



Gas Information Bulletin

Title: Preventing Mechanical Damage to Gas Transmission Lines

Check all appropriate boxes

SAFETY ALERT	X	GAS	X	DISTRIBUTION	ESTIMATING
X MANDATORY COMPLIANCE		ELECTRIC	X	TRANSMISSION	MAPPING
RECOMMENDED ACTIONS				OPERATIONS	SUBSTATION ENGR.
X INFORMATIONAL/CLARIFICATION				SERVICE	TRANS./SUB. M&C

Note: This Gas Information Bulletin 151, Rev1, replaces the GIB 151 dated 4/15/02

CGT Policy Preventing Mechanical Damage to Transmission Pipelines

This policy is intended to reaffirm and clarify required procedures and practices designed to prevent buried transmission pipelines from being mechanically damaged by external forces. This policy applies to **ALL** buried transmission pipelines and pipeline facilities owned by CGT, and the requirements apply to **ALL** parties involved with mark and locate, excavation, and standby.

This policy provides requirements in addition to existing PG&E standards, and replaces the Gas Information Bulletin 151, dated 4/15/02. It also replaces existing Local Transmission Standby Policy (LTSP – January 2000) and GSM Standby Policy (1997). Existing PG&E standards and guidelines include UO S4412 Protection of Underground Infrastructure, UO G14412 Site Delineation and Mark and Locate Surface Markings, and UO G14413 Procedures for Excavating Pipelines and Services. For gas distribution facilities follow the requirements of Gas Information Bulletin 155, "Preventing Mechanical Damage to Gas Distribution Facilities".

This policy was developed by a cross functional team of GSM&TS, General Construction and Distribution T&D employees. Past incident report root cause findings, policies, as well as knowledge of actual field practices being employed, were all used in the development of this policy.

No Excavation is allowed under the following conditions:

- If no current USA Tag
- If no Mark and Locate
- No Standby = No dig!! (with-in 5 feet)

LOCATING TRANSMISSION PIPELINES

The following describes the Mark and Locate requirements for locating all transmission pipelines. Mark and Locate personnel are required to be Operator Qualified for OQ task 05-01,

Method All CGT-owned pipelines shall be conductively located using a direct connection. In the event this is not possible, due to the lack of available facilities to connect to (e.g., ETSS, valves, regulator sets, etc.), authorization to inductively locate must be obtained. Prior to obtaining this authorization, the locator must complete the checklist on the USA tag, document that all possible efforts to connect to the pipe have been expended and a Corrosion Mechanic should be consulted for help with direct contact locating. **If the pipe must be inductively located, the locator shall carefully probe and/or hand dig to VERIFY that the pipeline has been properly located.**

If probing or hand digging is not possible at the time of mark and locate because of hard surface (e.g., concrete, asphalt, etc.) and the pipe is inductively located to within 10 feet of a planned excavation, then exact pipeline location shall be confirmed during excavation with a standby person present. If the exact pipeline location is confirmed during excavation and the outside edge is more than 5 feet from the excavation, no further Stand-by will be required. As allowed by UO G14413, power-operated equipment may be used to remove pavement if there are no facilities within the pavement. If inductive locating is authorized as described above and if the pipe is exposed by excavation, an ETS shall be installed whenever practical, and a direct connection shall be established to mark and locate the remaining pipe in the USA boundary. If this cannot be accomplished, a Work Request shall be submitted (and the number noted on the USA tag) at the close of the job to ensure an ETS is installed in a suitable and accessible location to facilitate future conductive locating procedures.

Installation of ETS to Allow Conductive Locates In implementing this policy, each district or division crew should identify ETS installations that are needed to ensure conductive locates can be performed in the future.

Locating Pipeline Offsets or Branches In the event a pipeline offset (change in pipeline direction) or branch has been marked with any instrument, conductively or inductively, the location of the marked pipeline offset or branch SHALL be verified using probing and/or hand digging, PRIOR to allowing any power operated excavation within 5' of the pipeline.

Multiple PG&E Facility Locates In the event two different PG&E pipelines (transmission and distribution) are present within the USA boundary, district and/or division M&L personnel shall communicate to the excavator that two PG&E pipelines are identified on the USA ticket, and that both must be properly marked and located PRIOR to any excavation within the USA boundary.

Discovery of Inaccurate Mark and Locates In the event it is determined during excavation that a buried pipeline has been mis-marked, the responsible engineer shall be immediately contacted and the incident investigated to determine root cause. The Mark and Locate shall be re-established and excavation postponed until the new Mark and Locate is completed.

All other requirements in PG&E Standard S4412 and Guideline G14412 also apply to M&L activities.

EXCAVATION PROCEDURES

The following procedures provide additional clarity on required practices when excavating in the vicinity of pipelines. All other provisions detailed in Guideline G14413 also apply.

Requirements for Confirmation of Pipeline Location

Excavation procedures described herein, and described in Guideline G14413, apply to ANY excavator, including PG&E or Third Parties. The following conditions require confirmation or exposing of the pipeline location:

- **Confirm pipeline location if excavation is from 2-5 feet of the nearest side:** Prior to and during excavating, confirm the location of all marked pipelines by using a probe bar and/or hand-digging to expose the line. Confirmation is required whenever the nearest side of the pipeline is from 2-5 feet of a planned excavation. At no time is power-operated equipment (including high pressure water/air jetting*) to be used within 12 inches from the outside wall of the pipeline. Vacuum excavation equipment without high pressure water/air jetting may be used to assist hand digging operation.

* High-pressure (in excess of 125 psig) water/air jetting action may damage the wrap on a pipeline. Water/air jetting less than 125 psig is allowed within 12 inches of the pipeline.

- **Expose the pipeline if excavation is within 2 feet of the nearest side:** If excavation activities are going to occur within 2 feet of the nearest side of the pipeline, the nearest side of the pipeline must be exposed to ensure the excavator does not hit the pipeline. The excavator must hand dig if the excavation is within 12 inches from the outside edge of the pipeline.
- **Confirm location of any construction involving the installation of above ground structures:** Permanent structures shall not be on the right of way unless written approval has been given by the PLE. Such structures limit our ability to maintain and operate the pipeline.
- **If excavation procedures include blasting:** Follow GPTC *Guide for Gas Transmission and Distribution Systems* – Appendix G-192-16. This Guide addresses leak surveys that must be conducted, as well as, other requirements. Please consult the appropriate Pipeline Engineer for more information.

Specific Procedure for excavation within 5 feet of the Pipeline

- Prior to using any power operated equipment, probing to a depth of 24 inches, at 5 inch spacing, at a right angle to the pipeline is required. Hand digging may be substituted for probing. If the pipe is determined to be deeper than 24 inches, power operated equipment (including vacuum excavation equipment using high pressure water/air jet) may then be used to remove 12 inches of cover. This process will be repeated until probing locates the pipeline. Power operated equipment may be used to remove the cover to within 12 inches of the pipeline. Hand digging shall be used to remove the last 12 inches of cover to expose the top of the pipe. **At no time will power operated equipment be allowed within 12 inches of the wall of the pipeline.**
- Once the pipe is exposed, all sides of the pipe are to be located and exposed. Once the sides are exposed by hand, excavation with power-operated equipment is allowed, taking care to maintain approximately 12 inches between the power-operated equipment and the pipe. These procedures are to be followed until the pipe is fully located and exposed.
- For excavations of extended lengths occurring parallel and within 5' of a pipeline, the pipeline location must be "confirmed" by exposing the pipeline at enough locations to instill confidence in the markings. The absolute **maximum** distance between confirmations is 100 feet.

STANDBY REQUIREMENTS

The following describes the stand by requirements when excavations around a pipeline are conducted by PG&E or an outside contractor. Standby personnel are required to be Operator Qualified for OQ task 05-02, Standby. The Standby person does not need to be OQ'd in Mark and Locate.

When Required

Excavation Activities within 5' - A Standby person is required to be on site whenever excavation (digging, trenching, etc.) is within 5 foot from the edge of the pipeline. Field visits during excavations that are not planned to be within 5 feet of the edge of the pipeline are encouraged, especially during multiple day jobs. A Standby person should be considered during excavations outside the 5 feet buffer if the Contractor may not understand the requirements or has a history of not complying with safe USA practices.

Agricultural Activities - During normal agricultural operations (such as, tilling, discing, or ripping), it is strongly encouraged to have a Standby person on site during the first day of the

operations or until the agricultural operator has demonstrated to the Standby person that the operator has the ability and desire to comply with safe excavation practices. **A Standby person is required to be on site if any of the following conditions exist:**

- The pipe is confirmed to be shallow enough to possibly be hit by the type of agricultural operation being performed and the agricultural operation doesn't have a process in place to protect the pipeline.
- The agricultural operator is known to not understand or comply with safe USA and agricultural practices.
- Positive contact (by either face or phone) has not been achieved for this specific USA tag.

Standby activities for agricultural operations exceeding 1 day are not required, unless any one of the above described conditions are present. When agricultural operations are planned to occur over many days, field visits are encouraged to ensure that the operator is still complying with all required safety practices.

Boring Activities - A Standby person is required when any kind of boring activity is crossing the pipe. A Standby person is also required for any boring activity parallel to the pipeline that will come within 10 feet of the nearest side of the pipe. Please consult the appropriate Pipeline Engineer to clarify the standby requirements for boring activities.

Blasting Activities - A Standby person is required for any blasting activity within 50 feet of the nearest side of the pipeline. Please consult the appropriate Pipeline Engineer to review the nature of the project.

Responsibilities of a Standby Person

- Obtain the current USA Tag. (confirm active)
- Obtain and review all appropriate drawings (plat sheets, GIS maps, etc.)
- Ensure that you have an operating radio or cell phone.
- Obtain locating equipment (probe rod and shovel).
- Document all field meeting conversations with the excavator on the USA Tag
- Ensure that the potential hazards of this pipeline are communicated to the operator
- Observe when a third party is probing or hand digging and provide direction to the back-hoe operator.

Specific On Site responsibilities include the following:

- Conduct a tailboard with the Excavator and the excavation crew. Review the location of the line, potential safety hazards, and required safe excavation procedures, as required in this bulletin and in our standards
- If the pipeline is within 5' of a planned excavation, confirm the existing Surface Marks within the USA boundary. The location can be confirmed by the Standby person using a probe bar and/or hand digging to expose the line. Or the location can be confirmed by requesting that the excavator, with the Stand-by person observing, confirm the location using a probe bar or hand digging. See UO Guideline G14413.
- Inspect the work in progress, and **STOP the work anytime the excavator does not follow the excavation rules discussed with him.** If the excavator continues to break the rules, the job shall be shut down, and the appropriate supervisor should be notified. If the operator will not comply, move to a safe location and dial 911 and report the situation to the local authority, and then contact the appropriate supervisor.

- Daily the Standby person should verify the excavator's compliance by looking for other excavation locations that may not have been USA'd, or where the excavator was within 5' of a pipeline and Standby was not performed.

If excavations have occurred without a USA:

Require the excavator to apply for a USA. After the USA ticket is received, mark and locate any pipelines in the vicinity. If a pipeline is determined to be within 2 feet of the excavation, the pipeline shall be exposed, after the two working day USA notification period, to check for mechanical damage.

If excavations have occurred when Standby was not present:

Excavated locations within 5' of pipelines with a valid USA, that had been M&L, but no Standby was present, shall be probed or hand dug to confirm the location of the pipeline and verify that the excavation did not come within 1' of the outside edge. If the excavation came closer than 1' from the outside edge, the pipeline shall be exposed to verify the condition of the wrap.

In all cases where the excavator does not comply, the Standby person should discuss the issues with the excavator and consider completing SH&C Form 103 "Observed Hazards Notification". If the excavator continues to break the rules, the Standby person should enlist his/her supervisor to bill the excavator for the extra time required to verify the integrity of the pipeline and consider other legal recourse.

INCIDENT INVESTIGATION FOR MIS-MARKED FACILITIES

All third party incidents shall be reviewed to determine if a mis-mark contributed to the incident. If the pipeline had been USA'd and Mark and Located by PG&E personnel, and the mis-mark could have contributed to the incident, the Mark and Locate must be recreated. The original Mark and Locate must be recreated, within 3 days of the incident as part of the root cause analysis.

Approved by:

(original signed by)

[Redacted Signature]

Date: 5/1/05

Author: [Redacted Name]

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

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