

PACIFIC GAS AND ELECTRIC COMPANY
DISTRIBUTION & CUSTOMER SERVICES (DCS)/GENERATION, TRANSMISSION & SUPPLY (GTS)

DCS/GTS STANDARD

ISSUING DEPARTMENT: Technical Services

DCS OFFICER: VP - DE&P

GTS OFFICER: VP - G&ET

DCS STANDARD: D-S0214

GTS STANDARD: S4412

PAGE NO.: 1 OF 8

EFFECTIVE DATE: 7-97

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TITLE: Protection of Underground Infrastructures

Purpose:

This standard establishes uniform procedures for replying to requests for information concerning the location of company-owned facilities and avoiding damage to underground substructures.

This standard supports the following DCS Policies: "Gas and Electric Maintenance and Operation," "Installation of Gas and Electric Facilities," and "Reconstruction of Gas & Electric Facilities." This standard supports compliance with California Government Code, Chapter 3.1, Section 4216.

Rescission:

This standard supersedes SP 403-2, "Request for Information Concerning the Location of Company-Owned Facilities," and SP 254-5, "Avoiding Damage to Underground Property of Others."

Implementation:

The vice-president of Distribution Engineering & Planning and the vice-president of Gas & Electric Transmission, are responsible for approving, reviewing, and distributing this standard.

The DCS and GTS department and division managers, directors and supervisors are responsible for ensuring that employees are trained and comply with the requirements of this standard. In addition, they are responsible for providing sufficient resources to achieve the requirements of this standard.

Each division shall designate two individuals, one from ESC to be appointed by the ESC Union, and the other from management, to perform the role of mapping process improvement representative (MPiR).

Employees are responsible for carrying out their assigned tasks. For their own safety and that of the general public, employees are only responsible for performing the tasks for which they are trained, knowledgeable and qualified. When necessary, they shall notify their supervisor of any additional training, equipment, or resources needed to perform their assigned tasks.

Compliance Commitments:

Technical Services department will establish and monitor a measurement system that measures the success of this standard.

Definition of Terms:

Approximate location of subsurface installations: a strip of land not more than 24 inches on either side of the exterior surface of the subsurface installation. Approximate location does not mean depth.

DCS/GTS Standard

July 2, 1997

TITLE: Protection of Underground Infrastructures

Excavation: any operation in which earth, rock or other material in the ground is moved, removed, or otherwise displaced by means of tools, equipment, or explosives in any of the following ways: grading, trenching, digging, ditching, drilling, auguring, tunneling, scraping, cable or pipe plowing and driving, or any other way.

Emergency: a sudden, unexpected occurrence, involving a clear and immediate danger, demanding immediate action to prevent or mitigate loss of, or damage to, life, health, property, or essential public service. "Unexpected occurrence" includes, but is not limited to, fires, floods, earthquakes or other soil or geologic movements, riots, accidents, damage to a subsurface installation requiring immediate repair, or sabotage.

Excavator: except as provided in Section 4216.8 of Government Code 4216,¹ "excavator" means any person, firm, contractor or subcontractor, owner, operator, utility, association, corporation, partnership, business trust, public agency, or other entity which, with their, or his or her, own employees or equipment performs any excavation.

¹ Homeowners who excavate or hire contractors to excavate on their property, and when a permit is not required, are exempted.

Operator: any person, corporation, partnership, business trust, public agency, or other entity which owns, operates, or maintains a substructure installation. Refer to Section 4216.1 of Government Code 4216 for exceptions.

Subsurface Installation: any underground pipeline, conduit, duct, wire, or other structure, except nonpressurized sewer lines, nonpressurized storm drains, or other nonpressurized drain lines.

USA: refers to the regional one-call notification centers for PG&E's service territory. There are two centers serving PG&E: Underground Service Alert of Northern California and Underground Service Alert of Southern California. The telephone number for both centers is (800) 227-2600.

Procedure For Furnishing Information Concerning the Location of Company Utility Facilities**1. Processing Request**

A. The MPIR's will be responsible for ensuring that procedures for handling location requests are followed. Specific duties to be included in these procedures are:

1. Ensuring that USA related hardware and software are functioning properly.
2. Recording requests.
3. Forwarding requests to appropriate functional groups, i.e., gas, electric, telecom, etc.
4. Recording ticket completion information.
5. Establishing deadlines and follow-up procedures including incomplete tickets for on-going jobs.
6. Compiling and forwarding transmittal of data to outside parties.
7. Maintaining records of all transactions including the requirements of paragraph 5.

B: Form 62-3082 (Exhibit A) or Form 01-5484 (Exhibit B) are available to be used to record requests for location of Company-owned utility facilities.

2. Furnishing Information

TITLE: Protection of Underground Infrastructures

- A. It is essential that the response to a request include the location of all company facilities in the area. In most cases, there will be a single response. However, in some cases, a multi-business unit response may be necessary. A local "Memorandum of Understanding," detailing areas or responsibility must be established if more than one department or business unit is responding to requests for the same geographical area.
- B. PG&E must respond to all requests for location of company facilities when it receives a timely (two working days) notification from USA. This includes a response to the excavator when there are no company facilities in conflict with the proposed excavation.
- C. The answer to a request for information should include gas, electric, telecom, or other company facilities. All information furnished shall be complete and reliable as possible. Appropriate current company records such as facility maps shall be consulted for available data on all company facilities, whether existing, under construction, or proposed. In order to be assured that information on facility maps is up-to-date, all estimates shall be temporarily posted (pencil-posted) at the time the estimates are submitted for approval. The local estimate number should be shown as well as the proposed location of the new facility. This posting indicates that underground facilities are, or may be, installed.
- D. Information shall be furnished by one or more of the following: surface markings, maps, sketches, orally, or other suitable means. The action taken shall be recorded. Form 62-3082 or Form 01-5484 may be used for this purpose.
1. Information requested for planning or design purposes should normally be given in the form of maps and sketches. To record this action, either date the maps given or use the forms above. Unless deemed necessary by the local operating supervisor, surface markings will not be provided until construction is ready to begin, and timely notification from USA is received.
- E. **Surface Marking:** When a timely notification of any proposed excavation work is received and the excavator has previously delineated the construction area, PG&E shall, within two working days of receipt of the notice, locate and mark the location of its subsurface facilities which may be affected by the excavation.
1. Field markings provided by PG&E (and other facility owners) shall conform with the following color code:
 - (a) Red-electric power, distribution, and transmission installations, or municipal/government electric installations.
 - (b) Yellow-gas distribution and transmission installations, oil distribution and transmission installations, or installations containing or transporting dangerous materials, products, or steam
 - (c) Orange-telephone and telegraph installations, police and fire communication installations, and cable television installations. This includes PG&E communications facilities.
 - (d) Blue-water installations and slurry pipelines. This includes PG&E water facilities.
 - (e) Green-sewer installations.
 - (f) Purple-reclaimed water.
 - (g) White-USA delineation area (provided by excavator).

TITLE: Protection of Underground Infrastructures

- (h) Pink-temporary survey markings (provided by developer).
2. Surface markings of PG&E underground facilities should be done in accordance with DCS Guideline C-D-G1000, "Site Delineation and Mark & Locate Surface Marking," unless local conditions specify otherwise. All PG&E facilities within, and at least 2 feet beyond the boundaries of the excavation shall be marked. The excavator is required to delineate the boundaries of the excavation with white paint or other suitable markings, unless the excavator provides notice through USA that other identification means will be used. The marks must be made within the approximate location of the subsurface installations.
 3. The locator shall sign and date the locate request ticket indicating the facilities marked.
 4. The locator must be constantly alert to field conditions and identify facility records that may be inaccurate or incomplete. Such conditions shall be carefully investigated. Corrections shall be recorded and submitted to the Mapping Department.
 5. The DOM&C Department is responsible for the marking of all PG&E underground facilities (gas, electric, fuel, water, steam & communications, etc.). In areas outside the PG&E gas service territory, the division involved shall designate one of the other operating departments to mark all of the PG&E facilities. On occasion, should the DOM&C Department require assistance from another operating department, such assistance shall be made readily available by the department involved.
 - (a) If steel gas facilities cannot be located with standard locating equipment, additional electrolysis test stations (ETS) shall be installed, or other measures taken, to eliminate this problem.
 6. Surface Markings when PG&E is the excavator: The DOM&C Department is responsible for ensuring that the marking is performed in a timely (within two working days) and effective manner. Marking shall be performed by qualified personnel with proper locating equipment and up-to-date record information. If required, the DOM&C department will provide locating assistance to the excavating department. If the DOM&C department does not provide surface markings for an excavating department, local Memorandum of Understandings shall be implemented between departments to assure that the excavating department understands and agrees to their responsibilities.
- F. Maps or Sketches: maps and sketches supplied to other parties shall be limited to the immediate area of the request, and shall be stamped:
- Approximate Locations
Verify By Hand Tools
Pacific Gas & Electric Company
Date: / /
- G. Orally: This method should be discouraged except where it may be done for smaller installations such as single sewer laterals or water services or when responding that no Company facilities are affected by the proposed excavation. If it is impractical to furnish the desired information by means of maps or sketches or surface markings, it may be released orally.
 - H. Providing Depth Information: Section 4216 of the California Government Code does not require that we designate the depth of our facilities. If we elect to give out specific depth information it

TITLE: Protection of Underground Infrastructures

should only be provided when we are satisfied with the accuracy of the data such as that obtained by day-lighting our facilities. Depth locating instruments and tools may be used to the extent they provide a proven degree of accuracy for the specific situation.

I. Providing Facility Information to Public Agencies for work in Franchise Areas

1. Providing location and depth information for our underground facilities during the design phase of City and County agency projects can be of benefit in reducing impacts upon company facilities while reducing construction costs to agencies. This type of collaborative approach should be fostered by the company. The company should accommodate all agencies who have shown a willingness to mitigate potential conflicts through design avoidance during the design phase of the projects. Nothing in Code 4216 directs that the company must daylight (pothole) in order to provide precise locations or exact depths. The decision to provide field marking and depth information, including pot-holing or electronic depths, at the design stage of an agency project rests with the company on a case-by-case basis.

2. Abandoned Facilities: Information on the location of appropriate abandoned facilities should be provided when available. Where specific information on abandoned facilities may not be available, it is important to provide notice that such facilities may exist and their probable location.

3. Follow-up During Construction

A. During construction projects, field follow-up visits should be made by company inspectors, engineering, supervisory or construction personnel. The purpose of these visits is to prevent damage to facilities. Frequency of visits will depend on such items as the size of the job, importance of company installations, experience with the particular contractor, type of construction equipment being used, and type of markings being provided. In some cases it may be necessary to have a company employee assigned to the project on a full-time basis. (For example, a journeyman may be assigned to stand by during excavation around gas transmission facilities)

B. It shall be the responsibility of the local supervisor in charge of the marking crew to establish a specific schedule of follow-up visits for major projects.

C. For the purpose of this standard, a major project is one involving the following:

1. Installation of conduits large enough for a person to enter.
2. Installation of small conduits in conjunction with substructures large enough for a person to enter (e.g., manholes or vaults).
3. Installations where construction which parallels or crosses Company facilities will be continuing over an extended period of time.
4. Installations close to important facilities, such as gas transmission or feeder mains, where damage could cause loss of supply and interruption of service to a substantial number of customers.

D. If, at any time during construction, PG&E receives timely re-notification we shall re-locate and re-mark those subsurface facilities which may be affected by the excavation within two working days.

4. Precautionary Measures

TITLE: Protection of Underground Infrastructures

- A. City and county agencies should be encouraged to advise persons applying for permits, by so noting on the permits, to notify USA two working days prior to starting work.
1. Reasonable steps should be taken to encourage contractors, public agencies and others to notify USA of work they have pending at least two working days in advance to avail themselves of the service set forth in this Standard.
- B. Section 1541 (b) of the Construction Safety Orders (Title 8 California Administration Code Section 1541, issued by the Occupational Safety and Health Standards Board pursuant of the California Occupational Safety and Health Act of 1973 provides:
1. The estimated location of utility installations, such as sewer, telephone, fuel, electric, water lines, or any other underground installations that reasonably may be expected to be encountered during excavation work, shall be determined prior to opening an excavation.
 2. All Regional Notification Centers as defined by Government Code Section 4216(h) in the area involved and all known owners of underground facilities in the area who are not members of a Notification Center shall be advised of the proposed work at least two working days prior to the startion of any digging or excavation work. **Exception:** Emergency repair work to underground facilities.
 3. When excavation operations approach the estimated location of underground installation, the exact location of the installations shall be determined by safe and acceptable means.
 4. While the excavation is open underground installations shall be protected, supported or removed as necessary to safeguard employees.
5. Record Retention
- A. Any information given in writing, notes or information given orally, any letter of transmittal, and any form notice including those documenting requests for information where no Company facilities are involved shall be retained in the Division files for a period of not less than five years after completion of the project.
 - B. USA Ticket Handling Software: Keep all electronic information including the ticket number, completion date, comments, etc. for a period of not less than five years after completion of the project.
 - C. Archiving maps and sketches is not required. However, maps and sketches may be kept for major, complex, specific projects, or delineation requests.

Avoiding Damage To Underground Substructures

1. Requesting Information
 - A. Except in an emergency, prior to commencing any excavation the location of underground facilities owned and operated by other companies, municipalities or various governmental agencies shall be verified. This shall be done by calling USA, or the owners of the facilities, if they are not members of USA. PG&E shall contact USA at least 2 working days, but not more than 14 calendar days, prior to commencing the excavation. In an emergency, PG&E shall attempt to contact USA or other known facility owners that may have underground facilities in the area of excavation.
 - B. USA shall be notified for all excavation projects including those on private property, long term projects in subdivisions, completing stub services and in-place pole replacements.

TITLE: Protection of Underground Infrastructures

- C. The boundaries of the project will be delineated with white paint unless we provide notice through USA that other identification means will be used. Other identification means could include wood stakes, flags, "whiskers," or other suitable means to put a reasonable person on notice of the boundaries of the project. Delineation shall be made in accordance with DCS Guideline C-D-G1000 - Site Delineation and Mark & Locate-Surface Marking. Work shall be confined to the area marked in white. Work outside of that area is considered a new project and USA shall be notified to issue a new ticket.
- D. USA shall be notified if an owner of underground facilities fails to provide markings or information about their facilities.
- E. During construction, care should be taken to maintain surface markings. If field markings are no longer visible, USA shall be re-notified to have its members re-mark their underground facilities.
- F. If construction is expected to last beyond the valid date of the USA ticket, USA shall be called at least 2 working days prior to expiration to extend the ticket.
- G. Each operating headquarters shall maintain a current and accurate listing of names, telephone numbers and other necessary information of owners of other underground facilities. This will allow first-hand contact with them in emergency or after hours situations.
- H. The obtaining of information, drawings, contacting USA, etc., should be delegated to a specific individual to assure that all arrangements are completed prior to beginning of construction. However, every employee performing the actual excavation shall confirm these arrangements have been made prior to commencing any excavation. Lack of delineation white paint or facility surface markings may indicate proper notification to USA has not been made, or facility owners have not responded.
2. Avoiding Damage
- A. When excavating within the approximate location of substructures, (24" from the outside of the facilities as indicated by the mark) their exact locations shall be determined prior to using power operated equipment. Field markings, locating equipment, job prints or facility maps should be used to determine their locations. The exact locations shall be determined by careful probing and hand digging. When the facility is uncovered, adequate protection shall be provided for that facility.
- B. If the exact location cannot be determined by hand excavating, additional information shall be requested from the owner of the substructures.
- C. The crew must be constantly alert to field conditions which suggest that the information provided is inaccurate or incomplete (such conditions may be pole risers, unaccountable paving cuts, etc.). Such conditions shall be carefully investigated and the work programmed in a manner which will minimize the chance of possible injuries or damages.

Non-compliance Response:**1. Penalties For Non-compliance**

- A. Government Code 4216 establishes specific civil penalties for non-compliance. In addition to being responsible for damages done to others, an operator who negligently violates 4216 is subject to a penalty up to \$10,000. An operator who knowingly and willfully violates 4216 is subject to a penalty up to \$50,000.


2. After every incident of damage to third party or third party damage to PG&E:

TITLE: Protection of Underground Infrastructures

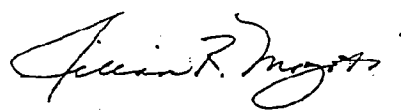
- A. Prepare incident report as directed by SP 250-2.
- B. Review incident to determine root cause, identify any trends and communicate any lessons learned. Take appropriate steps to prevent future damage, including additional training, discipline, or actions described in 2.C.
- C. For incidents involving damage to PG&E caused by third parties take the following action:
1. Bill and collect for damage response per SP 250-2.
 2. To deter third parties from repeatedly damaging PG&E facilities the following steps may be taken:
 - (a) Notify the contractors State License Board (CSLB) of violations of Government Code 4216. The CSLB has authority to discipline contractors under Government Code 7110.
 - (b) Notify the contractor's insurance company of incidents.
 - (c) Notify the local district attorney's office or the state or local agency that issued the excavation permit, of incidents and provide information as required to assist that agency in bringing civil action.

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Signed



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Reference Documents:

California Government Code, Chapter 3.1, Section 4216

Construction Safety Orders, Title 8, Section 1540

Standard Practice 250-2, "Reporting of Third Party Personal Injury or Property Damage"

DCS Guideline C-D-G1000 - Site Delineation and Mark & Locate Surface Marking