

# PACIFIC GAS AND ELECTRIC COMPANY

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October 8, 1971

Local Union No. 1245  
International Brotherhood of  
Electrical Workers, AFL-CIO  
P. O. Box 4790  
Walnut Creek, California 94596

Attention: Mr. L. L. Mitchell, Business Manager

Gentlemen:

In accordance with Paragraph G-1 of the Master Apprenticeship Agreement, Company proposes adoption of the "Guidelines For the Apprentice Transmission Mechanic Training Program" previously submitted to the Union.

Changes to the guidelines, as discussed at our last meeting, are attached and circled in red.

If you are in accord with the foregoing and the attachment and agree thereto, please so indicate in the space provided below and return one executed copy of this letter to Company.

Yours very truly,

PACIFIC GAS AND ELECTRIC COMPANY

By *J. V. Bonbright*  
Manager of Industrial Relations

The Union is in accord with the foregoing and it agrees thereto as of the date hereof.

LOCAL UNION NO. 1245, INTERNATIONAL  
BROTHERHOOD OF ELECTRICAL WORKERS, AFL-CIO

January 4, 1972, 1971 By *L. L. Mitchell*  
Business Manager

## GUIDELINES FOR THE

### APPRENTICE TRANSMISSION MECHANIC TRAINING PROGRAM

#### I. Objective of the Apprentice Transmission Mechanic Training Program

The need for trained and fully qualified employees to accomplish the duties specified in the Journeyman Transmission Mechanic definition in a manner consistent with Company's Standards of Construction, Safety and Performance has resulted in this program which coordinates extensive on-the-job and related academic training. The systematic acquisition of knowledge and skill offers the employee in training the vehicle to attain self-confidence, assuredness and satisfaction in his work, and the correct and safe method of performing Company's work.

#### II. Training

During the 30 months of the apprenticeship, the apprentice will be offered job training divided into five time periods which coincide with the wage steps of the classification. In order that uniform and safe practices will be followed in the training period, assignments of duties and work procedures shall be provided in each of the wage steps as outlined in these guidelines and the attached schedules. The amounts of time or units of work as indicated in the schedules are believed sufficient to permit the apprentice to develop proficiency in such duty or work procedures, but should not be considered as inflexible dependent on the demonstrated ability of each individual apprentice.

The attached schedule also specifies those training periods in which the apprentice shall receive related academic or class training.

On-the-job training in the duties and amount of such training, as specified in the OJT schedule shall apply to the extent that such duties are performed by journeymen where the apprentice is headquartered. In the event such duty is not performed by journeymen at his headquarters and therefore not available in the training of an apprentice, it shall be noted in his work record. However, his progression through the apprenticeship or to journeyman or to higher classifications shall not be deterred for this reason.

If in the course of his apprenticeship or as a journeyman such duty later becomes available, he shall receive on-the-job training as may be required to attain expected journeyman proficiency. If, after a reasonable opportunity, he fails to attain such proficiency, his bids for progression to higher classifications may be subject to the provisions of Section 205.11 of the Agreement.

A. General Guidelines

1. It is intended that assignment of the specified hours of training on the job for each period of the apprenticeship will be made to the apprentice as early in the period as is practicable.
2. Hours shown on the OJT schedule exclude any travel time needed to reach the place where training is to be given; however, such hours include time needed to prepare tools and equipment.
3. Except where otherwise specified, apprentices shall be trained by assignment to work with qualified journeymen.
4. Progressive work experience in all phases of plant and pipeline work will be provided throughout the first five periods of the apprenticeship in accordance with the attached OJT schedule.
5. Assignments during the last or fifth period will be made for the purpose of rounding out the apprentice's experience.
6. Upon entering each new wage step and period of training, the work assignments in the period shall be such that the apprentice will gain the basic knowledge and confidence in himself, the equipment and the procedure being used. More complex assignments shall be made progressively as the apprentice gains in knowledge and capability.
7. Assignments of duties and work procedures in any period of training shall be confined to those specified for the period or of a prior period.
8. As an apprentice, he may be assigned to work without direct supervision as part of a crew only after he has been instructed and trained on the duties or work procedures required; has performed such work under direct supervision; and is capable of performing such work safely.
9. Except in emergency circumstances, an apprentice shall not be temporarily assigned to the classification of Transmission Subforeman. If assigned to such classification, the apprentice shall not be given the responsibility for duties or work assignments beyond his current step of training.
10. If an apprentice does not maintain an acceptable academic or on-the-job work level, notice shall be given to Union's Business Representative or his designate.

B. Guidelines for Training Period

1. 0-6 Month's Step

During the first six-month period the apprentice will be introduced to the operating procedures and practices that apply to work performed in a compressor plant or station and on the pipeline. He shall gain a general understanding of the operation and maintenance of all the equipment associated with compressor plant and pipeline by participation in the maintenance work which is performed provided that:

- (a) All rotating mechanical equipment is removed from service by others.
- (b) The apprentice is not required to work on pressurized lines, vessels or headers.
- (c) Any work performed on plant shutdown equipment be done under the direct supervision of a journeyman.
- (d) Any work performed on pipeline be done under the direct supervision of a journeyman.
- (e) The apprentice is not required to operate heavy equipment near pressurized lines.

The apprentice shall be trained in the duties of a Transmission Mechanic, as indicated for the 0-6 month's period on the attached OJT schedule. In conjunction with such work, he shall become thoroughly familiar with the correct nomenclature of each piece of equipment and the part it plays in the transmission of natural gas.

The academic training for this period will include courses on blueprint reading, internal combustion engines, combustion gas turbines, pipeline patrol instructions, rigging, mathematics, drawings and instruction books.

On-the-job training will coincide with related academic training. The Area Engineer will provide academic training as early as possible in the training period and will also administer agreed-upon tests when the academic training is completed.

- (a) Should the apprentice fail to receive a passing score in any of the academic training, he shall be given notice in writing of the areas which caused his failure.
- (b) After such failure, he shall be allowed to retake the test upon his request any time after one month's time from his failure. He shall be allowed two additional retests, spaced at least one month apart.
- (c) He shall complete the academic training and pass the agreed-upon test not later than the end of his ninth month of training, regardless of the number of retests that he has requested. His failure to meet this standard of achievement will be cause for his removal from the classification in accordance with Paragraph G4, 5 and 6a of the Master Apprenticeship Agreement.

- (d) His progression to the second step of the apprentice classification shall be in accordance with Paragraphs G3 and 5 of the Master Apprentice Agreement.

## 2. 7-12 Month's Step

The apprentice shall continue to perform functions of the prior period and, in addition, shall learn the duties outlined in the 7-12 month's period on the attached OJT schedule. He may work on pressurized lines, vessels and headers and may position heavy equipment with direction as part of the crew.

During this period he will receive basic instruction on different types of test equipment used in the compressor plant or on the pipeline and an introduction to machine shop application.

The academic training for this period will include a continuation of some of the previous courses and an introduction to procedures dealing with gas detecting, electronic pipe finding and pipe cleaning and wrapping along with courses in mechanical drawing and machine shop theory and practice.

Agreed-upon tests will be given when the academic training is completed and if he failed to receive a passing score, the apprentice shall be notified in writing of the reasons for his failing.

His retesting opportunities shall be in accordance with the schedule outlined in the 0-6 month section of these guidelines. In the event of failure to meet either the academic or on-the-job standards of achievement, his progression shall be in accordance with Paragraphs G4, 5 and 6 of the Master Apprenticeship Agreement.

## 3. 13-18 Month's Step

The apprentice shall continue to perform the duties specified for prior periods and, in addition, learn the duties outlined on the OJT schedule for this period of his apprenticeship. He should operate with reasonable proficiency pipeline test equipment. He may work without direct supervision as part of a crew on plant shutdown equipment. While working with a journeyman, he shall learn the procedures for obtaining clearances to remove rotating equipment from service. Such work shall include shutting down compressors, generators, installation of man-on-line tags and observance of other safety procedures.

During this period the apprentice will be given continued training in heavy equipment operation and maintenance, plant analytic test equipment and additional machine shop experience which will include simple set ups, straight turning and boring, internal and external thread and bushing operations.

The academic training for this period will include a continuation of the previous periods' assignments and an introduction to basic hydraulics.

Agreed-upon tests will be given when the academic training is completed and if he failed to receive a passing score, the apprentice shall be notified in writing of the reasons for his failing.

His retesting opportunities shall be in accordance with the schedule outlined in the 0-6 month's section of these guidelines. In the event of failure to meet either the academic or on-the-job standards of achievement, his progression shall be in accordance with Paragraphs G4, 5 and 6 of the Master Apprenticeship Agreement.

#### 4. 19-24 Month's Step

The apprentice shall continue to perform the duties specified for prior periods and, in addition, will learn the duties outlined on the attached OJT schedule for this period of his apprenticeship. He shall gain proficiency in the use of test equipment used in the compressor plant or station and become familiar with the correct operation while analyzing engine performance. He will learn to interpret test data under the direction of a journeyman. He shall be reasonably proficient in the operation and maintenance of light construction and motor vehicle equipment. During this period continued emphasis shall be placed on the apprentice's training in heavy equipment operation and maintenance.

The academic training for this period will include a continuation of the previous periods' assignments as shown on the academic schedule and an introductory course to couplings, gear trains and V-belt drives.

Agreed-upon tests will be given when the academic training is completed and if he failed to receive a passing score, the apprentice shall be notified in writing of the reasons for his failing.

His retesting opportunities shall be in accordance with the schedule outlined in 0-6 month's section of these guidelines. In the event of failure to meet either the academic or on-the-job standards of achievement, his progression shall be in accordance with Paragraphs G4, 5 and 6 of the Master Apprenticeship Agreement.

#### 5. 25-30 Month's Step

The apprentice shall continue to work as provided in the prior periods and, in addition, will learn the duties outlined on the attached OJT schedule for the appropriate period. He shall demonstrate a reasonable proficiency in the maintenance and operation on all motor vehicles, light and heavy construction equipment.

The academic training for this period will include a continuation of the previous periods' assignments as shown on the academic schedule and two introductory courses on carpentry fundamentals and concrete technology.

Agreed-upon tests will be given when the academic training is completed and if he failed to receive a passing score, the apprentice shall be notified in writing of the reasons for his failing.

His retesting opportunities shall be in accordance with the schedule outlined in the 0-6 month's section of these guidelines. In the event of failure to meet either the academic or on-the-job standards of achievement, his progression shall be in accordance with Paragraphs G4, 5 and 6 of the Master Apprenticeship Agreement.

At the conclusion of this period, the apprentice should be able to provide routine maintenance on all plant and pipeline facilities and equipment.

6. 31-36 Month's Step

The apprentice will be allowed to do any work normally performed by a journeyman, working alone without direct supervision as required by the job. He will be provided additional on the job training as required to complete training.

C. Records

1. It shall be the responsibility of each apprentice to maintain his own records in collaboration with each Area Engineer and his immediate supervisor. Upon completion, each periodic record shall be submitted to the Area Superintendent.
2. It shall be the responsibility of each Area Superintendent to keep necessary files of records on each apprentice and to ascertain that each apprentice has a reasonable opportunity of meeting the Standards of Achievement set forth in these guidelines.
3. Such records shall at all times be available during the apprenticeship for review by the Department Administrator, the employee, and representative of the Union.
4. In addition to and precedent to these guidelines, the provisions of the Master Apprenticeship Agreement are applicable.



Subject: Incidental Welding

Text: Fabrication of Oxy-Acetylene Welded Steel and Wrought Iron Piping

Assignment Period: 7 - ~~18~~<sup>24</sup> Months (40 hours)

Instructions:

The purpose of this on-the-job training is to acquaint the apprentice with the different types of welding equipment and various procedures and techniques. On-the-job training should coincide with the related academic training whenever possible.

Key points and assignments to be discussed and demonstrated are:

- a. Identify equipment. - A.C. and D.C. welders, protective wearing apparel.
- b. Make initial adjustment on welder. - Set D.C. welder for job and electrode, set A.C. welder for job and electrode.
- c. Prepare job for welding. - Secure area, prepare metal for weld, provide most efficient job set-up. (PG&E Safety Rule Book)
- d. Select proper electrode. - Protect from damage, make selection using A.W.S. numbering system, use type and diameter electrode to suit specific needs.
- e. Weld five basic joints. - Describe a butt, lap, tee, corner, and edge joint and their uses, prepare joint for weld, weld each basic joint, using most efficient method dictated by the job.
- f. Deposit weld in a flat position. - Stroke and maintain proper length arc, deposit an acceptable single bead, join two pieces of metal using multiple passes.
- g. Deposit weld in a horizontal, vertical and overhead position. - Deposit beads for optimum efficiency, manipulate arc and electrode to achieve a welded joint that is comparable in strength and appearance to a flat weld.
- h. Identify oxy-acetylene welding equipment. - Given oxy-acetylene welding equipment, identify and list the function of each item as prescribed in the reference material.
- i. Set-up and adjust oxy-acetylene welding apparatus. Given oxy-acetylene tanks, hoses, gages, torches, goggles, and friction lighter, properly set-up, light and safely adjust the flame to a neutral position, properly prevent flashback and back-fire, safely shut off the torch and deactivate for storage.

Subject: Routine Pipeline Maintenance and Patrol

Text: Instruction Manuals

Assignment Period: 0 - 30 Months (250 hours)

Instructions:

The purpose of this on-the-job training is to acquaint the apprentice with routine pipeline maintenance and patrol. He should become thoroughly familiar with the correct nomenclature of each piece of equipment and the part it plays in the transmission of gas along with the correct procedure for its maintenance. On-the-job training should coincide with related academic training whenever possible.

Key points and equipment to be discussed are:

a) Patrol

1. General condition of the main right-of-way
2. Evidence of sunken trenches
3. Water erosion and land slide areas
4. Land leveling or grading activity
5. Irrigation or drainage canal construction
6. Installation piping systems, sewers, etc.
7. Prospecting and/or mining on/or near right-of-way
8. Quarry and blasting work
9. Seismic geological survey activities
10. Well drilling activity
11. Building activity which may affect right-of-way
12. Leaks in main
13. Damage to communication circuits
14. Damage to valves, meters, and pressure limit station properties

b) Routine Pipeline Maintenance

1. Line markers
2. Maintenance of right-of-way and roads
3. Valves
4. Meter Stations
5. Pressure Limiting Stations
6. Patrol gates

Subject: Plant Work

Texts: Instruction Books and Drawings

Assignment Period: 0 - 30 Months (250 hours)

Instructions:

The purpose of this on-the-job training is to acquaint the apprentice with the operation and maintenance of mechanical equipment which he will be called upon to maintain. He should become thoroughly familiar with the correct nomenclature of each piece of equipment and the part it plays in the transmission of gas along with the correct procedure for its maintenance. On-the-job training should coincide with related academic training whenever possible.

Key points and equipment to be discussed are:

- a) Cooling towers and related equipment
  - Circulating water system
  - Circulating water pumps
  - Water spray nozzles
  - Cooling coils
  - Piping
  - Valves
  - Fans
- b) Chemical feed system
  - Acid storage
  - Acid pumps and related piping
- c) Dry coolers
  - Coils
  - Fans
  - Water circulating system and piping
  - Jacket water pumps
  - Automatic bypass valves
  - Surge tanks and hotwell
- d) Water well pumps
- e) Water storage tanks and piping
  - Cooling water pumps
  - Domestic water pump and system
  - Fire system piping
  - Fire pumps

## RELATED ACADEMIC TRAINING SCHEDULE

SUBJECTS/MONTH	0-6	7-12	13-18	19-24	25-30
1. Operating Procedures & Practice	30				
2. Blueprint Reading	30				
3. Internal Combustion Engines	8				
4. Combustion Gas Turbines	8				
5. Pipeline Patrol Instructions	2				
6. Rigging	20	20			
7. Mathematics	25	25	40		
8. Records, Drawings & Instruction Books	40	40	40	40	40
9. Reading a Micrometer		4			
10. Gas Detector-Electronic Pipe Locator		4			
1. Incidental Welding		4			
2. Pipe Cleaning & Wrapping		2			
3. Mechanical Drawing		20	30		
4. Machine Shop Theory & Practice		15	15	15	15
5. Basic Hydraulics			30	50	
6. Couplings, Gear Trains, V-Belt Drives				8	
7. Carpentry Fundamentals					20
8. Concrete Technology					24
				123	109

ON-THE-JOB TRAINING SCHEDULE

OPERATIONS/MONTH	0-6	7-12	13-18	19-24	25-30
1. Operating Rules & Procedures	8				
2. Portable Power Tools	5	5			
3. Rigging	25	25			
4. Shop Tool Repair	20	30			
5. Gasoline Engine Driven Equipment	4	8			
6. Equipment Operation	6	6			
7. Drill Press		20			
8. Grinding & Chipping		10	10		
9. Use of Test Equipment		16	100	100	
0. Lathe Operation			30	25	25
1. Hydraulics			5	35	40
2. Use of Hand Tools	10	5	5	5	
3. Plant Work	50	50	50	50	50
4. Engine, Compressor & Related Equipment	250	250	250	250	250
5. Construction Equipment	100	100	200	300	300
6. Motor Vehicle Operation	16	60	60	32	32
7. Pipeline Patrol & Maintenance	50	50	50	50	50
8. Incidental Welding		8	16	16	