



Asset Type: **Gas and Electric Transmission and
Distribution**

Date Issued/Updated: **August 2009**

Function: **Operation and Maintenance**

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Title: Field Meets and Standby – Damage Prevention

Overview This work procedure (WP) provides step-by-step instructions for performing standby and field meet operations when excavating.

Governing Document Utility Standard S4412, "Preventing Damage to Underground Facilities"

Safety This WP promotes safety by reducing damages to Pacific Gas and Electric Company (Company) underground facilities.
Perform all activities associated with this WP safely and in accordance with applicable safety rules, the Code of Safe Practices, and Utility Standard Practice (USP) 22, "Safety and Health Program."

Before Starting this Procedure **Personal Protective Equipment (PPE)**
Field employees following this procedure must wear the following personal protective equipment (PPE) at a minimum, plus any other applicable PPE, as specified in the Code of Safe Practices:

- Hard hat (must be available)
- Traffic vest
- Proper work footwear, no sneakers allowed
- Long-sleeved shirt
- Long pants
- Gloves (must be available)
- Safety glasses (must be available)

Tools

- Communication device (i.e., radio, cell phone)
- Camera

Materials

- Map for reference
- Copy of current Underground Service Alert (USA) ticket
- For standby person: copy of WP4412-05, "Excavation Procedures for Damage Prevention"

Equipment: N/A

Qualification: Persons performing standby operations must be qualified for OQ 05-02, "Standby Pipeline."

Damage Prevention Procedures during Field Meets and Standby Operations

1. General Information

The mark and locate employee notifies the excavator when a field meet and/or standby operation is required. See WP4412-03, Attachment 1, "Determining When a Field Meet and/or Standby is Required," for specific situations that require a field meet or standby.

Refer to WP4412-05 when excavating or prospecting.

2. Field Meets

The purpose of a field meet is to review facility information with the excavator.

A. Initial Field Meet Procedure

- 1) Obtain the USA ticket. Verify that the ticket is current and work is performed by the excavator listed on the USA ticket. Obtain and review all appropriate drawings (plat sheets, Geographic Information System [GIS] maps, etc.). Review the location of the facility, potential safety hazards, and mandatory safe excavation procedures with the excavator.
- 2) Identify and communicate to the excavator the location of any known fittings (i.e., Mueller and IDW fittings, elbows, service tees) that may significantly protrude above, below, or to the sides of the pipeline.
- 3) Confirm the exact excavation area and determine if a standby is required (see WP4412-03, Attachment 1). If a standby is required, determine the date and time the work is scheduled to start and communicate the schedule to the responsible supervisor. **Inform the excavator that no excavation is allowed without a standby person on site.**

- 4) Determine if heavy equipment (i.e., motor grader, scraper, dozer) will be operated, driven, transported, or parked over the facility. If so, provide the responsible supervisor with the excavator's contact information and USA ticket number. The supervisor notifies the appropriate facility engineer.
- 5) Inform the excavator that the following information is required to determine allowable surface loading (e.g., wheel loads, crane outriggers) **before using heavy equipment over the facility:**
 - Location.
 - Depth of cover over facility, determined by prospecting (see WP4412-05, Attachment 1, "Prospecting Around PG&E-Owned Facilities").
 - Type of heavy equipment.
- 6) Document all actions and conversations on the USA ticket.

3. Standby (Activity Monitoring)

To perform standby operations for gas facilities, the standby person must have a current OQ 05-02 qualification for standby.

The standby person must be solely dedicated to standby and continuously observe the excavation process at all times while the excavation is in progress within 5 feet (ft) of the outermost surface of a critical facility.

The standby person is responsible for enforcing safe excavation practices. The standby person inspects the work in progress and ensures that the excavator follows the excavation procedures outlined in WP4412-05. **Stop** the work if the excavator does not comply with WP4412-05. If anyone's safety is at risk, **shut down the job and notify the supervisor. If the excavator refuses to shut down the job, move to a safe location, call 911, and then call the responsible supervisor.** The supervisor follows WP4412-06, "Handling Excavators, Contractors, and the Public Working Unsafely Around Utility Facilities."

A. Standby Procedure

- 1) Obtain the USA ticket. Verify that the ticket is current and the work is performed by the excavator listed on the USA ticket.
- 2) Obtain all relevant worksite drawings (plat sheets, GIS maps, etc.) and compare them to the surface markings.
- 3) Ensure that there is an operating radio or cell phone available.
- 4) Review the location of the underground facility, potential safety hazards, and required safe excavation procedures with the excavator and excavation crew.
- 5) Identify and communicate to the excavator the location of any known fittings (i.e., Mueller and TDW fittings, elbows, service tees, drips) that may significantly protrude above, below, or to the sides of the pipeline.

- 6) Tailboard with the excavation crew before starting the excavation. At a minimum, discuss the following issues:
 - a. The role of the designated standby person.
 - b. Safe excavation procedures, outlined in WP4412-05.
- 7) Ensure that the excavator follows the excavation procedures in WP4412-05.
- 8) Ensure that the excavator confirms the existing surface markings within the delineated USA area by prospecting. See WP4412-05, Attachment 1.
- 9) Continually observe the excavation process for all excavation activities within 5 ft of the outermost surface of the facility. This includes but is not limited to probing, hand digging, and providing direction to the equipment operator. Excavation within 5 ft of the outermost edge of the facility must **stop immediately** if the standby person cannot continuously observe the excavation process.
- 10) Ensure that the excavator follows specific surface loading limitations (e.g., wheel loads, crane outriggers) provided by the responsible engineer when operating heavy equipment over a critical facility.
- 11) Determine if construction involves the installation of above-ground structures. Contact the responsible facility engineer for review, consideration, and approval of above-ground structures within the facility right-of-way/easement. See WP4100-04, "Gas Overbuilds."
- 12) If underground gas facilities are exposed, complete Form 62-4060, "Leak Survey, Repair, Inspection and Quarterly Incident Report (Form A)," according to Utility Standard S4110, "Leak Survey and Repair of Gas Transmission and Distribution Facilities."

B. Special Circumstances for Standby

The standby person determines if any of the conditions listed below exist and enforces USP 22 and the Code of Safe Practices.

Consult the appropriate engineer for additional clarity regarding the following issues, if needed:

- 1) **Excavations of extended lengths occurring parallel and within 5 ft of the outermost surface of a critical facility:** Excavators prospect at enough locations to provide confidence in the surface markings. Do not exceed 100 ft between prospecting locations.
- 2) **Parallel boring activity within 10 ft of the nearest side of a critical facility:** Excavators prospect at enough locations to instill confidence in the surface markings for the extents of the boring activity. Do not exceed 100 ft between prospecting locations.
- 3) **Perpendicular boring activity that crosses a critical facility:** Excavators expose all sides of the facility in the path of the bore a minimum of 1 diameter of the largest reamer to be used or 18 inches, whichever is greater, below the bottom of the pipeline. The excavation remains open until the reaming operation is complete.

To address concerns of soil settlement due to boring around Company facilities, the rule-of-thumb minimum clearance requirements between a bore tunnel and Company facilities are as follows:

- a. **Horizontal directional drilling:** a minimum of 3 bore diameters (three times the diameter of the largest reamer used), but not less than 12 inches.
- b. **Hammer-bore, jack-and-bore, auger-bore, micro-tunneling, etc.:** a minimum of one pipe diameter, but not less than 12 inches.

Note: When boring around gas transmission facilities, it may be necessary to calculate case specific clearances to prevent settlement of the pipeline. Contact the responsible pipeline engineer to confirm the above minimum requirements are appropriate when boring around gas transmission facilities.

- 4) **Wheel trenching (e.g., rock wheeling) within 5 ft of the nearest side of a critical facility:** Consult the appropriate engineer to discuss standby procedures. Wheel trenching is not allowed for perpendicular crossings.
- 5) **Blasting activity within 50 ft of the nearest side of a Company facility:** Consult the appropriate engineer to discuss standby procedures.

C. Damage to Facilities Including Gouges, Dents, Corrosion Pitting, and Coating Damage

- 1) Immediately call 911 if damage results in a release of natural gas or other hazardous substances that endanger life, health, or property.
- 2) Immediately notify the responsible supervisor when damage occurs to any Company facility.
- 3) Report all damage to gas facilities (new or pre-existing) using Form 62-4060, according to Utility Standard S4110. Do not re-coat the pipeline or backfill any excavation containing damaged facilities.
 - a. **Gas transmission facilities (maximum allowable operating pressure [MAOP] greater than 60 pounds per square inch gauge [psig]):** Notify gas control personnel and the responsible gas pipeline engineer of any new or pre-existing damage. All damage (i.e., gouges, dents, corrosion pitting, coating damage) must be accurately measured in the field. A gas pipeline engineer assesses the damage and determines an acceptable repair method, according to Utility Standard S4134, "Selection of Steel Gas Pipeline Repair Methods."
 - b. **Gas distribution facilities (MAOP less than or equal to 60 psig):** Local gas distribution personnel are responsible for repairing all damage (i.e., gouges, dents, corrosion pitting, coating damage) per Utility Standard S4134 or Gas Numbered Document A-93.1, "Plastic Gas Distribution System Construction and Maintenance."
- 4) The responsible supervisor fills out an incident report, according to WP1465-02, "Gas Event and Near Hit Reporting." The gas or electric Event Reporting Engine website is located at: <http://event>.

Definition of Terms

Boring: Horizontal directional drilling, augering, tunneling, or other trench-less technologies.

CGC: California Government Code.

Critical facilities: All gas transmission pressure (above 60 psig) facilities and all electric facilities operating at and above 60 kilovolt (kV) are considered "critical facilities" for the purposes of this WP. Critical facilities may also be determined by the local operating area. Those facilities which, if damaged, are 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, give consideration to employee and equipment availability. Critical facilities also are those electric distribution facilities which, if damaged, are likely to result in extensive (long duration) outages or outages to critical customers.

Excavator: A person performing 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 the following ways: grading, trenching, digging, ditching, drilling, augering, tunneling, scraping, cable or pipe plowing, driving, or any other way.

Field meets: Prearranged meetings between the locator and excavator. Field meets are intended to inform the excavator of the location of and danger posed by Company facilities. They may also be used to clarify any questions the excavator has for the Company regarding its facilities or timetable for the excavation.

High-priority facilities: High-pressure natural gas pipelines with normal operating pressures greater than 415 kilopascal (kPa) gauge (60 psig), petroleum pipelines, pressurized sewage pipelines, high-voltage electric supply lines, conductors, or cables that have a potential to ground of greater than or equal to 60 kV, or hazardous materials pipelines that are potentially hazardous to workers or the public, if damaged. See [California Government Code §4216\(e\)](#)

OQ: Operator qualification.

Standby: A process by which an employee is present at an excavation site at all times while the excavation is occurring. A standby employee must make all reasonable efforts to stop unsafe actions near Company facilities.

USA ticket: A document created when an excavator calls Underground Service Alert (USA) requesting underground facility locations before excavating. This document can be a hard copy or an electronic file.

Recision This work procedure cancels and supersedes the following Gas Distribution Information Bulletins:

- 151 Rev. 2, "Preventing Mechanical Damage to Gas Transmission Lines," dated 05/17/07
- 155, "Preventing Mechanical Damage to Gas Distribution Facilities," dated 08/02/02

Reference Documents

California Government Code §4216(e)

Code of Safe Practices

Company Form 62-4060, "Leak Survey, Repair, Inspection and Quarterly Incident Report (Form A)"

Event Reporting Engine

Gas Numbered Document A-931, "Plastic Gas Distribution System Constuction and Maintenance"

OQ 05-02, "Standby Pipeline"

Safety, Health and Claims (SH&C) Procedure 104, "Observed Hazard Notification: Third Parties Working Around Utility Facilities"

Utility Standard Practice (USP) 22, "Safety and Health Program"

Utility Standards:

- S4110, "Leak Survey and Repair of Gas Transmission and Distribution Facilities"
- S4134, "Selection of Steel Gas Pipeline Repair Methods"
- S4412, "Preventing Damage to Underground Facilities"

Utility Work Procedures:

- WP1465-02, "Gas Event and Near Hit Reporting"
- WP4100-04, "Gas Overbuilds"
- WP4412-03, "Marking and Locating PG&E Underground Facilities," Attachment 1, "Determining When a Field Meet and/or Standby is Required"
- WP4412-05, "Excavation Procedures for Damage Prevention," Attachment 1, "Prospecting Around PG&E-Owned Facilities"
- WP4412-06, "Handling Excavators, Contractors, and the Public Working Unsafely Around Utility Facilities"

Contact for More Information



Date Issued August 2009

Approved by Robert P. Fassett
Director

Revision History

Chg No.	Date	Description	By (LAN ID)
00	August 2009	Initiated new work procedure.	