcome

Upon successful completion of the program, each Apprentice will receive Certificates of Completion from the State of California DAS, the Department of Labor, the National Joint Apprenticeship and Training Committee for the Electrical Industry, and Foothill College.

Certifications for Apprentices and Journeymen may include Arc Flash Safety Awareness, Building Automation Systems, Green Audits, California Advanced Lighting Control Program (CALCTP) Installer and Lighting Acceptance Testing, and Title 24 Lighting Installation and Codes. Apprentices and Journeymen may also receive OSHA 10/30 certifications.

Commitment to Training

The JATC represents that signatory employers will continue to pay into the Trust for Journeyman and Apprentice training. In addition, employers must provide structured, on-the-job training for apprentices that meet DAS standards. ETP funds supplement and do not displace employer contributions to training. Safety training is provided by the participating employers in accordance with all requirements under state and federal law.

Marketing and Support Costs

The JATC is requesting 8% in support costs to fund its staff in recruiting and qualifying additional participating employers for this program. JATC staff also assist with the marketing, recruitment, and needs assessments of trainees and employers.

The JATC will publicize its training through brochures/flyers, personal contacts, the web, public service announcements and presentations at labor-management meetings and industry assemblies. While many participating employers have already been recruited, additional recruitment and assessment activities are still required. The JATC employs six staff to assist with marketing, recruitment, and needs assessments. The JATC reports that its projected budget costs for personnel alone will exceed the ETP support cost funding. Staff recommends 8% support costs.

RECOMMENDATION

Staff recommends approval of this proposal.

ACTIVE PROJECTS

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

Agreement No.	Approved Amount	Term	No. Trainees (Estimated)	No. Completed Training	No. Retained
ET16-0903	\$670,400	09/08/15-09/07/17	560	466	0

Based on ETP Systems, 40,587 reimbursable hours had been tracked as of July 20, 2016 for potential earnings of \$597,211 (89% of approved amount). Training was completed on July 31, 2016 with projections for final earnings at 100%.

PREVIOUS PROJECTS

The following table summarizes performance by SF Electrical JATC under previous ETP Agreements:

Agreement No.	Location (City)	Term	Approved Amount	Payment Earned \$ %
ET14-0914	San Francisco	03/03/2014 – 03/02/2016	\$405,376	\$405,376 (100%)
ET13-0916	San Francisco	10/29/12 – 10/28/2014	\$340,178	\$340,178 (100%)
ET10-0215	San Francisco	09/28/09 – 09/27/2011	\$184,450	\$21,875 (12%)

ET10-0215 was approved by the Panel prior to the establishment of the Apprenticeship Pilot program and thus focused on Journeymen training. Funds earned were lower than anticipated because Journeymen electricians, who often are employed at later stages of construction, were still experiencing less than full-employment.

DEVELOPMENT SERVICES

California Labor Federation in Sacramento and Strategy Workplace Communications in Oakland assisted with development at no cost.

ADMINISTRATIVE SERVICES

Strategy Workplace Communications will also perform administrative services for an amount 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**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)

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)

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 Numbers 2 & 3) Trainees may receive any of the following:

APPRENTICE

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 (Construction Organizing Membership Education)

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
- Programmable Logic Controls (PLC's)
- Variable Frequency Drive (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
- Leadership (Foreman Training): Managing the Work including NECA/IBEW Presentations

OSHA 10/30 (OSHA CERTIFIED INSTRUCTOR)

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

Note: Reimbursement for Job Number 1 Journeymen retraining is capped at 200 total training hours per trainee regardless of the method of training delivery. Reimbursement for Job Numbers 2 and 3 Apprenticeship training is capped at 200 total training hours per trainee in Commercial Skills and 10 hours of either OSHA10 or 30 for a total of 210 hours regardless of the method of training delivery.