



# LETTER AGREEMENT NO. 03-10-PGE



PACIFIC GAS AND ELECTRIC COMPANY  
INDUSTRIAL RELATIONS DEPARTMENT  
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INTERNATIONAL BROTHERHOOD OF  
ELECTRICAL WORKERS, AFL-CIO  
LOCAL UNION 1245, I.B.E.W.  
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WALNUT CREEK, CALIFORNIA 94596  
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STEPHEN A. RAYBURN,  
DIRECTOR AND CHIEF NEGOTIATOR

PERRY ZIMMERMAN,  
BUSINESS MANAGER

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April 14, 2003

Local Union No. 1245  
International Brotherhood of  
Electrical Workers, AFL-CIO  
P.O. Box 4790  
Walnut Creek, CA 94598

Attention: Mr. Perry Zimmerman, Business Manager

Dear Mr. Zimmerman:

The Company proposes to adopt the Rubber Glove and Bare Hand Overview Committee recommendations to modify the attached work procedures pursuant to the provision of Letter Agreement 90-34:

1. Section 1, Rubber Glove Work Procedures (600 to 5,000 volts)
2. Section 2, Rubber Glove Work Procedures (5,000 to 21,000 volts)
3. Section 3, Live Line Work Procedures (5,000 to 35,000 volts)

The procedural changes to each section are as follows:

All the sections were re-formatted to be consistent with other manuals in use by OM&C and changes are in numerical order.

**OM&C Manual  
Section 1  
Rubber Glove Work Procedures (600 to 5,000 Volts)  
Using Principles of Insulate Within the Contact Area**

The voltage range was changed to 600 to 5,000 volts. The previous voltage range 300 to 5,000 volts was not consistent with Title 8; Subsection 2941 (f), Working on Conductors or Equipment Energized at 600 volts or More.

- 1.1.1 Voltage range changed to 600 to 5,000 volts.
- 1.1.2 Contact area was changed to 28 inches. Previously, the contact area for this voltage range was identified in the Code of Safe Practices (CSP) Rule 411, as 24 inches. The 2002 CSP revision of Rule 411 eliminated the contact area reference. The change to a 28 inch contact area provides for a consistent contact area measurement for all rubber glove voltages above 600 volts.

- 1.1.2 **Note:** This is a new work procedure for live line workers who are working with 4kV. It provides for qualified workers to exit the contact area and re-enter a "work area" using leather gloves for other work such as framing, but no contact with rubber protective equipment. This rule is the same as contained in the 5,000 to 21,000 volt rubber glove procedures.
- 1.1.3 Defines rubber gloves as Class 2 for this voltage range.
- 1.2.1 Changed the requirement to have 30 inch insulated handled cutters in the work area as an emergency response tool to a cutting tool used to perform the work that is not limited to 30 inch insulated handled cutters.
- 1.2.1 This is a new addition to testing of rubber protective equipment. ASTM allows for the issuing of tested rubber goods stored at the Emeryville Test Facility, for up to 12 months before requiring the rubber goods to be re-tested. This new addition to company testing policy will allow Emeryville to reduce the lead-time for rubber goods requested. For rubber protective equipment, including rubber gloves (Class 2 & 0), line crews must check the issue date for compliance with the six-month replacement requirement.
- 1.2.2 This new addition reflects the change to the testing voltage for rubber goods excluding by-pass jumpers. All rubber protective equipment will be tested at the Class 2 rating of 20kV for three minutes and the equipment stamped accordingly.
- 1.6 Added to this rule is the requirement that the ground person on a rubber glove crew have a minimum of six months experience in line construction. Also changed the bulleted item "Radio Procedures" to "Communication Procedures" (emergency response).

**OM&C Manual**  
**Section 2**  
**Rubber Glove Procedures (5,000 to 21,000 Volts)**

**2.2 General**

- 2.2.4 Added the requirement of a minimum of six months experience in line construction in order to be a qualified rubber glove ground person. Changed bulleted item "Radio Procedures" to "Communication Procedures" (emergency response).
- 2.3.3 **Note:** Changed the language to better clarify the requirements for exiting and entering the "contact area" and re-entering using leather gloves. The intent of this note is for the qualified workers to make a defined action before changing work methods.
- 2.3.9 Exception note: By-pass jumpers may be used on circuits of 25 to 70kV, but when used, these jumpers are not to be considered as protection against accidental contact and must be treated as un-insulated. Consideration should be given to having the by-pass jumpers retested if used as in this exception.  
**(Removed this exception note, does not apply to rubber glove voltages and procedures).**
- 2.4.6 This is a new addition to testing of rubber protective equipment. ASTM allows for issuing of tested rubber goods stored at the Emeryville Test Facility, for up to 12 months before requiring the rubber goods to be re-tested. This new addition to company testing policy will allow Emeryville to reduce the lead-time for rubber goods requested. For rubber protective equipment, including rubber gloves (Class 2 and 0), line crews must check the issue date for compliance with the replacement requirements.

- 2.4.7 This new addition reflects the change to the testing voltage for rubber goods excluding by-pass jumpers. All rubber protective equipment will be tested at the Class 2 rating of 20kV for three minutes and the equipment stamped accordingly.
- 2.5.7 This rule clarifies the requirement that employees shall not allow conductive objects to hang outside of the bucket and gives examples. This rule does now allow material/tool bags to be outside of the bucket if they are clean, dry and in good repair, but it still requires that no conductive material be allowed to extend above the lip of the material/tool bag.
- 2.5.12 This is a new rule added to the rubber glove work methods. Aerial lifts used for rubber gloving voltages shall have the insulated boom section cleaned and waxed on a defined schedule not to exceed 90 days. Accompanying this new rule is Table 2-2, listing the approved cleaning and waxing materials.
- 2.8.14 This rule additionally outlines that the aerial lift will be out of compliance if the dielectric test has **not** been performed by the end of the month following the month of the scheduled date of test. This rule allows for unforeseen variables, such as weather preventing the testing of aerial lift equipment thereby making the vehicle unusable in rubber glove work procedures. With this language, the dielectric test group will be able to re-schedule and return within a specific time frame, in order to certify the vehicles in that facility. Figure 2-1, Dielectric test tag was changed to include and indicate the static or scheduled test date, the actual date tested, the next scheduled test date and the out of compliance date.
- 2.8.20 Changed the requirement to have 30 inch insulated handled cutters in the work area as an emergency response tool to a cutting tool used to perform the work that is not limited to the 30 inch insulated handle cutters.
- 2.9.4.1 Change as in 2.2.4. "Radio Procedures" changed to "Communication Procedures" (emergency response).
- 2.9.3.1. Defined "crew trucks" for clarification as Aerial Lifts and Digger Derricks.
- 2.9.5.3. Revised Journeyman Certification language:
- An incumbent journeyman who volunteers to perform rubber glove work will be trained according to their Company seniority. **(Omitted the words "according to their Company seniority")**
  - While initial training is in progress for incumbent journeymen, an apprentice, upon reaching journeyman status, will be placed on the training list and trained according to their Company seniority. **(This bullet point has been omitted)**
  - When placed on the list, the employee will receive a 3% increase in their weekly wage rate. An additional 3% will be paid when the employees begins training. **(This bullet point has been omitted)**
  - Apprentice lineman shall have reached the fourth step of their apprenticeship before being eligible to attend Rubber Glove School. **(The term Rubber Glove School was changed to "Rubber Glove Fundamentals course")**

**OM&C Manual  
Section 3  
Live Line Work Procedures (5,000 to 35,000 Volts)  
Using Live Line Tools**

The section was re-formatted to be consistent with other manuals in use by OM&C.

- 3.2.1 This is a new addition to testing of rubber protective equipment. ASTM allows for the issuing of tested rubber goods stored at the Emeryville Test Facility, for up to 12 months before requiring the rubber goods to be re-tested. This new addition to company testing policy will allow Emeryville to reduce the lead-time for rubber goods requested. For rubber protective equipment, including rubber gloves (Class 2 & 0), line crews must check the issue date for compliance with the six-month replacement requirement.
- 3.2.2 This new addition reflects the change to the testing voltage for rubber goods excluding by-pass jumpers. All rubber protective equipment will be tested at the Class 2 rating of 20kV for three minutes and the equipment stamped accordingly.
- 3.5.1 Added the requirement of a minimum of six months experience in line construction in order to be a qualified ground person. Also changed the bulleted item "Radio Procedures" to "Communication Procedures" (emergency response).

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


Very truly yours,


PACIFIC GAS & ELECTRIC COMPANY

By:   
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Stephen A. Rayburn  
Director and Chief Negotiator

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

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

  
\_\_\_\_\_, 2003

By:   
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Perry Zimmerman  
Business Manager

**Section 1**  
**Rubber Glove Work Procedures (600 to 5,000 Volts)**  
**Using the Principle of Insulate Within the Contact Area**

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All employees engaged in rubber glove procedures involving voltages from 600 to 5,000 volts shall adhere to the following rules and procedures.

**1.1. Safety Rules**

- 1.1.1. The term “energized lines,” as used in this section, means a conductor or apparatus energized from 600 to 5,000 volts, nominal phase-to-phase using the principles of insulate within the contact area.
- 1.1.2. “Contact area” as used in this section is defined as any area where any part of the body or any conducting object can be brought closer than 28 inches to any energized lines regardless of the use of rubber protective equipment.
- Note:** Employees using rubber glove procedures shall leave the contact area before removing their rubber gloves and reentering the work area in leather gloves. Intentional contact shall not be made with rubber protective equipment. Before returning to rubber glove procedures, the reverse shall be observed. Exit the work area to the Minimum Working Distance before redonning rubber gloves and reentering the “contact area.”
- 1.1.3. Class 2 rubber gloves are the only approved gloves for voltages from 600 to 5,000 volts.
- 1.1.4. Before starting work, conduct a tailboard briefing to establish the exact procedures to be used and the sequence of work steps.
- 1.1.4.1. The tailboard briefing between the person in charge and the crew shall include an explanation of *why* the work is to be done and *what* is to be accomplished, and a discussion of *how* the work is to be carried out and *who* will do it. The briefing should study the factors that may affect the safety and progress of the work, such as the following items:
- Conductor weight
  - Condition of the pole, crossarm, and pins
  - Guying requirements

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- “Second points of contact”

Identifying and guarding against the “second point of contact” is a major safety factor in planning the work. No electrical accident is possible without a second point of contact. The severity of an electrical accident is directly related to the conductivity of the path to ground or to another phase.

- 1.1.4.2. If additional employees arrive at the site to assist in the work, or if a major change in the work practice is necessary after the work begins, an additional briefing(s) shall take place to clearly establish the procedures to be used.
- 1.1.4.3. If the crew is to use live-line tools in conjunction with rubber glove techniques, the tailboard briefing shall clearly establish how the work will be conducted so that safety at the worksite will not be compromised.
- 1.1.4.4. During the tailboard briefing, a “nontest” shall be considered before performing rubber glove work.
- 1.1.5. Take a current reading before opening or cutting any conductor.
- 1.1.6. Use only approved devices for picking up or dropping a load.
- 1.1.7. Cover all secondary conductors with the proper rubber protective equipment.
- 1.1.8. Maintain the minimum working distance while working in the proximity of *exposed* energized conductors (see the *Code of Safe Practices* [CSP] Rule 405, “Minimum Working Distances”).
- 1.1.9. Before moving any conductors, always check the condition of pins, ties, and insulators on adjacent structures. Look for the following conditions:
  - Loose ties
  - Rotten pins
  - Split arms
  - Other indications of unsound mechanical condition
- 1.1.10. Employees shall not move energized conductors unless the energized conductors are properly controlled.

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- 1.1.11. Employees shall consider the weather conditions for the day. If inclement weather develops after the crew has begun work and they must complete the job, the crew may use the live-line method or it may de-energize the circuit. The person in charge and the crew shall determine if inclement weather is occurring or is imminent.
  - 1.1.12. Approved cutters with 30-inch insulated handles (per American Society for Testing and Materials [ASTM] F-711), capable of cutting the conductor being worked, shall be in the work area as an emergency response tool.

**1.2. Rubber Protective Equipment**

- 1.2.1. All approved rubber protective equipment shall have the appropriate American Society for Testing and Materials (ASTM) markings and a valid test date and issue date. The issue date shall be observed for compliance with annual/biannual test requirements. Tested rubber protective equipment not issued shall not exceed 12 months on the shelf before being re-tested.
- 1.2.2. Rubber gloves and sleeves shall be rated Class 2. All other rubber protective equipment shall be rated Class 2 or higher. All rubber protective equipment rated Class 2, 3, or 4 shall be tested at the Class 2 rating (20 kV) and shall be stamped "TESTED CLASS 2."
- 1.2.3. Employees shall submit rubber protective equipment for tests as required, or any time the equipment becomes suspect.

**Table 1-1 Testing Intervals**

Item	Time Interval
Gloves	6 months
Sleeves	12 months
Blankets	12 months
Line Hose	12 months
Insulator Hoods	12 months
Hot Jumpers	12 months

- 1.2.4. Visually inspect all rubber protective equipment before using.
  - 1.2.5. Visually inspect rubber gloves and give them the roll air and air/water tests before each work period.
  - 1.2.6. Never wear rubber gloves and sleeves inside out.
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- 1.2.7. Never wear rubber gloves without approved protectors. Rubber sleeves are not required, but may be used at the option of the employee.

### **1.3. Applying Rubber Protective Equipment**

- 1.3.1. When applying rubber protective equipment, an employee shall always cover the nearest and lowest conductors first. In removing rubber protective equipment, employees shall follow the reverse order. Employees shall apply protective equipment from a position below the conductor whenever possible.
- 1.3.2. Cover brackets and all associated hardware in the immediate work area with approved protective equipment to prevent employees and energized lines from contacting grounded surfaces.
- 1.3.3. When working on or near energized lines, cover with rubber protective equipment all energized conductors, grounded conductors, or guy wires, in the work area that are within reach of any part of the body or aerial device, except the portion of the conductor or apparatus where the employee is working.
- 1.3.4. Employees shall not make intentional contact with energized lines or rubber protective equipment with any part of the body except with rubber gloves.
- 1.3.5. When an energized line hose or insulated jumper is laid on or can come in contact with a crossarm, pole, or structure, a guard or rubber protective equipment must be placed between the two items.

### **1.4. Vehicles Requirements**

- 1.4.1. Employees shall properly barricade vehicles that have their booms in the elevated position near energized lines.
- 1.4.2. Aerial devices/digger derricks used for performing rubber glove work involving voltages above 600 volts shall have both upper and lower controls. A minimum distance of 3 feet of the insulated boom must be extended on digger derrick trucks to meet the dielectric capabilities required for rubber glove work. The insulated portion of the boom shall be marked, and shall not be retracted to a position that would allow metal parts at the boom tip to come within 3 feet of metal parts of the lower boom while working on energized lines.



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**Note:** Grabbers shall be attached to the second stage of the boom.

- 1.4.3. Immediately prior to using aerial devices for high voltage, rubber glove work, employees shall visually inspect and wipe clean all insulated portions. Employees shall remove anything that will adversely effect the insulation of the device, including insulator washing hoses, rope, or cable.
- 1.4.4. While working from an approved aerial device, the operator shall notify the other employee prior to moving the device.
- 1.4.5. At no time shall employees allow the insulated boom or bucket to contact unprotected conductive or grounded objects when an employee is performing rubber glove work on energized lines.

## **1.5. Live-Line Tools**

- 1.5.1. Employees shall use only approved live-line tools to operate all fused cutouts or disconnects unless the cutouts/disconnects have been electrically bypassed.
- 1.5.2. Fiber strap hoists are approved for use on distribution voltages from 301 to 21,000 volts. Install an approved, insulating link stick between the hoist and any other surface with a different potential.

## **1.6. Ground Person Requirements**

The ground person for a rubber glove crew shall have a minimum of 6-months experience in line construction. The ground person shall also be a regular employee trained in the following:

- First aid
- Cardiopulmonary resuscitation (CPR)
- Communication procedures (emergency response)
- Aerial lift operation
  - Upper controls
  - Lower controls
  - Aerial rescue procedures

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## Section 2 Rubber Glove Work Procedures (5,000 to 21,000 Volts)

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### ***Code of Safe Practices (formerly Accident Prevention Rules), Section 6, "Live Line Work Methods, Rubber Gloving Overhead Distribution"***

#### **Rule 601. Scope**

Rubber glove work methods shall be used only by employees that have successfully completed the Company's Rubber Glove training.

#### **Rule 602. General**

- (a) Employees engaged in rubber glove work involving voltages from 5,000 to 21,000 volts, nominal, phase-to-phase shall follow the procedures and comply with the requirements contained in the most recent edition of the *Electric Distribution Operation, Maintenance and Construction Manual*.
- (b) All rubber glove work on voltages at 5,000 to 21,000 volts, nominal phase-to-phase, requires a minimum of two certified rubber glove persons with a trained ground person.

#### **Rule 601. Scope**

Rubber glove work methods shall be used only by employees that have successfully completed the Company's Rubber Glove training.

#### **Rule 602. General**

- (a) Employees engaged in rubber glove work involving voltages from 5,000 to 21,000 volts, nominal, phase-to-phase shall follow the procedures and comply with the requirements contained in the most recent edition of the *Electric Distribution Operation, Maintenance and Construction Manual*.
- (b) All rubber glove work on voltages at 5,000 to 21,000 volts, nominal phase-to-phase, requires a minimum of two certified rubber glove persons with a trained ground person.

#### **2.1. Application**

- 2.1.1. These rules shall apply to all crews engaged in rubber glove work involving voltages from 5,000 to 21,000 volts, nominal phase-to-phase. This section shall not supersede accepted, safe work rules.

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2.1.2. Rubber glove work involving voltages above 5,000 volts shall be performed using the principles of “*insulate* and *isolate*.”

2.1.2.1. The worker is “insulated” by using approved rubber gloves.

2.1.2.2. The worker is “isolated” by using an approved insulating aerial device with bucket liners, or an insulated work platform that also serves as an additional layer of insulation.

**Note:** Each platform shall have a minimum insulating distance of at least 12 inches from the structure attachment to the kickboard or other suitable barrier. Any brace poles or attachments bridging the insulating section of the platform shall have a minimum of 12 inches of insulating distance.

## 2.2. General

2.2.1. For the purpose of these rules, “certified” rubber glove employees are those who have successfully completed appropriate Company training.

2.2.2. The term “energized line,” as used in this section, is defined as a conductor or apparatus energized at voltages from 5,000 to 21,000 volts, nominal phase-to-phase.

2.2.3. All rubber glove work involving voltages from 5,000 to 21,000 volts, nominal phase-to-phase, requires a minimum of two certified rubber glove persons with a trained ground person.

2.2.4. The ground person in a rubber glove crew shall have a minimum of 6-months experience in line construction. The ground person shall also be a regular employee trained in the following:

- First aid
- Cardiopulmonary resuscitation (CPR)
- Communication procedures (emergency response)
- Aerial lift operation
  - Upper controls
  - Lower controls
  - Aerial rescue procedures

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- 2.2.5. During the time an employee is working on energized lines above 5,000 volts, nominal phase-to-phase, another employee in close proximity shall act primarily as an observer to prevent accidents.
  - 2.2.6. Employees shall confine their work to one phase and shall not make simultaneous contact with any part of a structure or any other phase.
  - 2.2.7. Certified rubber glove journeymen at the jobsite, by consensus opinion, shall exclusively determine whether to perform the work with live-line tools or use rubber glove procedures.
  - 2.2.8. The person in charge of the crew at the jobsite can overrule a consensus opinion of the certified rubber glove journeymen who have elected to use the rubber glove work procedure.
  - 2.2.9. Employees shall consider the weather conditions for the day. If inclement weather develops after the crew has begun work and it must complete the job, the crew may use the live-line method or it may de-energize the circuit. The person in charge and the crew shall determine if inclement weather is occurring or is imminent.
  - 2.2.10. During the tailboard briefing, a “nontest” shall be considered before performing rubber glove work involving voltages above 5,000 volts.
  - 2.2.11. Always provide illumination, as needed, to perform the work safely.
  - 2.2.12. Employees shall attach hand-lines to the pole or aerial device and shall not support them from the lip of the bucket or from energized lines. Hand-lines shall be clean, dry, and in good repair.
  - 2.2.13. All rope making direct contact with energized lines in excess of 5,000 volts shall be approved live-line rope.
  - 2.2.14. At no time shall employees perform any other work on a pole while rubber glove work on energized lines is in progress.
  - 2.2.15. At no time shall employees perform any rubber glove work involving voltages above 5,000 volts directly from a pole or structure.
  - 2.2.16. Only approved devices shall be used for picking up or dropping loads.

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## 2.3. Use of Rubber Protective Equipment

- 2.3.1. The term “rubber,” as used in these rules, includes all protective cover-up equipment, including gloves fabricated from natural or synthetic rubber and various types of plastic, rated for the voltage to be worked.
- 2.3.2. “Contact area,” as used in this section, is defined as any area where any part of the body or any conducting object can be brought closer than 28 inches to any energized lines, regardless of the use of rubber protective equipment.
- 2.3.3. Employees shall put on lineman’s Class 2 rubber gloves before entering the contact area and shall not remove them until they are completely out of this area.
- Note:** Employees using rubber glove procedures shall leave the contact area before removing their rubber gloves and reentering the work area in leather gloves. Intentional contact shall not be made with rubber protective equipment. Before returning to rubber glove procedures the reverse shall be observed. Exit the work area to the Minimum Working Distance before redonning rubber gloves and reentering the “contact area.”
- 2.3.4. Employees in the contact area shall not touch or work on any exposed energized lines except when wearing lineman’s rubber gloves and working from either an approved insulated aerial device or an insulated platform.
- 2.3.5. Rubber sleeves are not required, but may be used at the option of the employee.
- 2.3.6. Employees shall cover with rubber protective equipment all of the following items that they can reach with any parts of their bodies when they are working in the contact area of energized unprotected conductors or equipment:
- Energized, unprotected conductors or equipment
  - Grounded conductors or equipment
  - Guy wires
  - Alley arm braces
  - Telephone cables
  - Messengers

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- Other grounded objects

This requirement shall also include poles, crossarms, braces, and all associated hardware in the contact area on voltages from 5,000 to 21,000 volts.

- 2.3.7. When applying rubber protective equipment, an employee shall always cover the nearest and lowest conductors first. In removing rubber protective equipment, employees shall follow the reverse order. Employees shall apply protective equipment from a position below the conductor whenever possible.
- 2.3.8. Employees shall not make intentional contact with energized lines or rubber protective equipment with any part of the body except with rubber gloves.
- 2.3.9. Employees shall use rubber protective equipment within its design application and voltage rating.

#### **2.4. Care of Rubber Protective Equipment**

- 2.4.1. Employees shall never wear rubber gloves inside out or without approved protectors. Exchange the rubber gloves whenever they become damaged or suspect.
- 2.4.2. Employees shall wear approved protectors only in conjunction with rubber gloves.
- 2.4.3. Employees shall inspect rubber gloves for corona cracks and bruises. They shall perform the roll air and air/water tests (see data section of the *Code of Safe Practices*) at least once each day when using rubber gloves, at the beginning of the work period, and at any other time when their condition is in doubt.
- 2.4.4. When employees are not using rubber protective equipment, they shall protect such equipment from mechanical and chemical damage, and shall always store the equipment in the containers provided. Do not place anything else in the rubber protective equipment container. Employees shall not lay protective equipment on the ground or other contaminated surfaces unless a tarp or other such device is used.
- 2.4.5. Do not leave rubber goods on energized lines for extended periods of time (i.e., overnight). If this occurs, employees shall not depend on such equipment for protection. Employees shall remove, clean, and visually inspect the equipment before reusing it. If the rubber

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goods are suspect, employees shall submit them for an electrical test.

- 2.4.6. All approved rubber protective equipment shall have the appropriate American Society for Testing and Materials (ASTM) markings and a valid test date and issue date. The issue date shall be observed for compliance with annual/biannual test requirements. Tested rubber protective equipment not issued shall not exceed 12 months on the shelf before being re-tested.
- 2.4.7. Rubber gloves and sleeves shall be rated Class 2. All other rubber protective equipment shall be rated Class 2 or higher. All rubber protective equipment rated Class 2, 3, or 4 shall be tested at the Class 2 rating (20kV) and shall be stamped "TESTED CLASS 2."
- 2.4.8. Employees shall submit rubber protective equipment for tests as required, or any time the equipment becomes suspect.

**Table 2-1 Testing Intervals**

<b>Item</b>	<b>Time Interval</b>
Gloves	6 months
Sleeves	12 months
Blankets	12 months
Line Hose	12 months
Insulator Hoods	12 months
Hot Jumpers	12 months
Aerial Devices	12 months
Digger Derrick Booms	6 months
Bucket Liners	12 months

## **2.5. Use and Care of Approved Insulated Aerial Lift**

- 2.5.1. Employees shall use no aerial device for rubber glove procedures involving voltages above 5,000 volts unless the device has a current dielectric certification sticker/label affixed to the vehicle near the lower boom controls.
- 2.5.2. Aerial devices used for rubber glove work involving voltages above 5,000 volts shall have both upper and lower controls.
- 2.5.3. Bucket liners shall have a current dielectric certification sticker/label affixed to the outer surface.



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- 2.5.4. Aerial devices used for rubber glove procedures involving voltages above 5,000 volts require an approved bucket liner and pan.
  - 2.5.5. At no time shall employees allow the insulated boom or bucket on aerial devices to contact unprotected conductive or grounded objects when an employee in the aerial device is performing rubber glove work on energized lines.
  - 2.5.6. Employees shall take extreme care when handling conductive objects near energized lines. Employees shall not allow conductive objects that are carried inside the bucket of an aerial device to extend above the lip.
  - 2.5.7. Employees shall not allow conductive objects to hang on the outside of the bucket, e.g., hoists, hand coils of wire, etc. Material/tool bags and buckets are allowed if they are clean, dry, and in good repair. Employees shall not allow conductive objects to extend above the lip of the material/tool bag or bucket.
  - 2.5.8. Immediately before using aerial devices for high-voltage rubber glove work, employees shall visually inspect and wipe clean all insulated portions. Employees shall remove anything that will adversely effect the insulation of the device, including insulator washing hoses, rope, and cable.
  - 2.5.9. Whenever employees perform any work on an aerial device that could affect its insulating qualities, they shall electrically test the device before returning it to service.
  - 2.5.10. Employees shall not operate the lower controls of an aerial device without the permission of the employees in the bucket.
    - EXCEPTION:**  
The only exception to this rule is in an emergency situation.
  - 2.5.11. When employees are not using buckets with liners, they shall cover them to keep the inside clean, and free of moisture and debris.
  - 2.5.12. Insulated aerial lifts used for rubber gloving voltages 5,000 to 21,000 volts shall have the insulated fiberglass sections cleaned and waxed quarterly (not to exceed 90 days). Only approved cleaning and waxing materials shall be used on certified aerial lifts. See Table 2-2 for approved materials.
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**Table 2-2 Approved Cleaning and Waxing Materials**

<b>Item</b>	<b>Code</b>
Formula 5 Cleaning and Waxing Compound	490000
Scotchbrite #96 Scouring Pad	171249
PF Degreaser	490128
Boom Wax (can)	209320
Solvex Glove, Size 9	206712
Solvex Glove, Size 10	206713
Solvex Glove, Size 11	206714

## **2.6. Use and Care of Tools**

- 2.6.1. Hydraulic hoses shall be nonconductive and orange in color. Employees shall wipe them clean and visually inspect them before use.
- 2.6.2. Hydraulic tool hoses used for work on energized lines shall be submitted for a dielectric test or replaced any time they become suspect.
- 2.6.3. Only allow hydraulic tools that are connected to the boom-tip tool circuit to make contact with energized lines. This does not preclude the use of self-contained hydraulic and electric hand tools. Employees shall avoid body contact with hoses.
- 2.6.4. Employees shall remove electric tools and power cords from the bucket when working on energized lines.
- 2.6.5. When using fiber strap hoists, employees shall install an approved insulated link stick between the hoist and any other surface with a different potential. Employees shall keep fiber strap hoists clean, dry, and in good repair.
- 2.6.6. When using the winch line of material handling aerial devices on energized lines, employees shall use an approved link stick.

## **2.7. Combination Rubber Glove/Live Line Tool Methods**

- 2.7.1. When employees are using both live line tools and rubber glove procedures, they shall observe the contact area. Employees shall limit the use of live line tools in conjunction with rubber glove procedures to situations where the safety margins are not decreased by the introduction of live line tools into the rubber glove environment.

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**Note:** The following are minimum combinations allowed when aloft:

- Two certified employees in an aerial device or on insulated platforms.
- One certified employee in an aerial device and one certified employee on an insulated platform.
- One certified employee in an aerial device using rubber gloves and one certified employee on the pole using live line tools. Each employee shall follow the work rules for the work method used.

**Note:** The following combination *is not* allowed:

- One certified employee on the pole using live line tools and one certified employee on an insulated platform using rubber gloves.

- 2.7.2. At no time shall employees perform rubber glove work involving voltages above 5,000 volts except from an aerial device or insulated platform.

## 2.8. Procedures

- 2.8.1. Before starting work, conduct a tailboard briefing to establish the exact procedures to be used and the sequence of work steps.

- 2.8.1.1. The tailboard briefing between the person in charge and the crew shall include an explanation of *why* the work is to be done and *what* is to be accomplished, and a discussion of *how* the work is to be carried out and *who* will do it. The briefing should study the factors that may affect the safety and progress of the work, such as the following items:

- Conductor weight
- Condition of the pole, crossarm, and pins
- Guying requirements
- “Second points of contact”

Identifying and guarding against the “second point of contact” is a major safety factor in planning the work. No electrical accident is possible without a second point of contact. The severity of an electrical accident is directly related to the conductivity of the path to ground or to another phase.

- 2.8.1.2. If additional employees arrive at the site to assist in the work, or if a major change in the work practice is

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- necessary after the work begins, an additional briefing(s) shall take place to clearly establish the procedures to be used.
- 2.8.1.3. If the crew is to use live line tools in conjunction with rubber glove techniques, the tailboard briefing shall clearly establish how the work will be conducted so that safety at the worksite will not be compromised.
  - 2.8.1.4. During the tailboard briefing, a “nontest” shall be considered before performing rubber glove work.
- 2.8.2. Employees shall visually inspect all rubber protective equipment before use.
  - 2.8.3. Rubber sleeves are not required when working from an insulated aerial device or an insulated work platform. They will be issued and may be used at the option of the employee.
  - 2.8.4. Employees shall use protective equipment installed on energized lines in excess of 5,000 volts only when working from an approved aerial device or insulated work platform.
  - 2.8.5. Cover poles, brackets, crossarms, and all associated hardware in the immediate work area with approved protective equipment to prevent employees from contacting grounded surfaces.
  - 2.8.6. When employees perform work on or near energized lines, all energized conductors, grounded conductors, or guy wires in the work area within reach of any part of the body, or aerial device shall be covered with rubber protective equipment, except that portion of the conductor or apparatus on which an employee is to work.
  - 2.8.7. Employees shall not move energized conductors without controlling them properly.
  - 2.8.8. Employees shall properly barricade vehicles that have their booms in the elevated position near energized lines.
  - 2.8.9. Aerial devices/digger derricks used for performing rubber glove work involving voltages above 5,000 volts shall have both upper and lower controls. A minimum distance of 3 feet of the insulated boom must be extended on digger derrick trucks to meet the dielectric capabilities required for rubber glove work. The insulated portion of the boom shall be marked, and shall not be
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retracted to a position that would allow metal parts at the boom tip to come within 3 feet of metal parts of the lower boom while working on energized lines.

**Note:** Grabbers shall be attached to the second stage of the boom.


- 2.8.10. Immediately prior to using aerial devices for high voltage rubber glove work, employees shall visually inspect and wipe clean all insulated portions. Employees shall remove anything that will adversely effect the insulation of the device, including insulator washing hoses, rope, or cable.
- 2.8.11. While working from a bucket of an aerial device or digger derrick, all employees shall guard against the static and induced electrical charges that may be present on metal parts at the boom tip.
- 2.8.12. While working from an approved aerial device, the operator shall notify the other employee prior to moving the device.
- 2.8.13. Employees shall not use an approved insulating aerial device for rubber glove procedures involving voltages above 5,000 volts unless it has passed a dielectric test, and a sticker/label is affixed to the vehicle near the lower boom controls indicating compliance (see Figure 2-1 on page 2-12).
- 2.8.14. Insulated booms of aerial devices shall pass a periodic dielectric test as indicated by a sticker/label affixed to the vehicle near the lower boom controls. The sticker/label shall indicate the date the vehicle is scheduled to be tested, actual date tested, next scheduled test date and out-of-compliance date.

A vehicle is out of compliance if it has *not* been tested by the end of the month following the month of the scheduled test date.

The scheduled test date will occur on the same date each year, except weekends and holidays. The scheduled test date for digger/derricks will be every 6 months.

- 2.8.14.1. Insulating devices shall have a periodic dielectric test performed in accordance with paragraph 5.4.3.2 (5)(a)(b) and 5.4.3.4 (5)(b) of American National Standards Institute (ANSI) Standard A92.2, dated 1990.
- 2.8.14.2. A minimum distance of 3 feet of the insulated boom must be extended on digger derrick trucks to meet the dielectric capabilities of the test. Employees must remove all conductive ropes or cables that bridge the insulated portion of the boom for this test.

- 2.8.15. Buckets of aerial devices/digger derricks shall have bucket liners with a liner pan installed before employees perform rubber glove work involving voltages above 5,000 volts.



ANSI A92.2  
Paragraphs:  
5.4.3.2 (5)(a)(b)  
5.4.3.4 (5)(b)  
Table 2  
Category "C"

DC Dielectric Boom Test  
56kV / 3 Minute / 56 uA Maximum

Upper Boom Leakage \_\_\_\_\_ uA

DC Chassis Insulating System Test  
50kV / 3 Minute / 50 uA Maximum

Chassis Insulating System Leakage \_\_\_\_\_ uA

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Motor Vehicle # \_\_\_\_\_

Tested By \_\_\_\_\_

Scheduled Test Date: \_\_\_\_\_

Actual Test Date: \_\_\_\_\_

Next Scheduled Test Date: \_\_\_\_\_


Out of Compliance Date: \_\_\_\_\_

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**Figure 2-1  
Dielectric Test Tag**

- 2.8.15.1. Insulated bucket liners shall have a periodic dielectric test performed every 12 months in accordance with paragraph 5.4.3.5 of ANSI Standard A92.2, dated 1990, and a sticker/label affixed to the outer surface documenting the test date (see Figure 2-2 on page 2-13).

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- 2.8.16. At no time shall employees allow the insulated boom or bucket to contact unprotected conductive or grounded objects when an employee is performing rubber glove work on energized lines.



ANSI A92.2  
Paragraph 5.4.3.5 (1)  
Dielectric Liner Test  
Without Flashover

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Test Voltage \_\_\_\_\_  
Tested By \_\_\_\_\_  
Scheduled Test Date: \_\_\_\_\_  
Actual Test Date: \_\_\_\_\_  
Next Scheduled Test Date: \_\_\_\_\_  
Out of Compliance Date: \_\_\_\_\_

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PART NO. 03-1640

**Figure 2-2  
Dielectric Liner Test Tag**

- 2.8.17. Employees shall use only approved live line tools to operate all fused cutouts or disconnects unless the tools have been electrically bypassed.
- 2.8.18. Fiber strap hoists are approved for use on distribution voltages from 301 to 21,000 volts. Install an approved insulation link stick between the hoist and any other surface having a different potential.
- 2.8.19. Employees shall use only approved devices for picking up or dropping a load.

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- 2.8.20. Approved cutters with 30-inch insulated handles (per ASTM F-711), capable of cutting the conductor being worked, shall be in the work area as an emergency response tool.
  - 2.8.21. At no time shall employees perform rubber glove work involving voltages above 5,000 volts except from an aerial device or insulated platform.
  - 2.8.22. Employees shall permit only hydraulic tools connected to the boom-tip tool circuit to make contact with energized lines. This does not preclude the use of self-contained hydraulic- or battery-operated hand tools. Employees shall avoid making body contact with the hoses.

## **2.9. Agreements**

### **2.9.1. Appropriate Equipment to Use**

The following equipment and tools are approved for performing rubber glove work involving voltages from 5,000 to 21,000 volts, in addition to using existing live line tools and work methods:

- Aerial devices with bucket liners and pans
- Digger derrick pins on buckets with bucket liners and pans
- Insulated work platforms
- Fiber strap hoists with insulated link
- Load pick-up jumpers
- Insulated hot jumpers (15 kV and above)

### **2.9.2. Appropriate Involved Construction**

The Joint Rubber Glove Committee has reviewed current overhead electric distribution construction standards in the PG&E system and has made the following recommendations:

- 2.9.2.1. All future construction should be designed to enhance the safety of the employee using the rubber glove method. Considerations include the following:
  - Increased phase separation (i.e., wood crossarm construction).
  - Insulated jumpers.
  - Nonconductive arms and brackets.
  - Increased use of nonconductive, guy strain insulators.



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- 2.9.2.2. Phase out conductive brackets (i.e., steel crossarms, steel braces).
- 2.9.2.3. All current construction that decreases the ability to isolate the employee (such as risers, booster banks, etc.), is an area of concern and should be stressed during the tailboard briefing. Other areas of concern are tree conditions and severe corrosion areas.

2.9.2.3.1. Construction to be exempted: *none*.

### **2.9.3. Live Line Tools**

- 2.9.3.1. All the following tools shall be carried on the crew trucks (Aerial Lifts & Digger Derricks):
- Eight live line tools (hot sticks) with quick-change heads
  - Two grip-all sticks
  - One 8-foot hot cutter
  - One hand-line holder
- 2.9.3.2. A local consensus of Service Center supervision and the crew foreman shall establish and maintain the complement of live line tools and equipment to be stored in each tool room. Nothing in this agreement will require a reduction in live line tools and equipment currently available.

### **2.9.4. Crew Size and Complement**

- 2.9.4.1. Rubber glove crews shall consist of three employees staffed as follows:
- Journeyman as described in paragraph E in “Letter of Agreement 90-34-PGE” between the Company and the Union.
  - Certified journeyman.
  - Apprentice lineman who is qualified in rubber glove methods.
  - Ground person who shall have a minimum of 6-months experience in line construction. The ground person shall also be a regular employee trained in the following:
    - First aid
    - Cardiopulmonary resuscitation (CPR)
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- Communication procedures (emergency response)
  - Aerial lift operation:
    - Upper controls
    - Lower controls
    - Aerial rescue procedures

### **2.9.5. Journeyman Certification**

- 2.9.5.1. Training established by the Joint Rubber Glove Committee shall certify linemen to perform rubber glove work involving voltages above 5,000 volts.
- 2.9.5.2. Certified rubber glove journeymen shall have a minimum of 1-day additional training annually.
- 2.9.5.3. Annual training will begin in the calendar year following the completion of the initial training of the incumbent journeymen. Training recommendations include the following items:
  - Incumbent journeymen who volunteer for performing rubber glove work will be trained.
  - Apprentice linemen shall have reached the fourth step of their apprenticeship before being eligible to attend the Rubber Glove Fundamentals Course, including the Field Training Module.

**Section 3**  
**Live Line Work Procedures (5,000 to 35,000 Volts)**  
**Using Live Line Tools**

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All employees engaged in live line tool procedures for voltages from 5,000 to 35,000 volts shall adhere to the following rules and procedures.

**3.1. Safety Rules**

3.1.1. The term “energized line,” as used in this section, is defined as a conductor or apparatus energized at **5,000 to 35,000** volts, nominal phase-to-phase, **using live line tools**.

3.1.2. Before beginning work, the person in charge shall hold a tailboard briefing to establish the exact procedures to be used and the sequence of work steps.

3.1.2.1. The tailboard briefing between the person in charge and the crew shall include an explanation of *why* the work is to be done, *what* is to be accomplished, a discussion of *how* the work is to be carried out, and *who* will do it. The briefing should review the factors that may affect the safety and progress of the work, such as the following items:

- Conductor weight
- Condition of the pole, crossarm, and pins
- Guying requirements
- “Second points of contact”

Identifying and guarding against the “second point of contact” is a major safety factor in planning the work. No electrical accident is possible without a second point of contact. The severity of an electrical accident is directly related to the conductivity of the path to ground or to another phase.

3.1.2.2. If additional employees arrive at the site to assist in the work, or if a major change in the work practice is necessary after the work begins, an additional briefing(s) shall take place to clearly establish the procedures to be used.

3.1.2.3. If the crew is to use live line tools in conjunction with rubber glove techniques, the tailboard briefing shall clearly

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establish how the work will be conducted so that safety at the worksite will not be compromised.

- 3.1.2.4. During the tailboard briefing, a “nontest” shall be considered prior to live line work.
- 3.1.3. Take a current reading before opening or cutting any conductor.
- 3.1.4. Use only approved devices for picking up or dropping load.
- 3.1.5. Maintain minimum approach distances from exposed energized conductors at all times (*Code of Safe Practices (CSP) Rule 405*). **If there is a possibility of employees contacting bond wires, the wires must be tested and grounded.** Refer to the *Protective Grounding Manual*.
- 3.1.6. Use Safety Line, Inc., Gin Pole Spacers (Code 205712 for the set, Code 205711 for one each) to avoid damaging the gin pole whenever the fastening chains of other equipment interfere with the installation of the gin pole. Before installing gin pole brackets with spacers, adjust the threads on the chain-and-nut assembly so that several inches of the threads extend beyond the nut to allow easy removal.
- 3.1.7. Before moving any conductors, always check the condition of pins, ties, and insulators on adjacent structures. Look for the following conditions:
- Loose ties
  - Rotten pins
  - Split arms
  - Other indications of unsound mechanical condition
- 3.1.8. Employees shall confine their work to one phase and shall not allow tools or conductors to make simultaneous contact with any part of the structure or any other phase. (The only exception to this rule is when phasing.)
- 3.1.9. Employees shall not move energized conductors without controlling them properly. Use down lines if necessary to secure conductors.

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### **3.2. Rubber Protective Equipment**

- 3.2.1. All approved rubber protective equipment shall have the appropriate American Society for Testing and Materials (ASTM) markings and a valid test date and issue date. The issue date shall be observed for compliance with annual/biannual test requirements. Tested rubber protective equipment not issued shall not exceed 12 months on the shelf before being re-tested.
- 3.2.2. All rubber protective equipment shall be rated for the voltage to be worked. All rubber protective equipment rated Class 2, 3, or 4 shall be tested at the Class 2 rating (20 kV) and shall be stamped "TESTED CLASS 2."
- 3.2.3. Protective equipment shall be submitted for tests as required or any time they become suspect.

**Table 3-1 Test Intervals**

<b>Item</b>	<b>Time Interval</b>
Blankets	12 months
Line Hose	12 months
Insulator Hoods	12 months
Hot Jumpers	12 months

- 3.2.4. All rubber protective equipment shall be visually inspected before use.

### **3.3. Applying Rubber Protective Equipment**

- 3.3.1. Cover all secondary conductors with rubber protective equipment.
- 3.3.2. For protection against accidental contact, cover hardware, crossarms, and apparatus with rubber protective equipment while working on energized conductors.
- 3.3.3. When applying rubber protective equipment, always cover the nearest and lowest conductors first. When removing rubber protective equipment, follow the reverse order. Employees shall apply protective equipment from a position below the conductor whenever possible.
- 3.3.4. Cover the brackets, crossarms, and all associated hardware in the immediate work area with approved protective equipment to prevent employees and/or energized lines from contacting grounded surfaces.

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- 3.3.5. When working on or near energized lines, cover with rubber protective equipment all energized conductors, grounded conductors, or guy wires within reach of any part of the body.

### **3.4. Tools and Equipment**

- 3.4.1. Before starting any work on energized conductors:
- Clean and wipe all live line tools with a silicone cloth.
  - Check for contamination.
  - Ensure they are in proper working order.
- 3.4.2. If a hand-line cannot be installed while maintaining the minimum working distance, use a hand-line holder.
- 3.4.3. Employees shall properly barricade vehicles that have their booms in the elevated position near energized lines.
- 3.4.4. 8-foot hot cutters shall be available at the work site.
- 3.4.5. All sectionalizing circuit breakers (i.e., line openers) shall have the hook up at the scissors end of the unit and the hook down at the insulator end.

### **3.5. Ground Person Requirements**

- 3.5.1. The ground person in a live line crew shall have a minimum of 6-months experience in line construction. The ground person shall also be a regular employee trained in the following:
- First aid
  - Cardiopulmonary resuscitation (CPR)
  - Communication procedures (emergency response)
  - Aerial lift operation
    - Upper controls
    - Lower controls
    - Aerial rescue procedures