


UTILITY OPERATIONS	Bulletin Number: 155
FOR IMMEDIATE RELEASE	Date: 08/02/02
 Pacific Gas and Electric Company	Gas Information Bulletin

Title: Preventing Mechanical Damage to Gas Distribution Facilities

Check all appropriate boxes

<input type="checkbox"/> SAFETY ALERT	<input checked="" type="checkbox"/> GAS	<input checked="" type="checkbox"/> DISTRIBUTION	<input type="checkbox"/> ESTIMATING
<input checked="" type="checkbox"/> MANDATORY COMPLIANCE	<input type="checkbox"/> ELECTRIC	<input type="checkbox"/> TRANSMISSION	<input checked="" type="checkbox"/> MAPPING
<input type="checkbox"/> RECOMMENDED ACTIONS		<input type="checkbox"/> OPERATIONS	<input type="checkbox"/> SUBSTATION ENGR.
<input checked="" type="checkbox"/> INFORMATIONAL/CLARIFICATION		<input type="checkbox"/> SERVICE	<input type="checkbox"/> TRANS./SUB. M&C

Policy

It is the policy of the Pacific Gas and Electric Company (PG&E) to respond in a timely manner to facility location requests made with normal notice by California one-call centers. Furthermore, the Company is obligated to protect its employees and the public from hazards stemming from excavations near or over Company underground infrastructure. UO Standard S4412, *Protection of Underground Infrastructure*, describes the specific requirements for locating and marking Company underground infrastructure. Additionally, UO Guideline G14413, *Procedure for Excavating Pipelines and Services*, provides detailed procedures for conducting excavations with power-operated equipment over gas facilities. **This policy is an expansion of the Gas Distribution department's procedures to protect the public, third-party contractors, and the Company's employees, agents, and facilities.**

For California Gas Transmission (CGT)-owned facilities, including those CGT-owned facilities operated and maintained by the Operations, Maintenance and Construction (OM&C) department, follow the requirements of Gas Bulletin 151.

Criteria

Site visits are required in the following situations:

1. Excavation activities by a noncompliant excavator.
2. Agricultural activities where grading, diskng, or other disruptive physical work may threaten Company gas distribution facilities.

Field meets shall be conducted whenever planned or historical construction methods or practices are likely to threaten the integrity of Company gas distribution facilities. Field meets should also be used to determine excavation schedules on large-scale projects as well as to gain other critical information.

Standbys shall be conducted whenever an excavator works near or around designated critical Company gas distribution facilities.

Methods

Excavation Activities by a Known Noncompliant Excavator: A designated Company employee shall perform random site visits whenever field markings are made in response to a USA request, and the excavator has been deemed noncompliant by Safety Health and Claims (SH&C). SH&C will maintain a division-specific and systemwide list of noncompliant contractors and their contacts. Through the contractor compliance program, SH&C and the local operating departments shall work with these noncompliant excavators to help ensure compliance with safe work practices during excavation. If the contractor does not comply with safe work practices,

SH&C shall notify the contractor and the affected division superintendent that routine site visits will be conducted. SH&C shall implement the appropriate step on the Action Pyramid (See Section 9 of the PUI Manual) if the contractor continues to damage Company gas distribution facilities.

Procedure

1. SH&C provides a monthly list of noncompliant excavators to OM&C management. The group responsible for processing tickets identifies noncompliant excavators from this list. Identifying a noncompliant excavator **should** occur during the prescreening of a USA ticket and **must** occur before marking the facilities.
2. Process the ticket in accordance with UO Standard S4412. Tickets involving noncompliant excavators shall be clearly identified to ensure that the appropriate action is taken.
3. The mark-and-locate (M&L) supervisor shall assign the appropriate resources to perform these visits. This site visit shall be documented on the USA ticket (original or copy) by either the locator or the employee performing the visit. The group responsible for processing tickets shall enter the site visit information in the USA ticket software. If a copy of the ticket is used, attach the copy to the original ticket and retain for a period of 5 years. If there is insufficient space in the USA ticket software's comments field, state, "See hardcopy of ticket or 'other document'" in the comments section.
4. If uncovered underground gas distribution facilities are observed during the site visit and safe access is present, the employee conducting the visit shall obtain whatever inspection information can reasonably be obtained and complete the appropriate fields on the inspection report ("A" form). This Company representative will follow the requirements of UO Standard D-S0350/S4410, "Leak Survey and Repair of Gas Transmission and Distribution Facilities." If, due to the depth of the excavation or soil type, safe access is not possible the employee should request that the excavation be made safe so as to effectively inspect the facilities for possible damage. Damage to the pipe coating on steel facilities should always be suspected when the depth of the excavation requires "undermining" the facility.

Agricultural Activities

To ensure that agricultural operators are following safe work practices, site visits are recommended while excavation work is occurring during seasonal agricultural operations (such as, tilling, disking, or ripping). Site visits **shall** be conducted if any of the following conditions exist:

1. The Company facility is likely to be contacted as a result of the type of agricultural operation being performed.
2. The agricultural operator is known to be noncompliant with safe work practices or USA notification requirements.

Construction Methods

Field meets must be performed when any of the following activities occur:

1. Any type of boring activity crosses perpendicular to a gas distribution facility (including services).
2. Any parallel boring activity occurs within 2 feet of the outermost edge of any gas distribution facility (including services).

3. A slit-trench excavation is performed with a rockwheel or trencher within 2 feet from the edge of any gas distribution facility (including services) and/or crossing any gas distribution facility.
4. Any blasting activity takes place within 10 feet of the outermost edge of the gas distribution facilities (including services). For projects involving blasting, consult with the appropriate Area Senior Gas Operations Engineer.

Facility Type

The definitions section of UO Standard S4412, Protection of Underground Infrastructure, will be amended as follows:

Old text:

"Critical facilities: Buried Company UG infrastructure that may include electric and gas transmission lines or any other facility designated as critical by local supervision. Nothing in this standard requires any department to establish or maintain a list of critical facilities."

New text:

"Critical facilities: The Company's underground gas distribution facilities shall be designated as critical based upon the following criteria:

- Damage to the gas facility is likely to result in difficulty controlling the gas flow due to the size, material properties, operating pressure, and /or location of the facility. When determining the difficulty of controlling gas flow, also consider the lead-time required to obtain the employees and equipment needed to take remedial action."

The appropriate Area Senior Gas Operations Engineer, in consultation with the local OM&C supervisor, shall determine which facilities meet the above criteria. The Area Senior Gas Operations Engineer shall maintain a list of these critical facilities using the template on the gas emergency plan web page <http://www.techlib/manuals/gasemergplan/gep/> and, in addition:

1. Review and update the list, in consultation with the local OM&C supervisor, at least annually.
2. Provide the list or ensure the list is readily available and in use by mapping and construction for prescreening and ticket load management purposes.

A copy of the template is shown in Attachment 1.

Site Visits, Field Meets, and Standby Requirements

Site Visits And Field-Meet Requirements

To perform site visits and field meets, do the following required tasks:

1. Obtain the original USA tag or its most current copy.
2. Review the location of the facility, potential safety hazards, and mandatory safe excavation procedures with the excavator.
3. Inspect the work in progress. If hazards are observed, comply with the observed hazard notification requirements listed on page 1 of UO Standard S4412.

Standby Requirements

When excavations around critical gas distribution facilities are conducted by either the Company or an outside contractor, perform the following required standby tasks:

Before reporting to a site to perform standby duties, do the following:

1. Obtain the original USA tag or its most current copy.
2. Contact the excavator to arrange a standby.
3. Review the appropriate Company records (plat sheets, electronic files, service orders, etc.).
4. Obtain an approved locating instrument.
5. Before using the locating instrument, confirm that its calibration has been verified. If not, verify and document the calibration in accordance with Gas Standard M-61 2*.
6. Obtain an operable radio or cell phone.

Perform the following tasks at the site:

7. Verify that there are adequate means of communication between the excavation site and the local Company headquarters. If radio coverage is poor, consider the use of a cellular phone. If cellular phone coverage is poor, consider using a radio or determine a suitable location for communicating an emergency message.
8. Use an approved locating instrument to verify the existing surface marks.
9. Review the location of the facility, potential safety hazards, and mandatory safe excavation procedures with the excavator.
10. Inspect the work in progress. **Stop the work anytime the excavator does not follow the required safe work practices.** Attempt to shut down the job and contact the appropriate distribution supervisor if the excavator is found using power-operated equipment within the 2-foot buffer zone without first exposing and protecting the facility. The supervisor should contact the permitting agency and/or the public safety agencies for assistance, as needed. Pneumatic or hydraulic assisted hand tools may be used to excavate all but the last 12 inches of cover if the excavator demonstrates the "safe" operation of these tools. Backhoes, trenchers, rockwheels, etc., are to be considered power operated equipment and, as such, not allowed within the 2-foot buffer zone.

* Instruments used in locating for construction purposes shall have their calibration verified by this gas standard. The local operating supervisor may, at his or her discretion, follow the provisions of Gas Standard M-60.2

Locating Before Standby

Locate all Company-owned gas distribution facilities in accordance with UO Standard S4412, Protection Of Underground Infrastructure. The conductive locating method is preferred. If conductive locating is not possible or practical, use an indirect (inductive) method or another method listed in UO Standard S4412. The locator is authorized to use methods other than the conductive method when all reasonable means to connect to the facility have been tried. The locator **must** complete the checklist on the USA tag, including documenting that all reasonable efforts to connect to the facility have been expended.

Multiple Company Facility Locates

If Company gas transmission or distribution facilities exist within a USA ticket boundary, locators shall make extra efforts to inform the excavator that there are two different Company facilities on the USA ticket, and that both must be properly marked and located **before** any excavating may be performed within the ticket boundary. If a full-time standby is required for the two facilities, but two different groups maintain the facilities, only one standby employee is needed. Efforts shall be made to avoid having more than one standby person at the site.

Discovery of Inaccurate Marking and Locating

If it is determined during excavating that a gas distribution facility has been mismarked and no job impact or facility damage has occurred, the locating supervisor shall be contacted and the situation shall be locally investigated and resolved. If it is determined during excavating that a gas distribution facility has been mismarked and there has been substantive job impact on the part of the contractor or PG&E or facility damage has occurred, the locating supervisor shall be contacted immediately and the situation shall be investigated to determine the root cause. Refer to Section 12 of the *Protection of Underground Infrastructure (PU)* manual for further guidance.

Procedures When Excavating Within a Marked Two-Foot Buffer Zone

The following procedures are provided to further clarify required practices when excavating near gas distribution facilities. Note that all provisions of UO Guideline G14413, Procedure for Excavating Pipelines and Services, also apply.

General Requirements

1. Any excavation procedures described in this bulletin and in UO Guideline G14413 apply to **both** Company and third-party excavators.
2. **Never** use power-operated equipment, including high-pressure water/air jetting, within 12 inches from the outside wall of a pipeline or service. Power-operated equipment is defined as any tool or device that derives its motive force from mechanical means. **Only** use hand digging to excavate within 12 inches from a pipeline or service. Vacuum excavation equipment without high-pressure water/air jetting may be used to assist hand digging. Pneumatic or hydraulic assisted hand tools may be used to excavate all but the last 12-inches of cover if the excavator demonstrates the "safe" operation of these tools.
3. High-pressure (in excess of 125 psig) water/air jetting may damage the wrap on a steel pipeline. Water/air jetting may be used as allowed within 12 inches of the facility only if the pressure is less than 125 psig. When performing water/air jetting, the excavator must use pressure-control equipment to prevent higher pressures.
4. If excavation activities are planned to occur within 2 feet of the nearest side of the gas distribution facility, the facility must be unearthed using hand tools to ensure the excavator does not hit it.
5. If the excavation procedures include blasting, follow the *GPTC Guide for Gas Transmission and Distribution Systems – Appendix G-192-16*. This guide addresses mandatory leak surveys as well as other requirements. For more information, consult with the appropriate Area Senior Gas Operations Engineer.

Initial Excavation Requirements

6. Before using probe bars, the excavator shall ensure that they are in a safe condition.
7. Before using any power-operated equipment, the excavator shall probe the facility to a depth of 24 inches. The probing shall be spaced no more than the outside diameter, and at a right angle to the facility involved. Hand digging may be substituted for probing. If the facility is physically determined to be at a depth greater than 24 inches, the excavator may use power-operated equipment (including vacuum excavation equipment using high-pressure water/air jetting) to remove 12 inches of cover.
8. If the facility is initially determined to be at a depth greater than 24 inches, the excavator may use power equipment to dig a 12-inch deep trench and may hand dig an additional 6 inches. Then, the excavator may probe another 24 inches. If the facility is still at a greater depth, power equipment may be used to remove another 12 inches of earth. This process shall be followed until the facility is located and exposed. Probing may be substituted for the additional hand digging; however, the excavator must ensure that power-operated equipment (including high-pressure water/air-jetting) is **never** used within 12 inches of the facility.
9. All sides of the facility must be located, exposed and **protected**. Once the sides of the facility are exposed by hand, the excavator may use power-operated equipment for further excavation, provided the equipment is always kept a minimum of 12 inches away from the facility.

Note: Comply with the *Code of Safe Practices*, Section 723(f) and UO Guideline G14413, paragraph 8, when using probe bars or rods.

Incident Investigation

If an excavator contacts a Company underground facility located by Company employees, and the incident could possibly be attributed to mismarking the facility, the root cause analysis procedure requires that the original mark-and-locate activity be recreated within 3 working days of the incident. If the locating instrument was suspected to be malfunctioning, verify calibration of the instrument in accordance with Gas Standard M-60.2.

Approved by:

[Redacted Signature]

If you have any questions about this bulletin, please call any of the employee(s) listed below:

Contact(s):	[Redacted]	[Redacted]	[Redacted]
LAN ID(s):	[Redacted]	[Redacted]	[Redacted]
Phone(s):	[Redacted]	[Redacted]	[Redacted]

ATTACHMENT 1 – Critical Facilities Template

Critical Facility List

Distribution Facilities

FACILITY DESCRIPTION (Including Size & material):	LOCATION (including any useful physical descriptions):	Associated PLAT SHEET #'s and Blocks	OPERATING INFORMATION (Including MAOP and NOP)	COMMENTS