Training Proposal for:

Northern California Construction Inspectors Joint Apprenticeship Committee
Agreement Number: ET15-0900

Panel Meeting of: June 27, 2014

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

PROJECT PROFILE

Contract Attributes:	Retrainee Apprentice Pre-Apprentice	Industry Sector(s):	Construction Priority Industry: ☒ Yes ☐ No
Counties Served:	46 Northern California Counties	Repeat Contractor:	☐ Yes ☒ No
Union(s):	☒ Yes ☐ No International Union of Operating Engineers Local No. 3		
Turnover Rate:	N/A		
Managers/Supervisors: (% of total trainees)	N/A		

FUNDING DETAIL

Program Costs	+	Support Costs	=	**Total ETP Funding**
$224,000		$15,520 8%		$239,520

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 Pre-Apprentice	Commercial Skills	40	8-200	0	$3,764	$21.48
				Weighted Avg: 160			
2	Retrainee Apprentice	Commercial Skills	80	8-200	0	$1,112	$23.44
				Weighted Avg: 80			

Minimum Wage by County: Statewide (Priority Industry) $20.32

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

Wage Range by Occupation		
Occupation Titles	Wage Range	Estimated # of Trainees
Construction Inspector Pre-Apprentice		40
Construction Inspector Apprentice		80

INTRODUCTION

The Northern California Construction Inspectors Joint Apprenticeship Committee (NCCIJAC) (http://www.oe3.org/about/testing) is a joint labor-management committee made up of representatives from the inspection and testing industry through its trade association, The Council of Engineer and Laboratory Employers. The JAC was established in 2005; however, the current apprenticeship standards were only enacted in 2012. Labor is represented by Operating Engineers (IUOE) Local 3 and training will be conducted at the Operating Engineers' Rancho Murieta training center in Sacramento County.

NCCIJAC provides training for employees of third party inspection and testing contractors (employers) in 46 Northern California Counties: Alameda, Alpine, Amador, Butte, Calaveras, Colusa, Contra Costa, Del Norte, El Dorado, Fresno, Glenn, Humboldt, Kings, Lake, Lassen, Madera, Marin, Mariposa, Mendocino, Merced, Modoc, Monterey, Napa, Nevada, Placer, Plumas, Sacramento, San Benito, San Francisco, San Joaquin, San Mateo, Santa Clara, Santa Cruz, Shasta Sierra, Siskiyou, Solano, Sonoma, Stanislaus, Sutter, Tehama, Trinity, Tulare, Tuolumne, Yolo, and Yuba counties.

Construction Inspectors ensure the structural integrity of commercial and industrial buildings, roads, and bridges and perform four main tasks: (1) Monitor materials and workmanship on the job site; (2) Assure that relevant codes and approved plans are followed; (3) Perform tests and job related duties required to carry out quality inspections; and (4) Communicate and work closely with contractors, engineers, and city and county building departments.

Employer Demand for Training

As construction work recovers from the recession, there is a need for more skilled, experienced, and credentialed inspectors. In addition, Construction Inspectors are now required to obtain more specialized certifications to become special inspectors. Special inspection is the monitoring of the materials and workmanship that are critical to the integrity of building structures to ensure that plans and specifications are followed and codes and ordinances are observed. The special inspection process is in addition to inspections conducted by the municipal building inspector and by the design professional responsible for a particular job. Special inspectors furnish continuous or periodic inspection and testing, depending on specific job types and circumstances.

The NCCIJAC's goal is to provide employers with highly skilled and certificated entry-level workers through its Pre-apprenticeship program. Employers also need skilled Apprentices ready to work at a high skill level as more Apprentices are needed to staff new work and replace retiring journey level workers.

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. The Panel provides reimbursement for the Related and Supplemental Instruction (RSI) portion of an apprenticeship training program. RSI is delivered as class/lab training, in affiliation with a Local Educational Agency (LEA). Here, the LEA is San Joaquin County Office of Education/ROC. ETP provides reimbursement for a maximum of 200 hours of RSI plus OSHA 10. However, in this proposal, NCCIJAC is not requesting OSHA 10 training. All training will be delivered by the class/lab method.

For the construction 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.

To ensure ETP does not displace Montoya Funds, Apprenticeship Pilot reimbursement is reduced by $5.00, reducing the priority industry rate from $18 to $13 per hour. Pre-Apprentice training will be reimbursed at $22 per hour.

DAS Retention Rates

The retention rate for this Apprenticeship Program for the years 2008-2012 averaged 27.5% which is less than half the Engineer Industry average of 56.3%. This low retention rate is due to the fact that the Construction Inspectors program is new and has only been recognized by DAS since 2012. Thus, actual Completion numbers from 2008-2012 were small. Based on employer demand, NCCIJAC is rapidly expanding and foresees achieving completion rates higher than the industry average. Having a Pre-Apprentice program should also help achieve higher retention.

In addition, the DAS category "Engineer Industry" is for all operating engineering programs, not just Construction Inspectors. In effect, there is no comparable industry average for Construction Inspector apprenticeship programs.

PROJECT DETAILS

Training for Pre-Apprentices will prepare individuals for entry into the Construction Inspector Apprenticeship program. The proposed Apprentice training will focus on RSI training, in addition to the specialized certifications required for this trade.

Completing the Pre-Apprentice program is a condition of entry. That program is at least 160 hours of full-time class/lab training, scheduled twice a year. Pre-apprentice trainees must be registered as Apprentices (Year 1) in order to meet retention, as a condition of ETP funding.

Pre-Apprentice – Job Number 1

Commercial Skills (100%) - Training will be provided in concrete field-testing and inspection, radiation safety and use of nuclear gauges, plan reading, and spray-applied fireproofing along with skills related to the reports, materials, and job site protocol for a construction inspector.

Apprentice – Job Number 2

Commercial Skills (100%) - Training will be provided in structural steel and welding inspection, structural masonry inspection, soils and asphalt testing, and pre-stressed and reinforced concrete inspection. The apprenticeship program for Construction Inspectors is five-years in length due to the critical skills required and the complexity of testing and inspection procedures, tools, equipment, and materials. Apprentices will receive 80 hours of classroom training every year.

Impact/Outcome

Depending on areas of specialization, trainees may earn one or more of these certifications:

American Concrete Institute Field Testing Technician
International Code Council Spray Applied Fire Proofing Special Inspector
American Concrete Institute Lab Technician
American Concrete Institute Base Aggregate Technician
International Code Council Special Inspector
International Code Council Reinforced Concrete
International Code Council Structural Steel Bolt and Weld
International Code Council Reinforced Masonry
International Code Council Pre-Stressed Concrete
International Code Council Commercial Building Inspector
International Code Council Soils Special Inspector
Nuclear Gauge Safety

Commitment to Training

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

Employer Needs Assessment

The training program was created and is governed by a joint labor management committee established through collective bargaining. Industry needs are determined by the committee and

the employer association which provide feedback on industry trends and new and evolving certification requirements.

NCCIJAC also works with employers to perform assessments of employer-specific job requirements and collect feedback from labor and management teams that administer the program and evaluations from trainees and program staff.

Trainer Qualifications and Training Coordination

Trainers are qualified inspectors with extensive work and training experience, employed by NCCIJAC. Four staff members will assist with training coordination, including but not limited to marketing, recruitment, needs assessments, and scheduling training.

Marketing and Support Costs

NCCIJAC requests 8% support costs to assist in Pre-Apprentice and Apprentice trainee recruitment, employer outreach, and assessment of employer-specific job requirements. Assessments and recruitment will take place throughout the duration of the Agreement.

Both the Pre-Apprentice and Apprenticeship Programs are marketed through the union and employer association websites, in addition to mailings and presentations of newsletters, emails, personal contacts, telephone calls, and advertisements via various websites. The JAC will also disseminate class information throughout the year to all members within its jurisdiction. ETP staff recommends the 8% in support costs.

RECOMMENDATION

Staff recommends approval of this proposal.

DEVELOPMENT SERVICES

Steve Duscha Advisories in Sacramento assisted with development for a flat fee of $10,000.

ADMINISTRATIVE SERVICES

Steve Duscha Advisories will also perform administration services for a fee not to exceed 12.2% of payment earned.

TRAINING VENDORS

N/A

Exhibit B: Menu Curriculum

Class/Lab Hours
8-200

Trainees may receive any of the following

Pre-Apprentice

COMMERCIAL SKILLS

Introduction to Concrete Inspection

- Fundamentals of concrete
- Fresh concrete
- Strength and durability of concrete
- Volume changes and other properties of concrete
- Cracks and blemishes in concrete
- Portland cement, aggregates, water and admixtures in concrete
- Batching and mixing concrete
- Hot and cold weather concreting
- Lightweight and heavyweight concrete

Concrete field-testing

- Temperature of freshly mixed concrete
- Sampling of freshly mixed concrete
- Slump of hydraulic cement concrete
- Unit weight, yield and air content of concrete
- Air content of freshly mixed concrete by pressure method
- Air content of freshly mixed concrete by volumetric method
- Making and curing concrete test specimens in the field

Radiation safety and use of nuclear gauges

- Principles of radiation safety and health physics
- Principles of nuclear physics related to moisture and density measurements
- Licensing and compliance with regulatory requirements
- Transportation and shipping
- Field service and maintenance
- Gauge operation and field practice

Introduction to Plan Reading

- Design-construction process
- Plana views, elevations and sections
- Isometric sketches
- Architects scale and plan scale
- Plane lines, symbols and reference marks for coordinating drawings
- Orienting sections, details and elevations to other plans
- Common structural steel shapes, reinforcing steel and their designations
- Indexes and keys on commercial construction drawings
- Grid systems to locate columns and piers
- Foundation plans, structural details and sections

Spray Applied Fireproofing
- Writing reports
- Interpreting plans
- Verifying materials used are type specified
- Preparation of substrates
- Identify structural elements to be fireproofed
- Minimum required coverage and thickness of fireproofing
- Sampling and testing
- Job site protocol

Class/Lab Hours
8-200

Apprentice

COMMERCIAL SKILLS

Structural steel and welding inspection
- Code and duties of inspector
- Using code books
- Correlation of codes to plans and specifications
- Code as applied to structural steel and welding
- Plan reading skills applied to structural steel and welding inspection
- Sheet steel codes
- Material sampling, testing and verification
- Plan reading skills applied to rebar welding
- Job safety
- Welding qualification requirements
- Weld types and locations
- Weld joint preparation and fit up
- Welding procedures and processes
- Welding equipment calibration
- Inspect of weld repairs
- Weld quality and tolerances
- High strength bolting
- Report writing
- Job site protocol
- Conflict resolution on the job site

Structural masonry inspection
- Code and duties of an inspector
- Code as it applies to structural masonry
- Plan reading skills applied to structural masonry
- Reinforcement, quality, tolerances, clearances, placement, spacing and quantity of reinforcing steel
- Verification of fabrication details and lap splices
- Masonry placement, substrate condition, mortar joints
- Masonry unit placement, type, quality, size, spacing and location of embedded items
- Weldment inspection

- Location and preparation of construction joints and protection of masonry from temperature extremes and adverse weather conditions
- Masonry quality
- Verification of materials, mixing of mortar and grout, time limits for placement and storage
- Masonry unit prism strength
- Types and frequency of material strength tests
- Grout placement, inspection of grout spaces
- Provision of cleanouts, methods of conveying and depositing grout
- Prisms, grout and mortar samples
- Preconstruction meetings to review plans and specifications
- Report writing
- Job site protocol
- Conflict resolution on the job site

Soils and asphalt testing and inspection

- Code and duties of an inspector
- Field identification of soils
- Safety on the job site
- Insuring properly prepared and weighed samples
- Methods of moisture determination
- Maximum density tests
- Sand cone testing
- Nuclear density testing
- Sieve analysis/grading
- Caltrans concrete sampling and testing standards
- Report writing
- Job site protocol

Prestressed concrete inspection

- Code and duties of an inspector
- Code as it applies to prestressed concrete
- Concrete quality
- Mix designs, water added, consistency, workability
- Sampling and field-testing
- Storage, protection and transportation of specimens
- Concrete placement, protection and curing
- Concrete conveying, depositing, consolidation and temperature extremes
- Concrete reinforcement, type, grade, size and fabrication
- Conformity with plans
- Placement of reinforcement, tolerances, supports, laps and verification of welds
- Tendons: type, grade, size and fabrication
- Placement of tendons, tolerances, supports, laps, profile
- Supplemental reinforcement, mechanical conations, prestressed rock and soil anchors
- Formwork, joints and embeds
- Prestressing and post-tentioning
- Verification of proper concrete strength
- Equipment calibration, stressing/tensioning sequences

- Jacking forces and acceptable elongations
- Grouting, proper sealing and protection of tendons and anchorages
- Record keeping
- Pre-construction meetings
- Report writing
- Job site protocol
- Conflict resolutions on the job site

Reinforced Concrete Inspection

- Code and duties of an inspector
- Code as it applies to concrete inspection
- Reinforcing steel
- Correlation of codes to plans and specifications
- Verifying steel mill test reports for mill markings and test data
- Checking steel mill testing against project specifications
- Sampling reinforced materials
- Checking reinforced steel for grade, size, spacing, clearances and splices
- Purpose and location of reinforcing steel in structural concrete elements
- Shotcrete inspection, placement and sampling
- Checking mix designs
- Correlating testing requirements with project specifications
- Report writing
- Job site protocol
- Conflict resolution on the job site

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