PG&E ACADEMY TECHNICAL LEARNING SERVICES
BLANKET AGREEMENT
(Rev. 1/1/2008)

This Agreement, referenced by Agreement TLS CPA BLK is made and entered into as of [DATE], by and between the CITY OF PALO ALTO, 250 Hamilton Avenue, Palo Alto, CA 94301 ("Client") and PACIFIC GAS AND ELECTRIC COMPANY, 77 Beale Street, San Francisco, CA 94105, a California corporation, ("PG&E").

RECITALS

WHEREAS, Client desires PG&E to provide various training courses and training consulting services, and PG&E desires to do so pursuant to the terms and conditions set forth in this Agreement.

NOW, THEREFORE, in consideration of the premises and the mutual covenants and agreements set out in this Agreement, Client and PG&E agree as follows:

AGREEMENT

1. SCOPE. PG&E shall conduct performance based training courses and knowledge comprehension and skills assessment testing as outlined in each course description, as part of the Training Curriculum, attached to this Agreement as Attachment 1. PG&E will also provide training consulting services for the analysis and development of Client "in-house" training programs, job aids and measurement tools, as outlined in Section 3 below.

2. TRAINING COURSES. PG&E shall provide training for each course requested upon receipt and acceptance of a Purchase Order as outlined below in this Section 2 and a completed Course Agreement for each participant. The following forms shall constitute a complete Course Agreement:

   a) Course Descriptions (from Attachment 1, attached), 2008 PG&E Academy Technical Learning Services Course Descriptions. (Exhibit A – Course Description Binder pages 1-23).

   b) Signed Enrollment Form (Attachment 2, attached)

   c) Signed On Site Access Agreement for on-site training (Attachment 3, attached), and/or signed Off Site Waiver Agreement for training at Client’s facility or non-PG&E facility (Attachment 4, attached).

Training Course Objective(s)

Training course objectives shall be specific to each course and outlined in each course description (see Attachment 1).
Training Course Instructor/Participant Ratio

The appropriate ratio of instructor to participants will be determined by the course curriculum.

Training Course Locations

Training course locations will be determined based on the course(s) requested and be conducted at an on-site location.

An "On-site" location shall be defined as a PG&E location, including but not limited to, PG&E's San Ramon or Livermore Learning Centers. On site training locations will include the following accommodations:

- A classroom environment reasonably free of interruptions
- A training field environment reasonably free of interruptions
- Training props (if not otherwise furnished by PG&E)
- Suitable classroom and shop space necessary to accommodate participants, demonstrations; and hands-on training as required (flipcharts, chalk/white board, TV and video player)
- Appropriate safety and personal gear (if not otherwise furnished by Client)
- Appropriate tools and equipment (if not otherwise furnished by Client)

Training Course Schedules

Training courses shall be conducted between the hours of 7:30 AM and 4:00 PM, Monday through Friday, unless otherwise mutually agreed to by both parties prior to the start of the course.

Training Course Materials

All training materials provided by PG&E are proprietary information and are provided to the Client for the sole purpose of training. The materials may not be reproduced or distributed to any other individual or third party at any time or for any purpose without the express written permission of PG&E.

Requests for Training Courses

Client will request training courses through the issuance of a Purchase Order. For training courses the Purchase Order shall specify (i) the training course(s) requested; (ii) number of participants; (iii) Training dates mutually agreeable to both parties; (iv) Training location(s); and (v) fee for each course requested as negotiated at the time the training is requested. PG&E will not commence any training courses under this Agreement until authorized by Client through a Purchase Order.
Training Course Cancellations and Rescheduling

Client may cancel a scheduled training course at no charge if PG&E is notified of such request in writing 30 days prior to the start date of the training course being cancelled. If PG&E does not receive this notice, Client shall be invoiced for all expenses associated with preparing for the training and 100% of the total course fee.

In the event the instructor for the scheduled training is not available due to unforeseen circumstances, including but not limited to illness, PG&E’s substitute instructor will conduct the training. In the event PG&E’s substitute instructor is also not available due to unforeseen circumstances, the training will be re-scheduled on a date mutually agreeable to PG&E and Client.

Training Course Refunds

Client shall not be refunded any amount for a participant who has begun training, but is unable to complete the training for any reason.

Training Course Curriculum

Courses covered by this Agreement and described in (Attachment 1) are representative of technical training course curriculum but are not limited to those listed. Other courses may be offered by PG&E under this Agreement.

Modifications/Additions: Modifications to existing approved training course descriptions or requests for additional training course descriptions shall be made only after such requests meet the approval criteria stated above. All approved changes to the training course curriculum shall be effective only after a Change Order signed by both parties incorporates such changes into the Agreement.

Conflicts: Should a conflict exist between any approved training course description and this Agreement, this Agreement shall control.

3. **TRAINING CONSULTING SERVICES:** PG&E may provide the following training consulting services on an as-requested basis, and as proposed by PG&E and approved by Client:

   - Training program analysis
   - Design and development of training curriculum
   - Job aids development for various job classifications
   - Field training outlines
   - Job performance measures or audits
   - Other related services as may be requested by client and provided by PG&E
Training consulting services shall be proposed by PG&E in a format consistent with the sample Proposal Form, provided as Attachment 5 of this Agreement, and approved by Client in accordance with the terms set forth below:

Approval for Training Consulting Services

Client will approve training consulting services through the issuance of a Purchase Order with Proposal Form by PG&E included as a Purchase Order attachment. For consulting services the Purchase Order shall specify (i) Scope of Work; (ii) employees performing work; (iii) deliverables and due dates; (iv) work schedule mutually agreeable to both parties; (v) work location(s); (vi) subject matter expertise, (vii) the Client contact person, and (viii) time and expense fee schedule or agreed lump sum price as negotiated at the time the service is requested. PG&E will not commence training consulting services under this Agreement until authorized by Client through a Purchase Order.

Training Consulting Services Cancellations

The Client may cancel training consulting work at anytime upon written notice to PG&E. PG&E shall invoice Client for all related expenses incurred for services performed prior to the date of cancellation. Upon receipt of final payment, PG&E shall release to Client all materials and products produced up to the time of cancellation.

Training Consulting Descriptions

Approval: Only training consulting descriptions that have been reviewed and approved by PG&E’s Law Department are considered part of the training consulting services outlined above and authorized to be provided by PG&E under this Agreement.

Modifications/Additions: Modifications to existing training consulting descriptions or requests for additional training consulting descriptions shall be made only after such requests meet the approval criteria stated above. All approved changes to the training consulting descriptions shall be effective only after a Change Order signed by both parties incorporates such changes into the Agreement.

Conflicts: Should a conflict exist between any approved training consulting description and this Agreement, this Agreement shall control.

4. FEES. Client shall pay PG&E for the training courses provided under this Agreement in accordance with the fee for each course requested. Client shall pay for training consulting services on a time and expense or lump sum basis as negotiated at time the training consulting services are requested.
PG&E will submit a monthly invoice to Client for services performed. Invoices will be in duplicate, reference the Agreement and Purchase Order numbers, and be submitted to the address shown below:

City of Palo Alto  
Paul Dornell, Asst. Director of Utility Operations  
250 Hamilton Avenue  
Palo Alto, CA 94301

Client shall make all payments, subject to Client approval, within thirty (30) days after receipt of an invoice.

Payments shall be mailed to:

Pacific Gas and Electric Company  
P.O. Box 997300  
Sacramento, CA 95899-7300

All payments shall reference the Agreement and Purchase Order numbers and the PG&E Invoice number.

5. **PURCHASE ORDERS.** Purchase Order(s), issued by the Client in connection with work or services performed under this Agreement are to document the Client’s request and facilitate processing of payments to PG&E. Any additional terms and conditions beyond the basic information, required in Sections 2 or 3 above, included on said Purchase Order(s) are null and void and do not apply to this Agreement. This Agreement is the sole contract between PG&E and Client for the services covered under this Agreement.

6. **INSURANCE.** Client warrants that all participants are employees of the Client and that the Client maintains the following insurance coverage which shall be in effect and apply to the Client’s employees during and to completion of any training:

- Worker’s Compensation insurance or self-insurance indicating compliance with any applicable labor codes, acts, laws or statues, state or federal, where Client performs work.
- Employers’ Liability Insurance in an amount not less than $1,000,000 for injury or death each accident.
- Commercial General Liability Insurance coverage shall be at least as broad as the Insurance Services Office (ISO) Commercial General Liability Coverage “occurrence” form. The limit shall not be less than $1,000,000 each occurrence/$2,000,000 aggregate for bodily injury, property damage and personal injury. Coverage shall: (a) by “Additional Insured” endorsement add as insured PG&E, its affiliates, subsidiaries, and parent company, and PG&E’s directors, officers, agents and employees with respect to liability arising out of the Work performed by or for the Contractor (ISO Form CG2010 form or equivalent); (b) be endorsed to specify that the Contractor’s insurance is primary and that any insurance or self-insurance maintained by PG&E shall not contribute with it; and (c) include a severability of interest clause.
7. **INDEPENDENT CONTRACTOR.** Client and PG&E agree that PG&E is to provide training and consulting services as an independent contractor. PG&E is not an agent or employee of Client for any purpose.

8. **PERFORMANCE.** In the performance of the services under this Agreement, PG&E is an independent contractor with the authority to control and direct the performance of such services. Those services must meet the approval of Client, however, and shall be subject to Client's general right of inspection and supervision to secure satisfactory completion of the services. PG&E agrees to comply with all federal, state, and local laws, rules, and regulations that are now or may in the future become applicable to the performance of services by PG&E under this Agreement.

9. **CLIENT RESPONSIBILITY.** In the event the performance of particular services by PG&E depends upon approvals or other decisions by Client, or the furnishing by Client of particular documents or information and Client does not timely perform or provide the same, the time for PG&E's completion of the particular services which are dependent thereon shall be extended by the period of Client's delay with respect thereto.

10. **RELEASE FROM LIABILITY.** Client understands that there are certain risks associated with the training provided by PG&E. Client hereby releases PG&E, its affiliates, officers, directors, and employees from all claims, demands, and liability, which are in any way connected with the training and pay all costs and expenses associated with defending such claims, demands, and liability, including settlement costs, judgments, penalties, and reasonable attorney fees.

11. **LIMITATION OF PG&E'S LIABILITY.** In the event that PG&E is held to be liable to Client or to any party claiming by or through Client by reason of PG&E's performance of services under this Agreement, the aggregate liability of PG&E with respect to losses resulting from PG&E's services shall be limited to the lesser of the not-to-exceed amount of the Purchase Order or the full amount paid to PG&E under the Purchase Order. In no event shall PG&E be liable to Client for incidental, indirect, special, punitive, or consequential damages including, but not limited to, loss of use, cost of delays, replacement of power, or loss of profits. The parties further agree that the limitations on liability expressed in this Agreement will apply at all times, whether in contract, equity, tort or otherwise, regardless of the fault, negligence (in whole or in part), strict liability, breach of contract or breach of warranty of the party indemnified, released or whose liabilities are limited, and will extend to the affiliates, subsidiaries, parent company, officers, managers, directors, agents and employees of such party.

12. **NO WARRANTY.** Client understands that PG&E makes no warranty or representation of any kind that participants will receive external licenses, certifications, or qualifications from any governmental agency or private institution. Client shall independently verify that participants possess the necessary skill or certification to perform work for client as Client’s employee.

13. **PG&E'S UTILITY OBLIGATIONS.** Client acknowledges that PG&E has an obligation to maintain, repair and service its own facilities, including those under the operation and
control of the California Independent System Operator, in order to perform its duties as a public utility, which obligation takes precedence over any obligations undertaken in this Agreement. Accordingly, if PG&E determines at any time, in its sole discretion, that it requires any personnel or resources previously committed to the performance of services for Client under this Agreement in order to maintain adequate service to PG&E’s other customers or to fulfill its duties as a public utility, then PG&E shall have the right to divert the use of such personnel or resources to satisfy such requirements. If as a result of such action, PG&E is unable to perform its obligations under this Agreement, PG&E shall be excused from whatever performance is affected by such action to the extent so affected. In that event, PG&E shall have no liability to Client, and shall not be considered in default under this Agreement, for such failure to perform.

14. AGREEMENT TERM AND TERMINATION.

A. This Agreement shall be in effect from the date signed by PG&E until December 31, 2010, unless sooner terminated by Client or PG&E as permitted by this Agreement.

B. Either party may terminate this Agreement at any time by giving the other party two (2) weeks written notice, provided, however, any such termination shall not affect PG&E’s obligation to perform services during the two (2) week notice period or Client’s obligation to pay PG&E for services rendered to the date of termination, including during the two (2) week notice period.

C. PG&E may terminate this Agreement immediately and without prior notice in the event that the California Public Utilities Commission issues a ruling or order prohibiting or otherwise preventing PG&E from fulfilling, or substantially interfering with PG&E’s ability to fulfill, its obligations under this Agreement, or finding that this Agreement is contrary to the policies of the California Public Utilities Commission. In the event of any such termination, Client will be liable to PG&E only for the compensation earned on the services performed to the date of termination, plus costs reasonably incurred by PG&E in terminating its operation, and PG&E will take whatever action with respect to performance of the services as will tend to minimize its claim against Client. PG&E will not be entitled to any payment for anticipated profits or overhead on uncompleted portions of the services.

15. ASSIGNMENT. Neither this Agreement nor the services to be provided under this Agreement shall be assigned, subcontracted, or otherwise transferred by either Client or PG&E without the prior written consent of the other party. Such consent shall not be unreasonably withheld. This Agreement shall inure to the benefit of and be binding upon Client and PG&E and their respective successors and assigns.

16. GENERAL.
A. The failure of either party to exercise any right under this Agreement or to take any action permitted on a breach by the other party shall not be deemed a waiver of such right or of any other rights in the event of a subsequent breach of a like or different nature.

B. This Agreement shall be governed by and construed in accordance with the laws of the state of California.

C. The terms and conditions set forth in this Agreement are intended by PG&E and Client to constitute the final and complete statement of their Agreement and all prior proposals, communications, negotiations, understandings, and representations relating to the subject matter of this Agreement, whether verbal or written, are hereby superseded. No modification or amendment of the Agreement shall be effected unless the modification or amendment is in writing and signed by both parties.

IN WITNESS THEREOF, the parties have caused this Agreement to be executed as of the date first written above.

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2008 PG&E Academy Technical Learning Services
Course Descriptions

Electric Construction/Line School (PG&E's Livermore training campus)

1) Basic Pole Climbing (schedule up to 2 courses): 10-day course covers basic equipment, techniques and safety for beginner to journey level pole climbing (8-16 student class size, 1 instructor per 4 students)

2) Advanced Pole Climbing (schedule up to 2 courses): 5-day course covers more advanced climbing and pole top rescue (8-16 students, 1 instructor per 4 students)

3) Underground Fundamentals (schedule up to 2 courses): 5-day course provides overview of underground electric, primary and secondary, system and equipment (8-16 students, 1 instructor per 8 students)

4) Rubber Glove Fundamentals (schedule up to 2 courses): 5-day course provides procedures and techniques in safely rubber gloving on energized electric facilities (8-12 students, 1 instructor per 4 students)

5) Advanced Line Techniques (schedule 1 course): 5-day course covers advanced techniques for more journey line workers on electric line and equipment (8-16 students, 1 instructor for up to 12 students; 2 instructors thereafter)

None of the above courses are available for training at the customer's site. These courses could be part of the full curriculum for a customer's apprenticeship program, or stand-alone courses (Advanced Pole Climbing and Advanced Line Techniques would have prerequisite training and/or work experience). A possible additional course offering could include Live Line Fundamentals.

Equipment Operator/Commercial Driving School (PG&E Livermore campus)

6) Commercial Driving (schedule up to 2-3 courses): 5-day course covers all aspects of commercial driving for vehicle and trailer (3 students and 1 instructor per course) ** Customers may bring in their own equipment to train on, however, the training must take place at the Livermore facility course

7) Backhoe/Loader (schedule up to 2-3 courses): 10-day course covers full aspects of backhoe and loader operation (only 3 students and 1 instructor per course) ** Customer equipment may be used, however, training must take place at the Livermore campus course

8) Excavation Safety (schedule up to 3-5 courses): 1-day course covers rules and techniques around OSHA and general excavation safety (10-15 students, 1 instructor) ** Training course available at customer site

9) Digger Derrick (schedule up to 2-3 courses): 1-day course covers basic operation of equipment to bore holes in the ground for pole placement (3-5 students, 1 instructor) ** Available at customer site
10) Aerial Lift (Bucket Truck) (schedule up to 2-3 courses): 1-day course covers basic equipment and operation of aerial lifts, and includes rescue training from the equipment (4-6 students, 1 instructor) **Available at the customer site**

Depending on demand, additional courses could include a ½-day Excavation Safety Re-qualification (some companies require re-qualification every 2-years), and Crane Classroom and Crane Practical (small and large size) training.

Gas T&D (San Ramon and Livermore campuses, with some courses available at the customer’s site)

Efforts are underway to secure authority for 3-4 new instructors. If these instructors are brought in for 2008, then the higher number of courses noted below may be scheduled, otherwise the lower count is what should be considered.

11) Corrosion trainings (all courses take up to 8-10 students, 1 instructor per 4-5 students)
   a) Corrosion Mechanic (schedule 1 course): 10-day class covers installation and maintenance of Cathodic protection (CP), tracing and understanding CP, evaluating atmospheric corrosion, measuring and evaluating, and taking soil readings
   b) Advanced Corrosion (schedule 1 course): 5-day course covers advanced corrosion detection and work
   c) Rectifier/Cathodic Protection (schedule 1 course): 10-day course covers equipment and procedures for Cathodic protection

12) Gas Leak Survey (schedule 1-3 courses): 1-day training covers leak detection equipment and procedures for inspecting facilities for leaks (8-10 students, 1 instructor) Note: depending on the type of leak detection equipment the customer has, and if it is what PG&E instructors are familiar with, our instructor could require some quick instructional training from the equipment vendor (usually at little cost, would just need lead time to coordinate) **Available at customer site**

13) Mueller Valve (schedule 1-2 classes): 1-day course covers basic training on common Mueller gas valve changer related work (up to 8-10 students, 1 instructor per 4-5 students) **Available at customer site**

14) Plastic Fusion (schedule 1-3 courses): 2-day course provides training in heat fusing 2", 4" and 6" plastic pipe (up to 8-10 students, 1 instructor per 4-5 students) **Available at customer site**

15) Protection of Underground Infrastructure (PUI)/Mark & Locate (schedule 1-3 courses): 2-day training covers use of mark and locate equipment, and field training for hooking on and locating underground piping (1 instructor for up to 10 students, 15 students max in the course would require 2 instructors) **Available at customer site**

16) Welding (3-types: Arc, Oxygen, and Flux Cone/Mig) (schedule 1 course for each of the three types): each 10-day course is entry level welding for the different welding type applications; e.g., piping, plates, etc. (each course can have up to 8-10 students, 1 instructor for each 4-5 students) – Only available in San Ramon
17) **Measurement & Control (M&C) Short Course** (schedule 1 course): 5-day course covers the basic principals of gas measurement, regulation, gas quality control and maintenance procedures (up to 12 students, 5:1 instructor ratio) – Only available at Livermore facility.

18) **Measurement & Control Mechanic – Secondary** (schedule 1 course): 10-day course (as either stand-alone or part of apprenticeship program) covers vault maintenance, basic regulation, theory of operation, regulator applications and system overpressure protection processes (up to 8-10 students, 4-5 students per instructor) – Only available at the Livermore campus.

**Power Systems Operations (PSO)**

19) **Basic Electricity (System Fundamentals)** (schedule 1-2 courses): 2-day course (can be taught as a 1-4 day course depending on level of detail and audience; 2-day is a good overall application for a broader audience) provides overall utility system overview of generation, transmission, and distribution (up to 20 students, 1 instructor)

20) **Electrician Courses** (4 different courses as part of apprenticeship or stand-alone; demand by larger PG&E customers who own their own substations, some contractors, BART, Power Plant and utility system owners/operators)

   a) **Regulators/Load Tap Changer** (schedule 1 course): 4-day course with lab covers functions of substation regulators and transformer load tap changes (LTC) for inspection and maintenance work (up to 10 students, 1 instructor per 5 students)

   b) **Power Circuit Breakers** (schedule 1 course): 5-day course covers fundamentals of circuit interruption, power circuit breaker mechanisms and types, and installation and maintenance procedures (up to 10 students, 1 instructor for 5 students)

   c) **Power Transformers** (schedule 1 class): 5-day course covers three-phase power transformer fundamentals, accessories, and installation and maintenance procedures (up to 10 students, 1 instructor per 5 students)
ENROLLMENT FORM

1) I ______________________ (Student) hereby agree to follow all rules and regulations while attending [COURSE TITLE] (Training) provided by Pacific Gas and Electric Co. (PG&E).

2) Training will be held at [LOCATION]. Training will be from [START DATE] to [END DATE]. Training hours will be from [START TIME] to [END TIME].

3) As a condition of enrolling in an On-Site training course and prior to entering the PG&E training facility, Student shall sign the On Site Access Agreement, a copy of which is attached as Attachment 3.

4) Student understands that PG&E makes no warranty or representation of any kind that Students attending training will receive external licenses, certifications, or qualifications from any governmental agency or private institution. Students will be independently responsible for obtaining any licenses, certifications, or qualifications required.

5) All training material provided by PG&E is proprietary information and is provided to the Student for the sole purpose of training. The material may not be reproduced or distributed to any other individual or third party at any time or for any purpose without the express written permission of PG&E.

During the presentation of material directly or indirectly related to any course under this Training and Consulting Services Blanket Agreement, Student may have access to confidential commercial or personal information concerning, but not limited to, technological, ratemaking, legislative and personnel matters and practices of PG&E, its parent company, subsidiaries, affiliates, or members of the public. Student agrees not to disclose any such confidential information or otherwise make it available to any other person, including any affiliate of PG&E that produces energy or energy-related products or services, without the prior written approval of PG&E.

6) Student understands that certain risks may be involved during participation in the training provided by PG&E. Student personally assumes all risks for any harm, injury, or damage that may befall Student in connection with training provided by PG&E and furthermore releases PG&E from any claim or lawsuit by Student, Student’s family, estate, heirs, or assigns, arising out of training provided by PG&E. Student shall indemnify PG&E, it’s officers, directors and employees against such claims or lawsuits and shall pay all costs and expenses associated with PG&E defending such claims or lawsuits, including settlement costs, judgments, penalties, and reasonable attorney fees.
7) Pacific Gas and Electric Company is committed to maintaining and promoting job safety and health for all personnel at its facilities. Student agrees, at all times, to follow all safety rules, regulations and instructions provided by PG&E. Should a Student violate any safety rule, regulation or instruction PG&E may, at its sole option, remove the Student from the training. Acceptance of the Student into a future class shall be at the sole discretion of PG&E.

STUDENT’S NAME_____________________

SIGNATURE_____________________

DATE_____________________
ON-SITE ACCESS AGREEMENT

This document is intended to set forth the terms whereby each of the undersigned is granted permission to enter the PG&E training facility, located at [LOCATION], California. With respect to such access to the PG&E facilities, each of the undersigned agrees to the following:

A. Undersigned waives any claim against PG&E (including its parent company, contractors, officers, directors and employees) for any injury or property damage that may be sustained by the undersigned during the PG&E training or on PG&E premises.

B. Undersigned agrees to indemnify, hold harmless and defend PG&E (including its agents, owners, contractors, officers, directors and employees) from and against any claims, demands, liabilities, or suits by, or on behalf of, any party, for personal injuries, property damage, or for the loss of life or property and shall hold PG&E harmless from all costs or expenses, including reasonable attorney fees, associated with such claims, demands, liabilities, suits.

C. PG&E is committed to protecting its employees, customers, and the general public while they are on PG&E property from any harm caused by illegal drug and alcohol use by non-PG&E personnel. To accomplish these objectives, PG&E has established the following drug and alcohol abuse policy for access to PG&E facilities by Students:

PG&E may deny access to, or remove from, its facilities any Student, who PG&E has reasonable grounds to believe has:

- Engaged in alcohol abuse or illegal drug activity which in any way impairs PG&E's ability to maintain safe training facilities, to protect the health and well-being of PG&E employees, customers, and the general public, and to promote the public's confidence in PG&E's service and operations; or

- Been found guilty, pled guilty, or pled no lo contend to a charge of sale or distribution of any illegal drug or controlled substance as defined under Federal or California law within the past five years, whether or not the criminal record was later expunged or sealed by a court order.

The following activities are prohibited at facilities owned or leased by PG&E:

- Possessing, furnishing, selling, offering, purchasing, using or being under the influence of illegal drugs or other controlled substances as defined under Federal or California law;
- Possessing, furnishing, selling, offering, purchasing, or using alcoholic beverages, or being under the influence of alcohol.

Where reasonable cause exists that this policy has been violated, the Student must inform PG&E. The Student agrees to submit to the following:

- Search of the Student, his or her vehicle, locker, storage area, and personal effects and

- Undergo a medical examination to determine the Student's fitness for duty. Such examination shall include obtaining a urine and/or blood specimen for drug or alcohol analysis unless the examining physician deems such tests to be inappropriate.

Refusal to comply with a request to search or medical examination shall be grounds for denying access to, or immediate removal from, any PG&E facility.

Any Student who has been denied access to, or removed from, PG&E facilities for violating this policy may obtain permission to enter or reenter provided the Student establishes, to the satisfaction of their employer and PG&E, that the previous activity which formed the basis for denying access or removal has been corrected and his or her future conduct will conform with this policy. PG&E retains the right of final approval for the entry or reentry of any Student previously denied access to or removed from PG&E facilities.

Company/Municipal __________________________ Date ________________

Company/Municipal Representative Name __________________ Title ________________

Signature _______________________________________

Purpose of visit: _____________________________________________________________

Each of the undersigned hereby acknowledges that he/she has read and understood the above terms, including the waiver and indemnification contained therein.

**Printed Name** | **Signature** | **Date**
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(Provide additional pages as necessary)
OFF-SITE TRAINING AND CONSULTING
WAIVER AGREEMENT

This document is intended to set forth the terms whereby PG&E may perform training and/or consulting services off-site on Client’s property or location designated by Client. With respect to participating in training and/or consulting at such locations, each of the undersigned agrees to the following:

A. Undersigned waives any claim against PG&E (including its parent company, contractors, officers, directors and employees) for any injury or property damage that may be sustained by the undersigned, directly or indirectly, during the PG&E training and/or consulting on Client’s property or any location designated by Client.

B. Undersigned agrees to indemnify, hold harmless and defend PG&E (including its agents, owners, contractors, officers, directors and employees) from and against any claims, demands, liabilities, or suits by, or on behalf of, any party, for personal injuries, property damage, or for the loss of life or property and shall hold PG&E harmless from all costs or expenses, including reasonable attorney fees, associated with such claims, demands, liabilities, suits.

C. In the event training requires the operation of equipment or vehicles, Undersigned agrees to indemnify, hold harmless and defend PG&E (including its agents, owners, contractors, officers, directors and employees) from and against any claims, demands, liabilities, or suits by, or on behalf of, any party, for personal injuries, property damage, or for the loss of life or property and shall hold PG&E harmless from all costs or expenses, including reasonable attorney fees, associated with such claims, demands, liabilities, suits.

Client

Client Representative Name Title

Signature Date

Purpose of Visit

Each of the undersigned hereby acknowledges that he/she has read and understands the above terms, including the waiver and indemnification contained therein.

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TRAINING CONSULTING SERVICES PROPOSAL FORM

Consulting Description:
PG&E will provide training consulting performance improvement consulting services to various clients for the purpose of analyzing, identifying, designing and developing journeyman-level electric construction maintenance, operating and construction training, apprentice training as well as job aids or other worker support/performance improvement tools.

The result of the consulting work may also include instructor support materials, tests or other performance evaluation instruments needed to verify the skills and knowledge of workers who perform certain tasks on electric facilities per the Federal and State Regulations.

The activity will identify various criteria that make-up components of the task(s)

- Description of tasks
- Required tools, documents, etc.
- Required work products
- Performance standards

At the end of the consultation, PG&E will recommend training or performance improvement interventions that are appropriate to meet the client’s goals. Additional work by PG&E to design training or other materials may be negotiated in a separate delivery agreement.

References:
Federal / State Codes/ Client work practices and safety rules.

Objectives:
- Identify tasks and subtasks
- Identify current practices and performance levels (“is” state)
- Determine desired practices and performance levels (“should-be” state)
- Identify performance gaps
- Determine/recommend measures to close performance gaps.

Prerequisites: TBD
Physical Demands: TBD
Work Duration: TBD
Who Should Participate: TBD
Personal Safety Equipment: TBD
Target Industries/Application: TBD
Locations: TBD
Fees: TBD
Schedule: TBD
Electric Construction

Advanced Climbing — 5 Days  (E-ELEC-0006)

Course Description:
The advanced climbing course is intended to provide advanced climbing and body-positioning skills needed to do construction tasks at the top of wooden poles. This is a project-based course where students, working in teams, build a segment of a simulated 12,000 volt distribution circuit by installing crossarms, conductors, transformers and connections in a deenergized project field. Students build on the concepts taught in Basic Climbing and upon the field practice they have previously completed on the job (at least 3 months of field climbing is highly encouraged). Proper body position while working and correct work procedures are emphasized (improves efficiency, prevents injuries).

The course combines formal classroom training and extensive hands-on practice in the project field. Highly experienced PG&E instructors guide and critique student performance and conduct objective evaluations of the student’s ability to meet the course requirements. Representatives of the student’s employer perform final certification of student advanced climbing ability on the job.

Basic Climbing is the second of 7 formal courses and 2 structured field labs that are a part of the PG&E apprentice lineman training program.

Course content covers:
- Electricity fundamentals for linemen
- OM&C Manual familiarization
- Knots and rope splicing
- Field construction projects
- Single phase transformer connections


Prerequisites:
Candidates must be at least 18 years old and must have the physical capability (physical fitness, agility, coordination, and freedom from relevant physical disabilities, etc.) to climb, maneuver and perform work at the top of wooden poles. Must be able to read and write at 8th grade level and must be fluent in the English language. Must have completed Basic Climbing course, must have practiced climbing after Basic Climbing and must be a certified climber (as determined by employer).

Who should attend:
Persons who wish to become journeyman linemen, outside electricians, cable TV and fiber-optic workers, etc.

Target Industries/Application:
Municipal/co-op electric utilities
Investor-owned electric utilities
Private utilities
Electrical contractors
Communication workers

Class Size: Eight (8) to sixteen (16) students.

Instructional Method:
*Formal classes* (approximately 6% of the training time) – classroom lecture/discussion, lab demonstration (15%) and self-paced, hands-on projects and practice (85%).

*OJT* (prior to final certification by employer) – as required to satisfy individual requirements. Instruction and supervision by foreman and journeyman workers of student’s company.

Location:
Livermore Learning Center
7205 National Drive
Livermore, CA

For information on course description, enrollment, and fees, please contact:
PG&E Business Development at 1-800-687-5720 or e-mail at valueadd@pge.com.
Electric Construction

Advanced Lineman Techniques (E-ELEC-0010)

Course Description:
This course covers 3-phase distribution systems and the equipment used to monitor, protect and regulate them including fuses, line restorers, regulators, capacitor banks, sectionalizers, booster banks, etc. The function and operation of remotely controlled equipment (e.g., SCADA) is also included.

Three-phase transformer connections that provide power to customer panels are also covered in detail.

Field projects include work on deenergized lines located on steel transmission towers.

Course content covers:
- Delta/Wye electrical systems
- 3-Phase transformer connections
- Electric power meters
- Remotely controlled equipment (supervisory control and data acquisition systems)
- Tower project
- Distribution field projects

IMPORTANT NOTE: Students must successfully complete Basic Climbing before enrolling in Advanced Climbing, Overhead Fundamentals, Live Line Fundamentals, Rubber Glove Fundamentals and Advanced Lineman Techniques.

Prerequisites:
Candidates must be at least 18 years old and must have the physical capability (physical fitness, agility, coordination, and freedom from relevant physical disabilities, etc.) to climb, maneuver and perform work at the top of wooden poles. Must be able to read and write at 8th grade level and must be fluent in the English language. Must have completed Advanced Climbing course, must have practiced climbing after Basic Climbing and must be a certified climber (as determined by employer). Advanced climbing skills and the ability to work from the pole are essential.

Who should attend:
Persons who wish to become journeyman linemen or outside electricians.

Target Industries/Application:
Municipal/co-op electric utilities
Investor-owned electric utilities
Private utilities
Electrical contractors

Class Size: Eight (8) to sixteen (16) students.

Instructional Method:
Formal classes (approximately 6% of the training time) – classroom lecture/ discussion, lab demonstration (15%) and self-paced, hands-on projects and practice (85%).
OJT (prior to final certification by employer) – as required to satisfy individual requirements.
Instruction and supervision by foreman and journeyman workers of student’s company.

Location:
Livermore Learning Center
7205 National Drive
Livermore, CA

For information on course description, enrollment, and fees, please contact:
PG&E Business Development at 1-800-687-5720 or e-mail at valueadd@pge.com
Construction Applications

Aerial (Bucket Truck) Lift Operation (E-EQIP-0014)

Course Description:
The course objective is to provide the student with the necessary knowledge and manipulative skills to perform basic bucket truck operating techniques required for safe and efficient operation of the Bucket Truck.

Training modules are job-related and involve a substantial amount of field practice to build proficiency operating the equipment.

At the end of this course students will be able to:
- Perform safe equipment operation and inspection
- Perform daily maintenance on the bucket truck
- Demonstrate minimum standards for safe and efficient bucket truck operation
- Demonstrate safe and efficient bucket truck operation

To successfully complete this course the student must pass a written and performance base test.
- The written test is on bucket truck safety and set-up
- Proficiency test operating the bucket truck under various construction situations

Qualification:
This qualifies the student to operate the bucket truck per CCR Title 8 requirements

Course Objectives:
- Perform various bucket truck and maneuvering tasks.
- Perform pre-start inspection.
- Pass performance based test.
- Pass written test.

Prerequisites:
None

Course Duration:
One day, or 6 – 8 hours.

Who should attend:
Person who expect to operate bucket trucks.
Entry level equipment operators

Target Industries/ Application:
- Public/ private utilities
- Public/ private transportation & equipment maintenance
- Piping system fabrication
- Truck Drivers

Class Size: six (6) to twenty-four (24) students.

Instruction Method:
Classroom lecture/ discussion, lab demonstration/ explanation (15%), and self pace hands-on practice/ instructor feedback (85%).

Location:
PG&E’s Livermore Learning Center
7205 National Drive, Livermore or client site as arranged with PG&E

For information on course description, enrollment, and fees, please contact:
PG&E Business Development at 1-800-687-5720 or e-mail at valueadd@pge.com
Construction Applications

Backhoe Operation (E-EQIP-0001)

Course Description:
The course objective is to provide the student with the necessary knowledge and manipulative skills to perform industrial basic Backhoe/Loader operating techniques required for safe and efficient operation of the Backhoe/Loader.

Training modules are job-related and involve a substantial amount of field practice to build proficiency operating the equipment.

Field Practice:
- perform safe equipment operation and inspection
- perform daily maintenance on the backhoe/loader
- demonstrate minimum standards for safe and efficient backhoe operation
- demonstrate safe and efficient backhoe/loader operation

Upon completion of this course the student will be given a written test and a physical test to demonstrate the ability to safely operate a backhoe.
- The written test is on Backhoe/loader safety and set-up.
- Proficiency test requires operating the backhoe/loader under various situations.

Prerequisites: None. Note students must wear their own long-sleeved shirts, long pants and hard soled work boots with leather uppers and ankle support. They are encouraged to provide their own hard hat, work gloves and safety glasses for dust protection; however, the school will provide these items if necessary.

Course Duration:
Two weeks, 80-hours.

Who should attend:
Entry level equipment operators

Physical Demands:
Considerable climbing, pulling, bending, stooping, kneeling, standing and lifting (1- 50 lbs.).

Target Industries/ Application:
Public/ private utilities
Public/ private transportation & equipment Maintenance

Class Size: Three students per instructor.

Instruction Method:
Classroom lecture/ discussion, lab Demonstration / explanation (15%), Self-paced hands-on practice / instructor feedback (85%).

Location:
PG&E’s Livermore Learning Center 7205 National Drive, Livermore

For information on course description, enrollment, and fees, please contact:
PG&E Business Development at 1-800-687-5720 or e-mail at valueadd@pge.com.
Electric Construction  
**Basic Climbing – 10 Days**  *(E-ELEC-0001)*

**Course Description:**
The basic climbing course is intended to provide fundamental climbing skills for novice climbers. Students are taught how to safely ascend and descend from wooden poles using metal “climbers” that are attached to their work boots. Students also learn basic maneuvering and body positioning techniques that permit them to perform work at pole-top. Ascent and descent techniques emphasize free climbing procedures (i.e., no safety belt or fall restraint devices are used during the climb and descent). The positioning strap is used at the pole-top work location.

The course combines formal classroom training and extensive hands-on practice in the project field. Highly experienced PG&E instructors guide and critique student performance and conduct objective evaluations of the student’s ability to meet the course requirements. Final certification of student climbing ability is done on the job by representatives of the student’s employer.

Basic Climbing is the first of 7 formal courses and 2 structured field labs that are a part of the PG&E apprentice lineman training program.

Course content covers:
- Climbing equipment and techniques
- Pole testing
- Power system fundamentals
- Steel tower climbing
- Ropes and knots
- Identification of tools, equipment and materials
- Bucket truck rescue
- Pole top rescue

**IMPORTANT NOTE:** Students must successfully complete Basic Climbing before enrolling in Advanced Climbing, Overhead Fundamentals, Live Line Fundamentals, Rubber Glove Fundamentals and Advanced Lineman Techniques.

**Skills Certification and Promotion:**
This class contains tests that are developed by PG&E and approved by the student’s employer. Management personnel, employed by the student’s employer, perform skills certification and promotion on the job.

**Prerequisites:**
Candidates must be at least 18 years old and must have the physical capability (physical fitness, agility, coordination, and freedom from relevant physical disabilities, etc.) to climb, maneuver and perform work at the top of wooden poles. Must be able to read and write at 8th grade level and must be fluent in the English language.

**Who should attend:**
Persons who wish to become journeyman linemen, outside electricians, cable TV and fiber-optic workers, etc.

**Target Industries/Application:**
Municipal/co-op electric utilities
Investor-owned electric utilities
Private utilities
Electrical contractors
Communication workers

**Class Size:** Eight (8) to sixteen (16) students.

**Instructional Method:**
*Formal classes* (approximately 6% of the training time) – classroom lecture/discussion, lab demonstration (15%) and self-paced, hands-on projects and practice (85%).
*OJT* (prior to final certification by employer) – as required to satisfy individual requirements. Instruction and supervision by foreman and journeyman workers of student’s company.

**Location:**
Livermore Learning Center
7205 National Drive
Livermore, CA

**For additional information on course schedule, enrollment, and fees, please contact:**
PG&E Business Development at 1-800-687-5720 or e-mail at valeadd@pge.com
Electric Construction

Basic Electricity- 3 days (E-ELEC-0012)

Course Description:
Basic electricity provides an understanding of the fundamental theory of electrical energy, the principles of electrical circuits and the practical application of this knowledge.

The course combines formal classroom training and extensive hands-on practice in the project lab. Highly experienced PG&E instructors guide and critique student performance and conduct objective evaluations of the student's ability to meet the course requirements.

Course Content:
Academic instruction includes:
- Basic Concepts
- Electrical Quantities and Units
- Basic Circuits, Laws and Measurements
- Circuit Components
- Multiple Load Circuits
- Magnetism and Electromagnetism
- Alternating Current and Voltage
- Power in AC Circuits
- Capacitance
- Inductance
- Transformers
- Resistive, Capacitive and Inductive Circuits

Hands on practice (lab) includes:
- Meter and Simple Circuits
- DC Series Circuits
- DC Parallel Circuits
- DC Series-Parallel Circuits
- Electromagnetism
- Capacitance
- Inductance
- Transformers and Transformer Phasing
- Resistive and Capacitive Series and Parallel Circuits
- Resistive, Capacitive and Inductive Series and Parallel Circuits

Prerequisites:
Candidates must be at least 18 years old, able to use simple formulas to calculate values, able to read and write at 8th grade level and must be fluent in English language. For those interested in careers as electricians or electronic technicians, normal color vision is required (electrical components and wiring are color coded).

Who Should Attend:
Persons who need an understanding of simple electrical devices and circuits, including entry level employees of electric utilities who wish to become electricians, electronic technicians, journeyman linemen, outside electricians, cable TV and fiber-optic workers, etc.

Target Industries/Application:
Municipal/co-op electric utilities
Investor-owned electric utilities
Private utilities
Electrical contractors
Communication workers

Class Size: Twelve (12) to twenty (20) students per class.

Instructional Methods:
The course includes classroom lecture/ discussion, lab demonstration (75%) and self-paced, hands-on projects and practice (25%).

Location:
San Ramon Valley Conference Center
3301 Crow Canyon Road
San Ramon, CA

For information on course description, enrollment, and fees, please contact:
PG&E Business Development at 1-800-687-5720 or e-mail at valueadd@pge.com.
Substation Electrician Skills

Power Circuit Breakers (E-PSOS-0011)

Course Description:
This trainer-lead course utilizes a course text and the PG&E Substation Maintenance & Construction Manual to assist participants in learning the following:
- fundamentals of circuit interruption
- power circuit breaker mechanisms
- types of circuit interrupters
- installation and maintenance of power circuit breakers
- current transformer operation and testing
- overcurrent relay purpose and testing
Participants are exposed to substantial hands-on exercises by completing six lab projects over a two-day time period.

Outcomes:
1. Perform an oil circuit breaker general inspection and pressure-switch rundown
2. Clean, lubricate, and adjust an operating mechanism, and perform an oil circuit breaker contact adjustment
3. Perform a time-distance analysis on an SF6 breaker
4. Perform vacuum circuit breaker diagnostics and minimum-to-trip test
5. Perform current transformer installation tests
6. Bench test overcurrent relays

Prerequisites:
- Formal electricity and electronics training
- Experience interpreting electrical drawings
- Experience with utility substation operation

Course Duration: Five (5) days,

Who should attend:
Electricians and others who are required to maintain or install high voltage power circuit breakers

Target Industries/ Application:
Public / private utilities

Class Size: Five (5) to ten (10) students per class.

Instruction Method:
Trainer-led with substantial learner hands-on projects

Location:
San Ramon Valley Conference Center
3301 Crow Canyon Road
San Ramon, CA

For information on course description, enrollment, and fees, please contact:
PG&E Business Development at 1-800-687-5720 or e-mail at valueadd@pge.com.
Commercial Vehicle Operation

Class A License (E-EQP-0018)

What this course is about:
The Commercial Driver Training course includes safety, laws, logbooks, driver awareness, pre-trip inspection. Road skills are practiced, the driver is put through various scenarios, backing, alley docking, proper shifting techniques and taken on the road to encounter the various road conditions. (i.e., hills freeway, in-town, etc.)

Commercial Driver Training prepares successful candidates to operate a tractor or a tractor-trailer rig with a road ranger transmission; operate any truck weighing in excess of 26,001 pounds (GVWR), tow a trailer with a weight capacity of 10,000 pounds (GVWR) or more as well as tow a pole dolly in excess of 40 feet.

Qualification:
Passing the driving test qualifies the student DMV driver requirements.
At the end of this training our DMV certified trainers will perform a DMV Drivers Test. At the conclusion and upon passing, the student will take a DMV drivers test with DMV local office to obtain a commercial drivers' license.

Course Objectives:
At the end of this course students will be able to:
- perform pre-trip inspections
- perform air brake tests
- operate a three-axle vehicle with trailer
- operate a road ranger transmission
- take a DMV drivers test at the local DMV office to qualify for an unrestricted Class A Commercial Drivers License
- pass performance base driving test per DMV guidelines

Prerequisites:
Students must have passed DMV written Class A Test. DMV driving record printout in hand first day of class.

Course Duration:
One week, 40-hours.

Who should attend:
Person who expects to operate commercial vehicles.

Target Industries/ Application:
Public/private utilities
Public/private transportation & equipment maintenance, Piping system fabrication
Truck Drivers

Class Size:
Three students per instructor

Instruction Method:
Classroom lecture/discussion, lab demonstration explanation (15%), and self pace hands-on practice instructor feedback (85%).

Location:
PG&E's Livermore Learning Center
7205 National Drive, Livermore or client site as arranged with PG&E

For information on course description, enrollment, and fees, please contact:

PG&E Business Development at 1-800-687-5720 or e-mail at valueadd@pge.com.
Corrosion Training/Qualification
Pipeline Gas/Water Systems (E-GAS-0011)

Course Description:
The Corrosion Mechanic training course prepares individuals who perform duties related to corrosion work to safely and consistently meet Corrosion Standards. Course content includes theory (types and causes of corrosion) and practical experience.

The course also includes the safe operation of various types of corrosion equipment. The first part of the course starts with an overview of corrosion, instrumentation and documentation requirements.

The student then advances to:
- Pipe Coatings
- Rectifier Installation/Maintenance/Reads
- Atmosphere Corrosion
- Pipe Inspection
- Pipe-to-Soil Reads
- Cathodic Protection Maintenance
- Galvanic Anode Installation and Maintenance

Performance Objectives:
At the end of this course participants will be able to:
- Install and maintain cathodic protection systems
- Perform cathodic protection activities consistent with relevant regulators requirements

References:
PG&E’s training is in accordance with CPUC G.O. 112-E, and DOT 49 CFR Part 192 L, M, I and D 195 requirements.

Course Objectives:
- Understand the basic corrosion cell
- Understand and use Ohms law
- Size CP systems
- Monitor and record critical aspects of cathodic protection activities in their division
- Explain CPUC regulations relating to cathodic protection

Prerequisites: None

Physical Demands:
Considerable bending, stooping, kneeling, standing and lifting (1-50 lbs.).

Course Duration: Ten (10) days

Who should attend:
Engineers, Pipeline workers, others

Personal safety equipment:
Safety glasses, gloves, cotton long sleeve shirt, cotton work pants and work boots

Target Industries/ Application:
Public/private utilities
Public/private transportation & equipment maintenance
Piping system fabrication

Class Size: Four (4) to eight (8) students

Instruction Method:
Classroom lecture/discussion, lab demonstration/explanation (15%) Self-paced hands-on practice/instructor feedback (85%)

Locations:
PG&E’s Learning Center
3301 Crow Canyon Road
San Ramon, CA

PG&E’s Livermore Learning Center
7205 National Drive
Livermore, CA

For information on course description, enrollment, and fees, please contact:
PG&E Business Development at 1-800-687-5720 or e-mail at valueadd@pge.com
Construction Applications

Digger Derrick (Line Truck) Operation (E-EQIP-0015)

Course Description:
The course objective is to provide the student with the necessary knowledge and manipulative skills to perform basic line truck operating techniques required for safe and efficient operation of the line truck.

Training modules are job-related and involve a substantial amount of field practice to build proficiency operating the equipment.

At the end of this course students will be able to:
- Perform safe equipment operation and inspection
- Perform daily maintenance on the line truck
- Demonstrate minimum standards for safe and efficient line truck operation
- Demonstrate safe and efficient line truck operation

To successfully complete this course the student must pass a written and performance base test.
- The written test is on line truck safety and set-up
- Proficiency test operating the line truck under various construction situations

Qualification:
This qualifies the student to operate the line truck per CCR Title 8 requirements

Course Objectives:
- Perform various line truck and maneuvering tasks.
- Perform pre-start inspection.
- Pass performance based test.
- Pass written test.

Prerequisites:
None

Course Duration:
One day, or 6 – 8 hours.

Who should attend:
Person who expect to operate line trucks.
Entry level equipment operators

Target Industries/ Application:
Public/private utilities
Public/private transportation & equipment maintenance, Piping system fabrication
Truck Drivers

Class Size: Five (5) students per instructor

Instruction Method:
Classroom lecture/discussion, lab demonstration explanation (15%), and self pace hands-on practice
Instructor feedback (85%).

Location:
PG&E’s Livermore Learning Center
7205 National Drive, Livermore or client site as arranged with PG&E

For information on course description, enrollment, and fees, please contact:

PG&E Business Development at 1-800-687-5720 or e-mail at valueadd@pge.com.
Welding Applications

Oxygen Acetylene Welding and Cutting (E-GAS-0001)

Course Description:
The course objective is to provide the student with the necessary knowledge and manipulative skills to perform industrial oxyacetylene fusion welding on steel pipe.

The course also includes the safe operation of welding for both manual and machine oxyacetylene cutting equipment. The first part of the course starts with cutting and welding techniques for 10 gage steel plate, producing fillet and open groove butt welds in the flat, vertical, and overhead positions.

The student then advances to cutting and welding 3/8-inch up to 4-inch diameter steel pipe, service branches and sleeve welds in the horizontal fixed position. All welding is single pass using the forehead welding technique.

Upon completion of this course the student will be given written and physical welding tests.

- The written test is on welding theory and safety.
- The physical welding test is first a visual and then a destructive test on 4-inch diameter pipe, 4-inch sleeve, and a ¾-inch service branch on top of 4-inch pipe.

References:
PG&E's training is in accordance with the National Industrial Welding Code, CPUC G.O. 112-E, and DOT 49 CFR Part 192 requirements.

Course Objectives:
- Safely perform oxyacetylene fusion welding and cutting tasks.
- Safely perform manual plasma arc cutting tasks.
- Receive testing on visual and destructive welding for the following:
  - 4-inch diameter pipe,
  - 3/4-inch onto 4-inch diameter service branch, and
  - the 4-inch diameter sleeve weld.

Prerequisites: None

Physical Demands:
Considerable bending, stooping, kneeling, standing and lifting (1-50 lbs.).

Course Duration: Fifteen (15) days

Who should attend:
Entry level welding
(A upon confirmation of enrollment, students will be informed of the clothing and personal protection requirements.)

Target Industries/ Application:
Public/private utilities
Public/private transportation & equipment maintenance.
Piping system fabrication

Class Size: Four (4) to eight (8) students per class.

Instruction Method:
Classroom lecture/discussion, lab demonstration/explanation (15%) Self-paced hands-on practice/instructor feedback (85%).

Location:
PG&E's San Ramon Learning Center
3301 Crow Canyon Road
San Ramon, CA

PG&E's Livermore Training Center
7205 National Drive
Livermore, CA

For information on course description, enrollment, and fees, please contact:
PG&E Business Development at 1-800-687-5720 or e-mail at valueadd@pge.com.
Construction Applications

Excavation Safety Training (E-EQIP-0017)

Course Description:
The course is to provide the student with the necessary knowledge and manipulative skills to apply the regulations associated with trenches and excavations.

Students will be given instruction in:
- Recognizing soil conditions; and
- Recognizing hazards around excavation
- Recognizing soil types
- Determining proper protective system

Upon completion of this course the student will be given a written test and a performance based test.

- The written test is on identifying soil analysis
- Identifying hazards
- Sloping & Shields
- Sloping & Benching
- Identifying A, B, & C - Type soil
- The performance based test is on properly installing shores

Student’s employer shall be responsible for independently verifying student possesses the necessary skill and knowledge to work in and/or around excavations

Qualification:
This course is in accordance with CCR Title 8 requirements

Course Objectives:
At the end of this course students will be able to:
- Apply the regulations associated with trenches and excavations
- Identify hazards in and around excavations
- Identify / classify soil types
- Determine appropriate protective system

Prerequisites:
None

Course Duration:
One day or 8 hours.

Who should attend:
Person who expect to excavate, enter into and/or work around open excavations

Target Industries/ Application:
Public/ private utilities
Public/ private transportation & equipment maintenance, Park Districts, Cities

Class Size: Ten (10) to fifteen (15) students.

Instruction Method:
Classroom lecture / discussion, lab demonstration/ explanation (85%), and self pace hands-on practice/ instructor feedback (15%).

Location:
PG&E’s Livermore Learning Center
7205 National Drive, Livermore or client site as arranged with PG&E

For information on course description, enrollment, and fees, please contact:
PG&E Business Development at 1-800-687-5720 or e-mail at valueadd@pge.com.
Course Description:
The course objective is to provide the student with the necessary knowledge and manipulative skills to perform industrial basic forklift operating techniques required for safe and efficient operation of the forklift.

Training modules are job-related and involve a substantial amount of field practice to build proficiency operating the equipment.

At the end of this course students will be able to:
- perform safe equipment operation and inspection
- perform daily maintenance on the forklift
- demonstrate minimum standards for safe and efficient forklift operation
- demonstrate safe and efficient forklift operation

To successfully complete this course the student must pass a written and performance base test.
- The written test is on forklift safety
- Proficiency test operating the forklift under various situations

Qualification:
This qualifies the student to operate the forklift per CCR Title 8 requirements

Course Objectives:
- Perform various loading and maneuvering tasks.
- Perform pre-start inspection.
- Pass performance based test.
- Pass written test.

Prerequisites:
None

Course Duration:
6 to 8 hours.

Who should attend:
Entry level forklift operators

Target Industries/ Application:
Public/private utilities
Public/private transportation & equipment maintenance

Class Size: Twelve (12) students

Instruction Method:
Classroom lecture/discussion, lab demonstration/explanation (50%), and self pace hands-on practice/instructor feedback (50%).

Location:
PG&E's Livermore Learning Center
7205 National Drive, Livermore or client site as arranged with PG&E

For information on course description, enrollment, and fees, please contact:
PG&E Business Development at 1-800-687-5720 or e-mail at valueadd@pge.com.
Gas Leak Survey Training/Qualification

Routine Foot Patrol (E-GAS-0014)

Course Description:
The course objective is to provide the participant with the necessary knowledge and skill to perform routine foot survey on gas facilities.

The course also includes uniform minimum requirements for the performance of gas leak survey of pipelines, buried station piping, mains and services in order to detect, report and repair leaks and establish a system of record.

At the end of this course participants will be able to:
- Read a gas map to locate and identify underground gas facilities
- Conduct and document 1, 3 and 5 year leak surveys
- Conduct minor maintenance on instruments
- Apply lead grading criteria accurately

Upon completion of this course the participant will be given written and physical routine foot survey tests.
- The written test is grading gas leak and knowledge on leak survey.
- The physical test is foot survey and grading gas leaks in the field.

References:
PG&E’s training is in accordance with CPUC G.O. 112-E, and DOT 49 CFR Part 192 L, M, I and D requirements.

Course Objective:
Given a portable hydrogen flame ionization instrument (Flame Pack) a gas map, leak surveyor must be able to perform routine foot survey in the following situations:
- Main under unpaved area
- Main under sidewalk adjacent to unpaved area
- Main under sidewalk wall to wall paving
- Main under paving within 8 of curb
- Main in casing – inserted main

Prerequisites: None

Physical Demands:
Considerable bending, stooping, kneeling, standing and lifting (1-50 lbs.).

Course Duration: One-day (8 hours).

Who should attend:
Entry and journey gas construction workers, and others.

Personal safety equipment:
Safety glasses, gloves, cotton long sleeve shirt, cotton work pants and work boots

Target Industries/ Application:
Public/private utilities, Public/private transportation & equipment maintenance, and Piping system fabrication.

Class Size: Eight (8) to ten (10) students per class.

Instruction Method:
Classroom lecture/discussion, lab demonstration/explanation (35%)
Self-paced hands-on practice/instructor feedback (65%)

Locations:
Client’s location as arranged with PG&E and its Mobile Technical Training facility.

PG&E’s Learning Center
3301 Crow Canyon Road
San Ramon, CA

PG&E’s Livermore Learning Center
7205 National Drive
Livermore, CA

For information on course description, enrollment, and fees, please contact:

PG&E Business Development at 1-800-687-5720 or e-mail at valueadd@pge.com.
Electric Construction
Live Line Fundamentals (E-ELEC-0013)

Course Description:
In this course, students learn how to use insulated tools (hot tools) to work in lines and equipment energized up to 21,000 volts. Classroom instruction covers job planning and preparation as well as techniques for using specialized tools for doing hot work.

The academic course at Livermore focuses on teaching tool recognition and application and the acquisition of basic work skills using the tools.

Academic Course Content (5 Days):
- Care and use of rubber protective devices
- Identification and use of hot tools
- Operation of overhead line equipment
- Use of phasing set
- Use of load break tool and fired wedge connector
- Field hot line projects

IMPORTANT NOTE: Students must successfully complete Basic Climbing before enrolling in Advanced Climbing, Overhead Fundamentals, Live Line Fundamentals, Rubber Glove Fundamentals and Advanced Lineman Techniques.

Prerequisites:
Candidates must be at least 18 years old and must have the physical capability (physical fitness, agility, coordination, and freedom from relevant physical disabilities, etc.) to climb, maneuver and perform work at the top of wooden poles. Must be able to read and write at 8th grade level and must be fluent in the English language. Must have completed Advanced Climbing course, must have practiced climbing after Basic Climbing and must be a certified climber (as determined by employer). Advanced climbing skills and the ability to work from the pole are essential.

Who should attend:
Employees of electric utilities who wish to become journeyman linemen or outside electricians.

Target Industries/Application:
Municipal/co-op electric utilities
Investor-owned electric utilities
Private utilities
Electrical contractors

Class Sizes:
Varies – between 12 and 20 depending on course.

Instructional Method:
Formal classes (approximately 6% of the training time) – classroom lecture/discussion, lab demonstration (15%) and self-paced, hands-on projects and practice (85%).
OJT (prior to final certification by employer) – as required to satisfy individual requirements. Instruction and supervision by foreman and journeyman workers of student’s company.

Location:
Livermore Learning Center
7205 National Drive
Livermore, CA

Schedule:
To be determined

For information on course description, enrollment, and fees, please contact:
Jon Dailey, Business Manager
PG&E – Technical Training Solutions
(415) 973-6406
Cell (415) 439-3228
Shield Metal Arc Welding (E-GAS-0002)

Course Description:
The course objective is to provide the student with process theory, safety, and manipulative skills to apply the downhill Shielded Metal Arc Welding technique for fabricating service piping systems.

The students will start arc welding with 3/8-inch steel plate, single-vee open groove butt joint in the flat, vertical, and overhead positions using E6010 electrode.

The student will then advance to 8-inch diameter, 0.188-inch wall steel pipe, single-vee open groove butt joint in the horizontal fixed position. All welding will be done in the downhill welding direction using multiple passes.

Upon completion of this course the student will be given written and physical welding tests.
- The written test is on process theory, practice, and safety.
- The physical welding test is first a visual and then a destructive test on 8-inch diameter pipe, 4-inch sleeve, and ¾-inch service branch on top of 4-inch pipe.

Physical Demands:
Considerable bending, stooping, kneeling, standing and lifting (1-50 lbs.).

Course Duration: Fifteen (15) days

Who should attend:
Welder, Metal and piping fabricator
(A Upon confirmation of enrollment, students will be informed of the clothing and personal protection requirements.)

Target Industries/ Application:
Public/private utilities
Public/private transportation & equipment maintenance
Piping system construction

Class Size: Four (4) to eight (8) students per class.

Instruction Method:
Classroom lecture/discussion, lab demonstration/explanation (15%).
Self-paced hands-on practice and feedback (85%).

Location:
San Ramon Learning Center
3301 Crow Canyon Rd., San Ramon

For information on course description, enrollment, and fees, please contact:
PG&E Business Development at 1-800-687-5720 or e-mail at valueadd@pge.com

References:
PG&E's training is in accordance with the National Industrial Welding Code, CPUC G.O. 112-E, and DOT 49 CFR Part 192 requirements.

Course Objectives:
- Understand theory, practices, and safety associated with the welding process.
- Safely perform welding manipulative skills and techniques using the Shielded Arc Welding processes in the vertical-down (downhill) direction with E6010 electrode.
- Receive testing on visual and destructive welding for the following:
  - 8-inch diameter pipe,
  - 3/4-inch onto 4-inch diameter branch service, and
  - the 4-inch diameter sleeve weld.

Prerequisites:
None.
Construction Applications

Mark and Locate Training (E-GAS-0016)

Course Description:
The course is designed for participants who are responsible for performing mark and locate duties. The Participant will learn the (CGC) California Government Code 4216 thru 4216.9. The purpose of Mark and Locate is to provide systematic and thorough training in safe work procedures that result in accurate marking of underground gas and electric facilities.

At the end of this course participants will be able to:
- Read a gas or electric map to find underground facilities
- Use conductive and inductive methods to locate underground facilities in accordance with California Assembly Bill 73 specifications
- Locate and interpret cable tags
- Operate and maintain locators
- Interpret and prioritize USA tags
- Apply standard marking methods and symbols consistent with USA requirements

Upon completion of this course the participant will be given a written test and a performance based test.

- The written test is on gas and electric reading and theory and procedures
- The performance based test is on pinpoint locating of underground facilities

Qualification:
This course is in accordance with the California One Call Law.

Course Objectives:
- Gas & Electric map reading
- Conductive and Inductive locating
- Pass performance based test
- Pass written test

Prerequisites: None

Course Duration: Two days (16 hours).

Who should attend:
Person who expects to perform mark and locate duties.

Target Industries/ Application:
Public/ private utilities.

Class Size: Ten (10) to fifteen (15) students per class.

Instruction Method:
Classroom lecture/ discussion, lab demonstration/ explanation (15%), and self pace hands-on practice/ instructor feedback (85%).

Locations:
Client’s location as arranged with PG&E

PG&E’s Learning Center
3301 Crow Canyon Road
San Ramon. CA

PG&E’s Livermore Training Center
7205 National Drive
Livermore, CA

For information on course description, enrollment, and fees, please contact:

PG&E Business Development at 1-800-687-5720 or e-mail at valueadd@pge.com
Plastic Fusion Training/Qualification

Plastic Socket, Butt, Branch and Saddle Fusion (E-GAS_0006)

Course Description:
The course objective is to provide the student with the necessary knowledge and skill to perform plastic fusions on plastic gas facilities.

The course also includes the safe operation of various types of plastic fusions and plastic fusion equipment. The first part of the course starts with overview of fittings, pipe, tools, equipment, gas installation and static electricity.

The student then advances to fusion procedures;
• 1/2", 1-1/4", 2" and 3" socket fusions
• 1-1/4", 2", and 3" saddle fusions
• 3" and 4" butt fusions
• 3" x 2" and 2" x 2" branch saddle fusions
• mechanical fittings (couplings, dead ends and service tees)
• use of proper tools and technique for installation
• tapping out service tees and squeezing plastic pipe

Upon completion of this course the student will be given written and physical plastic tests.
• The written test is on fusion knowledge, preparation, iron heating, fusion, holding and cooling times
• The physical plastic test is first a visual and then a destructive test on a 2" saddle, 2" coupling, 3" x 2" branch saddle and 3" butt fusion.

Physical Demands:
Considerable bending, stooping, kneeling, standing and lifting (1-50 lbs.).

Course Duration: Two days

Who should attend:
Enter level plastic fusers, others

Personal safety equipment:
Safety glasses, gloves, cotton long sleeve shirt, cotton work pants and work boots

Target Industries/Application:
Public/private utilities
Public/private transportation & equipment maintenance
Piping system fabrication

Class Size: Four (4) to ten (10) students

Instruction Method:
Classroom lecture/discussion, lab demonstration/explanation (15%) Self-paced hands-on practice/instructor feedback (85%).

Locations:
Client’s location as arranged with PG&E
PG&E’s Learning Center
3301 Crow Canyon Road
San Ramon, CA

PG&E’s Livermore Training Center
7205 National Drive
Livermore, CA

For information on course description, enrollment, and fees, please contact:
PG&E Business Development at 1-800-687-5720 or e-mail at valueadd@pge.com.

References:
PG&E’s training is in accordance with CPUC G.O. 112-E, and DOT 49 CFR Part 192 L, M, I and D requirements.

Course Objective:
• Fusion preparation
• Safely perform plastic fusions tasks
• Receive qualification on visual examination and destructive (deformation) fusion for the following:
• 2" saddle, 2" coupling, 3" x 2" branch saddle and a 3" butt fusion

Prerequisites: None
Substation Electrician Skills

Regulators / Load Tap Changers (E-PSOS-0010)

Course Description:
This trainer-lead course utilizes a course text and the PG&E Substation Maintenance & Construction Manual to assist participants in learning the function of substation regulators and load tap changers (LTC). Participants perform inspections and maintenance on several types of LTC during the course.

Outcomes:
1. Identify component functions on the Siemens-Allis JFR regulator
2. Adjust contacts on the Allis Chalmers TLH-21
3. Perform routine maintenance on the McGraw Edison 550C
4. Perform routine maintenance on the Waukesha UZDRT
5. Perform routine maintenance on the Federal Pacific TC25
6. Set controls on the Seimens MJ-3A, the Siemens MJ-X, and the Cooper CL-5C

Prerequisites:
- Formal electricity and electronics training
- Experience interpreting electrical drawings
- Experience with utility substation operation
- Formal three phase power transformer training

Course Duration: Four (4) days

Who should attend:
Electricians and others who are required to maintain or install regulators or load tap changers

Target Industries/Applications:
Public / private utilities

Class Size: Five (5) to ten (10) students per class.

Instruction Method:
Trainer-led with substantial learner hands-on projects

Location:
San Ramon Valley Conference Center
3301 Crow Canyon Road
San Ramon, CA

For information on course description, enrollment, and fees, please contact:

PG&E Business Development at 1-800-687-5720 or e-mail at valueadd@pge.com.
Electric Construction
Rubber Glove Fundamentals and Field Lab (E-ELEC-0014)

Course Description:
In this course, students learn how to use rubber gloves along with insulated platforms and insulated aerial lifts to work in lines and equipment energized up to 21,000 volts. Classroom instruction covers job planning and preparation as well as techniques for using specialized tools for doing rubber glove work.

The academic course at Livermore focuses on teaching proper work procedures (tool selection, use of protective rubber insulating devices, communication techniques, etc.) necessary for hands-on work on energized high voltage lines and equipment.

Course Content:
- Rubber glove theory
- Rubber glove work procedures
- Specialized rubber goods
- Use of aerial lifts and insulated work platforms
- Field rubber glove projects

IMPORTANT NOTE: Students must successfully complete Basic Climbing before enrolling in Advanced Climbing, Overhead Fundamentals, Live Line Fundamentals, Rubber Glove Fundamentals and Advanced Lineman Techniques.

Course Duration: Five (5) days

Prerequisites:
Candidates must be at least 18 years old and must have the physical capability (physical fitness, agility, coordination, and freedom from relevant physical disabilities, etc.) to climb, maneuver and perform work at the top of wooden poles. Must be able to read and write at 8th grade level and must be fluent in the English language. Must have completed Advanced Climbing course, must have practiced climbing after Basic Climbing and must be a certified climber (as determined by employer). Advanced climbing skills and the ability to work from the pole are essential.

Who should attend:
Persons who wish to become journeyman linemen or outside electricians.

Target Industries/Application:
Municipal/co-op electric utilities
Investor-owned electric utilities
Private utilities
Electrical contractors

Class Size: Eight (8) to twelve (12) students.

Instructional Method:
Formal classes (approximately 6% of the training time) – classroom lecture/discussion, lab demonstration (15%) and self-paced, hands-on projects and practice (85%).
OJT (prior to final certification by employer) – as required to satisfy individual requirements.
Instruction and supervision by foreman and journeyman workers of student’s company.

Location:
Livermore Learning Center
7205 National Drive
Livermore, CA

For information on course description, enrollment, and fees, please contact:
PG&E Business Development at 1-800-687-5720 or e-mail at valueadd@pge.com
Substation Electrician Skills

Power Transformers (E-PSOS-0012)

Course Description:
This trainer-lead course utilizes a course text and the PG&E Substation Maintenance & Construction Manual to assist participants in learning the following:
- three phase power transformer fundamentals
- transformer bank connections
- transformer bank accessory equipment
- interpreting nameplate information
- installation and maintenance procedures
Participants are exposed to substantial hands-on exercises by completing ten lab projects over a two-day time period.

Outcomes:
1. Perform a transformer turns ratio test on a single phase voltage regulator for all tap positions
2. Calibrate oil temperature devices
3. Perform a vacuum oil fill using the transformer simulator
4. Perform a dew point test
5. Extract an oil sample for lab testing
6. Perform a D-877 and a D-1816 dielectric oil tests
7. Connect three single-phase transformers in either wye or delta configurations and then perform a transformer turns ratio test to verify connections are correct
8. Perform an insulation resistance test
9. Perform a polarization index test
10. Perform a low-voltage excitation test

Prerequisites:
- Formal electricity and electronics training
- Experience interpreting electrical drawings
- Experience with utility substation operation

Course Duration: Five (5) days

Who should attend:
Electricians and others who are required to maintain or install power transformer banks.

Target Industries/Application:
Public / private utilities

Class Size: Five (5) to ten (10) students per class.

Instruction Method:
Trainer-led with substantial learner hands-on projects

Location:
San Ramon Valley Conference Center
3301 Crow Canyon Road
San Ramon, CA

For information on course description, enrollment, and fees, please contact:
PG&E Business Development at 1-800-687-5720 or e-mail at valueadd@pge.com.
Electric Construction

Underground Fundamentals – 5 Days (E-ELEC-0011)

Course Description:
This course is an introduction to underground distribution systems. It covers switches, fuses, transformers, cables and all related components and procedures. Cable pulling and cable terminations (splices and connectors) are presented.

The cable splicing lab includes the fabrication of a cable splice and three cable terminations (elbows).

Course content covers:
• Underground construction standards
• General Order 128
• Introduction to cable pulling
• Operation of underground line equipment
• Grounding procedures in underground systems
• Phasing procedures in underground systems
• Introduction to fault locating equipment
• Cable splicing and terminations

IMPORTANT NOTE: Climbing skills are not required for this course.

Prerequisites:
Candidates must be at least 18 years old and must have the physical capability (physical fitness, agility, coordination, and freedom from relevant physical disabilities, etc.). Must be able to read and write at 8th grade level and must be fluent in English language. Must have knowledge of poly-phase electrical distribution systems, single and 3-phase transformer connections and PG&E safety procedures, operations and maintenance procedures and technical documentation system provided as pre-work to the course.

Who should attend:
Persons who wish to become journeyman linemen or outside electricians.

Target Industries/Application:
Municipal/co-op electric utilities
Investor-owned electric utilities
Private utilities

Class Size: Eight (8) to sixteen (16) students.

Instructional Method:
Formal classes (approximately 6% of the training time) – classroom lecture/discussion, lab demonstration (15%) and self-paced, hands-on projects and practice (85%).
OJT (prior to final certification by employer) – as required to satisfy individual requirements.
Instruction and supervision by foreman and journeyman workers of student’s company.

Location:
Livermore Learning Center
7205 National Drive
Livermore, CA

For information on course description, enrollment, and fees, please contact:
PG&E Business Development at 1-800-687-5720 or e-mail at valueadd@pge.com