Training Proposal for:

Alameda County Electrical Industry Apprenticeship and Training Trust

Agreement Number: ET17-0924

Panel Meeting of: February 23, 2017

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

PROJECT PROFILE

<table>
<thead>
<tr>
<th>Contract Attributes:</th>
<th>Industry Sector:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Retrainees</td>
<td>Construction</td>
</tr>
<tr>
<td>Priority Rate</td>
<td>Green Technology</td>
</tr>
<tr>
<td>Apprenticeship</td>
<td></td>
</tr>
<tr>
<td>Veterans</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Counties Served:</th>
<th>Repeat Contractor:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alameda</td>
<td>Yes</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Union(s):</th>
<th>Turnover Rate:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>≤20%</td>
</tr>
<tr>
<td>No</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Managers/Supervisors:</th>
<th>(%) of total trainees</th>
</tr>
</thead>
<tbody>
<tr>
<td>N/A</td>
<td></td>
</tr>
</tbody>
</table>

FUNDING DETAIL

<table>
<thead>
<tr>
<th>Program Costs</th>
<th>Support Costs</th>
<th>Total ETP Funding</th>
</tr>
</thead>
<tbody>
<tr>
<td>$468,800</td>
<td>$32,400</td>
<td>$501,200</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>In-Kind Contribution:</th>
<th>50% of Total ETP Funding Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inherent</td>
<td></td>
</tr>
</tbody>
</table>
INTRODUCTION

The Alameda County Electrical Industry Apprenticeship and Training Trust (Alameda Electrical Trust) (www.595jatc.org) is a joint labor-management organization between the Northern California Chapter, National Electrical Contractors Association and the Local 595 International Brotherhood of Electrical Workers. Founded in 1946, the Trust provides funds for training in electrical inside wiring for Apprentice, Pre-Apprentice and Journeyman.

The Board of Trustees is comprised of four labor representatives and four management representatives (an estimated 346 employers). The same composition is true for the Alameda County Electrical Joint Apprenticeship and Training Committee, sponsor of the program. 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.

In May of 2013, the Alameda Electrical Trust opened its new Zero Net Energy Training Center in San Leandro. The training center is one of only a handful of U.S. Department of Energy-designated “zero net energy” buildings in the nation. This unique, state-of-art training facility continues to help Electricians prepare for California’s energy conservation and renewable energy efforts.
The Trust currently serves 200 apprentices, 1,652 journeymen, and 30 pre-apprentices. This is the Trust’s sixth ETP project and the fourth within the last five years (see Active and Prior Project Tables at end of this memo).

Electricians plan, install, test, repair and maintain electrical equipment that provide light, heat, communications, and power. It is the Trust’s mission to ensure workers have the most advanced technology skills training possible. In addition, the Trust provides training, which helps decrease the frequency of workplace accidents and injury. To be competitive in today’s green construction industry, Electricians require the skills to install green electrical systems as well as meet Title 24 requirements. Title 24 mandates the use of automated lighting control devices and automatic plug load circuit controls.

Because of new regulations, many contractors in the construction industry are requiring multiple certifications for both Apprentices and Journeymen. The Trust has to ensure that additional instructors are certified to deliver more frequent and various types of certification classes. In addition, many of the certification classes require new classroom training equipment. Without support from ETP funding, these new costs would mean that the Trust would hold fewer classes and serve fewer workers. ETP funding will help expand its classes to meet employer demand for certified workers, and to train the growing number of newly registered Apprentices.

**Employer Demand**

As Journeyman Electricians retire and new work develops in Alameda County, training will ensure that there are enough qualified Electricians to meet the needs of employers in Alameda County. The Trust will supply Electricians to work on the Oakland Army Base, several hospitals under construction (Kaiser Hospital in Pleasanton and Alta Bates). Work is continuing on the BART extension from Fremont to Warm Springs, and on school projects at the various Alameda County school districts, at the University of California Berkeley campus, and the Port of Oakland. In addition, there are numerous commercial new construction and retrofit projects.

The Alameda Electrical Trust is requesting funding for Apprentice and Journeyman training. Apprentices will receive training on the Related and Supplemental Instruction (RSI) curriculum which is required to become journeymen electricians. Training for Journeymen will expand green training topics that will meet new state energy efficiency goals and employer-driven certification classes. With this additional ETP funding, the Trust will be able to train more Journeymen to meet employer demand.

The Trust is returning to the Panel for funding at this time because all training has been delivered under its most recent Agreement. Employer demand for Apprentices remains high, and in response, the Trust continues to expand the number of Apprentices it trains. In 2016, the Trust graduated 36 apprentices, and plans to graduate 47 in 2017. This is the first time Veterans have been included as a discrete cohort of Apprentice trainees.

**Apprenticeship Pilot**

Apprentice training may not displace any other source of government funds, or replace an existing apprenticeship program approved by the Division of Apprenticeship Standards (DAS). As such, ETP funding supplements the 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 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, 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 $22.04 per hour. However, the actual wages paid are shown in the Training Plan Table and contract when they exceed $22.04, for both Apprentices and Journeymen.

PROJECT DETAILS

Training Plan

All class/lab training is center-based and delivered at the Trust’s training center in San Leandro. All trainers are former or current members of the trade and subject matter experts. All instructors meet standards set by the LEA.

Journeyman Training

Commercial Skills (80%): Journeyman training will bring skills and knowledge up-to-date. ETP funds will help to expand the Journeyman upgrade program, including the addition of green training topics that will help the employers meet new state energy efficiency goals and employer-driven certification classes, such as passing Green audits, NFPA-70 E (National Fire Protection Association), Arc Flash and Building Automation Lighting and Plug Load Systems.

The Trust is constantly refining and adding to its curriculum to meet changing technology and modernization occurring in the electrical industry. One example is a new class in Micro-Grid/Energy Storage. This class will teach electricians how to work with batteries used to store solar power. Battery plants will be built next to solar energy sources so that the storage of solar power created during the day can be used at night.

Business Skills (5%): Training will enable Electricians to use more collaborative bidding and project development practices; meet budgets; interact with other types of construction workers and implement green solutions in traditional work environments. Further, training will give trainees the latest tools to plan, organize and manage their construction projects so that they can complete projects efficiently and on time. Training will also include team-building and leadership.

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%): 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. The vendor must also 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 or 30-hour course.

**Apprenticeship Training**

**Commercial Skills (90%)**: Apprentice Electricians work directly under the supervision of a qualified Journeyman Electrician to install or maintain 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 signal and other outdoor above and below grade installations. Apprentices must learn to install, maintain, and repair various types of electrical and electronic equipment in commercial, industrial and residential establishments. Training will also include how to install, connect and test: electrical wiring systems for lighting, heating, air conditioning and communications in any building or structure.

**OSHA 10 (10%)**: This training provides an overview of occupational safety and health so that apprentices are more knowledgeable about workplace hazards and stringent safety standards in the electrical industry.

**Certified Safety Training**

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

Journeymen and Apprentice Electricians and related occupations may work under extremely dangerous conditions and on tight timelines. Thus, there is the potential for injury to themselves and other people in the work area vicinity. Participating employers and property owners may need trainees to undergo additional training to ensure that they can perform their work safely.

**Veteran Apprentices**

The Veteran training curriculum will be the same as Apprentice training outlined above. The Trust is committed to supporting job-related training that helps Veterans transition into California’s 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 at the Alameda Electrical Trust can skip the first stage of the application process (the written assessment) and go directly to the second stage (the interview).

**Curriculum Development**

Alameda Electrical Trust uses the National Joint Apprenticeship and Training Committee’s Curriculum for its apprenticeship program, which was developed for the exclusive use of IBEW-NECA JATC’S. The Journeymen curriculum meets the needs of the participating employers because it is employer-driven and based on feedback directly from employers. In addition, the curriculum is reviewed by union representatives of the JATC, and revisions and updates are made based on workplace performance, requests of customers, the needs of the local electrical industry, as well as course evaluations completed by all trainees.
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

Alameda Electrical Trust requests, and staff recommends, 8% in support costs to fund its staff for recruiting and qualifying additional participating employers for this program. There are five staff people assisting with the Trust’s marketing and recruitment efforts. These efforts include direct mailings, informational flyers, personal contacts, telephone calls, public service announcements, emails, and the web. Apprenticeship application announcements are disseminated to local, state and federal agencies as well as to local high schools, community colleges, and community-based organizations. Staff also participates in local job fairs.

While many participating employers have already been recruited, additional recruitment and assessment activities with employers must occur to support apprenticeship and journeymen training. The Trust agrees to cover any additional costs which exceed the ETP support costs.

RECOMMENDATION

Staff recommends approval of this proposal.

ACTIVE PROJECTS

The following table summarizes performance by the Alameda Electrical Trust under an active ETP Agreement:

<table>
<thead>
<tr>
<th>Agreement No.</th>
<th>Approved Amount</th>
<th>Term</th>
<th>No. Trainees (Estimated)</th>
<th>No. Completed Training</th>
<th>No. Retained</th>
</tr>
</thead>
<tbody>
<tr>
<td>ET16-0908</td>
<td>$492,740</td>
<td>9/8/2015-9/7/2017</td>
<td>213</td>
<td>80</td>
<td>0</td>
</tr>
</tbody>
</table>

Based on ETP Systems, 25,785 reimbursable hours has been tracked as of December 7, 2016 sufficient to support earnings of $337,013 (75%). The Contractor projects final earnings of 100%. Training will be completed by the January 2017 Panel meeting, and invoices will have been submitted resulting in retentions.

PRIOR PROJECTS

The following table summarizes performance by the Alameda Electrical Trust under ETP Agreements completed within the last five years:

<table>
<thead>
<tr>
<th>Agreement No.</th>
<th>Location (City)</th>
<th>Term</th>
<th>Approved Amount</th>
<th>Payment Earned $</th>
<th>Payment Earned %</th>
</tr>
</thead>
<tbody>
<tr>
<td>ET14-0912</td>
<td>San Leandro</td>
<td>3/3/2014-3/2/2016</td>
<td>$358,107</td>
<td>$358,107 (100%)</td>
<td></td>
</tr>
<tr>
<td>ET13-0914</td>
<td>San Leandro</td>
<td>10/22/2012-10/21/2014</td>
<td>$354,796</td>
<td>$320,451 (90%)</td>
<td></td>
</tr>
</tbody>
</table>
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
JOURNEYMAN
8-200 (Job Number 1)

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 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 & Auditing Materials & Equipment (Green Training)
  - Understanding New Technologies & Changes to Industry Standards (Green Training)
  - Proper Equipment Set-Up (Green Training)
  - Safe Working
  - 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 & Use (Green Training)
  - Understanding New Technologies and Changes to Industry Standards (Green Training)
  - Micro-Grid/Energy Storage
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

BUSINESS SKILLS
- Teambuilding Skills
- Green Awareness Training & Green Certifications
- Leadership Skills
- Customer Service Skills
- Conflict Resolution
- Problem Solving
- Decision Making Skills
- Inventory Checklist
- Advanced Time Management
- Filling Out Work Documents & Reports Accurately
- Project Management
- Creating Project Bids

COMPUTER SKILLS
- Auto Computer-Aided Design
- 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)

APPRENTICE

Class/Lab Hours
8-210 (Job Numbers 2 & 3)

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 & 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

OSHA 10 (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 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 OSHA10/30 for a total of 210 hours regardless of the method of training delivery.