



Training Proposal for:

Santa Clara County Electrical Joint Apprenticeship and Training Trust

Agreement Number: ET17-0906

Panel Meeting of: September 23, 2016

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

PROJECT PROFILE

| | | | |
|---|--|--------------------|--|
| Contract Attributes: | Retrainee Priority Rate Apprenticeship Veterans | Industry Sector: | Construction Green Technology Priority Industry: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |
| Counties Served: | Santa Clara | 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 (IBEW) Local 332 | | |
| Turnover Rate: | ≤20% | | |
| Managers/Supervisors: (% of total trainees) | N/A | | |

FUNDING DETAIL:

| | | | | |
|----------------------|---|----------------------|---|--------------------------|
| Program Costs | + | Support Costs | = | Total ETP Funding |
| \$468,800 | | \$32,400 8% | | \$501,200 |

| | | |
|------------------------------|-----------------------------------|----------|
| 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 | Journeyman | Commercial Skills, Business Skills, Computer Skills, OSHA10/30 | 100 | 8-200 | 0 | \$564 | \$32.37 |
| | | | | Weighted Avg: 24 | | | |
| 2 | Apprentice | Commercial Skills, OSHA10/30 | 140 | 8-210 | 0 | \$2,780 | \$21.28 |
| | | | | Weighted Avg: 200 | | | |
| 3 | Apprentice Veteran | Commercial Skills, OSHA10/30 | 20 | 8-210 | 0 | \$2,780 | \$21.28 |
| | | | | 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
 Up to \$0.24 per hour may be used to meet the Post-Retention Wage for Job Numbers 2 and 3.

| Wage Range by Occupation | | |
|--|------------|-------------------------|
| Occupation Titles | Wage Range | Estimated # of Trainees |
| Journeyman Electrician/Inside Wireman | | 60 |
| Apprentice and Veteran Apprentice Electrician/Inside Wireman | | 100 |
| Journeyman Residential Electrician | | 40 |
| Apprentice and Veteran Apprentice Residential Electrician | | 60 |

INTRODUCTION

The Santa Clara County Electrical Joint Apprenticeship and Training Trust (Santa Clara JATT) <http://www.ejatic332.org> was founded in 1958. The trust is funded through collective bargaining between signatory employers that are members of the National Electrical Contractors Association (NECA) and the International Brotherhood of Electrical Workers (IBEW) Local 332.

Santa Clara JATT currently serves approximately 490 Apprentices and 2,200 Journeymen. The JATT sponsors two apprenticeship programs: Inside Wireman (5 years) and Residential Electrician (3 years). Apprentices learn to work on electrical systems and component wiring, such as: power distribution systems, electrical panels, conduit, piping, test equipment, transformers, motors, grounding, over-current protection, security, solar, and home automation.

The JATT provides skills upgrade courses to keep Journeymen technologically current. Journeymen need new certifications and skills to install, maintain, and integrate a wide variety of electrical systems. The JATC must also prepare Journeymen and Apprentices to meet green electrical standards as they evolve under legislation, regulations and local initiatives.

Employer Demand

Apprentices and Journeymen will work in Silicon Valley, building and maintaining facilities for California's high technology companies. High profile projects include the ongoing expansion of Apple Corporation headquarters which is estimated to require up to 500 electricians working under three different construction contractors. There is also the BART extension into San Jose; the Lucille Packard Children's Hospital expansion; the new Stanford Hospital; and the Santa Clara Square office, retail, and residential development.

This proposal will emphasize advanced training to meet local employer demand for specialized skills and critical employer-mandated certifications. In addition, both Apprentices and Journeymen will gain skills in emerging technologies focusing on clean energy, the shift from analog to digital equipment, testing and auditing equipment, and new programmable control systems. In addition, changes in the California Energy Codes will require buildings to be more efficient by integrating lighting systems, HVAC systems and the building envelope to operate symbiotically. Electricians need to install, maintain, and integrate a wide variety of systems and because this industry is constantly evolving, upgrade training (which often leads to certifications) is mandatory.

This is the Santa Clara JATT's fourth ETP Agreement. However, this is the first time Veterans have been included as a discrete cohort of Apprentice trainees.

The JATT is returning to the Panel for funding at this time because all training has been delivered under its most recent Agreement. The additional funding is driven by the demand of employers for skilled apprentices and journeymen electricians in Northern California. The JATT needs to train more apprentices to meet employer demand. The number of apprentices has grown from 363 to 490 in one year.

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 programs are five and three 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 OSHA10/30, 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 is center-based and trainers are qualified Journeymen with extensive practical and training experience. 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.

Training Plan

Training will be conducted at the JATT Santa Clara Training Center in San Jose. This is a 30,000-square-foot, state-of-the-art facility with numerous computer and technical labs in addition to classrooms.

Journeyman

Commercial Skills (80%) – Training will improve electrician skills installing, maintaining and repairing various types of electrical and electronic equipment in commercial, industrial and residential establishments. They will also learn advanced skills for installing, connecting, and testing electrical wiring systems for lighting, heating, air conditioning, and communications in any building or structure. Trainees may receive specialized training that may include courses leading to certification. Santa Clara JATT has been certified by Electric Power Research Institute as the only nationally-certified lab and testing facility in Northern California to certify Level B Technicians.

Electricians are faced with understanding and following Title 24 requirements, new National Electrical Codes (NEC), higher safety standards and green practices. Electricians often work with high voltage, and the potential for injury or death for themselves and others is significant. OSHA training is no longer enough. For example, ARC-Flash 70E training will be offered so that trainees will be able to avoid electrical explosions and wear appropriate protection should an explosion occur. Also, in the NFPA-70E safety class electricians learn how to meet the electrical safe work standards set by OSHA. Many employers are now requiring that electricians take such classes before the workers are allowed on a worksite.

Business Skills (5%) - Training will focus on using more collaborative bidding and project development practices; meeting budgets; interacting with other types of construction workers; and implementing green solutions in traditional work environments. The proposed training will give trainees the tools to plan, organize, and manage construction projects so that they can complete them efficiently and on time. Training will also include team-building and leadership skills so that electricians can participate and 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%) - Because electricians work under extremely dangerous conditions and on tight timelines, there is the potential for injury or death for themselves and other people in the work area vicinity. This work requires excellent hand/eye/foot coordination and quick decision-making. The participating employers and property owners need electricians to undergo additional training to ensure that they can perform their work efficiently and safely.

Apprentice

Commercial Skills (90%)

The apprentice electrician works directly under the supervision of a qualified journeyman electrician in installing or maintaining a variety of approved wiring methods for distribution of electrical light, heat, power, radio and signaling utilization systems in existing or new buildings including street and highway lighting, traffic signals and other outdoor above and below grade installations.

Inside Wireman Apprentices will learn to install, maintain and repair various types of electrical and electronic equipment in commercial, industrial and residential establishments. Training will also include installing, connecting and testing electrical wiring systems for lighting, heating, air conditioning and communications in any building or structure. The Inside Wireman Apprentice program is a five-year training program.

Residential Wireman Apprentices will learn to install and connect electrical systems in homes, condos and apartments. Today's homes are being equipped with computer networks, energy management systems, security systems, fire alarm systems, and new power distribution systems. Residential Wiremen must have the knowledge and the skills necessary to make these systems work for today's homeowner. Residential Wireman apprentice program is a three-year training program.

OSHA 10/30 (10%) This training provides a complete overview of occupational safety and health so that construction workers are more knowledgeable about workplace hazards. With OSHA30, apprentices will also learn how to respond to such hazards.

Certified Safety Training

OSHA 10/30: Training is a series of courses "bundled" by industry sector and occupation. 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.

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 JATT is committed to supporting job-related training that helps Veterans transition into the California workforce. It recruits Veterans in cooperation with Helmets to Hardhats, (<http://www.helmetstohardhats.org>), a national joint labor-management program that recognizes the link between skills acquired in military service and the building trades. Veterans who apply for an apprenticeship with the Santa Clara JATT can skip the first stage (the written assessment) and go the second stage (the interview).

Curriculum Development

Santa Clara JATT, with input from both labor and management representatives, has developed and customized the national electrical curriculum to address the local needs of its members, participating employers, and the construction industry. The apprentice program uses the National Joint Apprenticeship and Training Committee's Curriculum which was developed for the exclusive use of IBEW-NECA JATC'S. The Journeyman curriculum meets the needs of the participating employers because it is employer-driven and based on local hiring demands in Santa Clara County. An example of a customized course trains electricians to work with green materials on more technically advanced construction projects. Feedback on the curricula also comes directly from employers and union representatives based on workplace performance, customer requests, industry feedback, and course evaluations completed by trainees.

Impact/Outcome

Upon successful completion of the apprenticeship program, each Apprentice will receive Certificates of Completion from: National Santa Clara Electrical JATT; State of California DAS; and from Foothill Community College. Apprentices also receive an OSHA 10/30 certification upon completion of training.

Certifications for both journeymen and apprentices may also 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.

Commitment to Training

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

Marketing and Support Costs

Santa Clara JATT is requesting 8% in support costs to fund recruiting and qualify additional participating employers for this program. There are five staff members in the JATC office assisting with the marketing, recruitment, and needs assessments. While many participating employers have already been recruited, additional recruitment and assessment activities with employers and the JATT must occur to support apprenticeship training. The projected budget costs for personnel alone will exceed the ETP support cost funding. The JATT will cover these additional costs.

Program information is disseminated through direct mailings, informational flyers, personal contacts, telephone calls, public service announcements, emails, and the website throughout the year. Application announcements for the apprentice program are disseminated to local, state and federal agencies as well as to local high schools and community colleges. Community-based organizations are also included in this effort (mailings and onsite job fairs). Staff recommends 8% support costs.

RECOMMENDATION

Staff recommends approval of this proposal.

ACTIVE PROJECTS

The following table summarizes performance by Santa Clara JATT under an active ETP Agreement:

| Agreement No. | Approved Amount | Term | No. Trainees (Estimated) | No. Completed Training | No. Retained |
|---------------|-----------------|-----------------------|--------------------------|------------------------|--------------|
| ET16-0905 | \$557,600 | 09/08/2015-09/07/2017 | 360 | 307 | 34 |

Based on ETP Systems, 33,314 reimbursable hours had been tracked as of August 4, 2016 for potential earnings of \$474,665 (over 85% of the approved amount). The Contractor projects final earnings of 100% based on training completed in August 2016.

PRIOR PROJECTS

The following table summarizes performance by Santa Clara JATT under an ETP Agreement that was completed within the last five years:

| Agreement No. | Location (City) | Term | Approved Amount | Payment Earned \$ % |
|---------------|-----------------|-----------------------|-----------------|------------------------|
| ET14-0915 | San Jose | 03/03/2014-03/02/2016 | \$328,640 | \$328,640 (100%) |
| ET13-0913 | San Jose | 10/22/2012-10/21/2014 | \$360,907 | \$360,907 (100%) |

DEVELOPMENT SERVICES

Santa Clara JATT retained California Labor Federation in Sacramento and Strategy Workplace Communications in Oakland to assist with development at no cost.

ADMINISTRATIVE SERVICES

Santa Clara JATT also retained Strategy Workplace Communications to 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-hour course)
- OSHA 30 (requires completion of 30-hour course)

Apprentice

Class/Lab Hours

8-210 (Job Numbers 2 & 3)

Trainees may receive any of the following:

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

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.

Note: Reimbursement for Job Number 1 training is capped at 200 total training hours per trainee, regardless of the method of training delivery. Reimbursement for Job Numbers 2 & 3 Apprentices is capped at 200 total training hours per trainee in Commercial Skills and 10 hours of OSHA10/30 for a total of 210 hours.