



Interim Practice

Issuing Department: GAS SYSTEM MAINTENANCE & TECHNICAL SUPPORT
Manager: [REDACTED]

Effective Date: 9/15/98
Review Date: 11/15/98

SUBJECT: Procedure for Excavating Pipeline with Power-Operated Equipment

Objective

Provide direction to employees to protect underground facilities when excavating near the pipeline.

This standard supports the DCS/GTS Standard D-S0402/S4412, "Protection of Underground Infrastructure" and the GSM&TS "Stand-by Policy"

Scope

These requirements apply to GSM&TS employees and others excavating in company easements or right of way to locate a pipeline. The use of power-operated equipment to assist with the hand digging and probing is allowed only if mutually agreeable with the operator and the excavator.

Rescission

All previous instructions, oral or written, that may be contrary to this standard.

Originator

Gas System Maintenance & Technical Support - System Integrity

Responsibility For Implementation

Manager of GSM&TS or designated representative

Contact for Further Information

[REDACTED]

References

DCS/GTS Standard D-S0214/S4412, "Protection of Underground Infrastructures"

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

Code of Safe Practices

Approvals and Authorizations

[REDACTED]

Manager, Gas System Maintenance & Technical Support

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Subject: Procedure for Excavating Pipeline with Power-Operated Equipment

Number: RP 4412.2
Revision: 1

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PROCEDURE

1. All pipe excavations must have a Leak Survey, Repair, Inspection and Gas Quarterly Incident Report (Form A) completed.
2. Before excavating notification shall be made to Underground Service Alert (USA), the Owner/Operator of any identified underground substructures, and the property owner or tenant.
3. Prior to commencing work, verify the presence of all company and third-party substructures. Also, verify that the operator and the excavator have mutually agreed to allow the use of power-operated equipment in addition to hand digging and probing when locating the pipeline.
4. Any damage (gouges or corrosion pitting) to the pipe shall be measured. An ultrasonic thickness tester and a pit gauge should be available during all excavations. The ultrasonic thickness tester should be used to measure the general wall thickness around the damage. The pit gauge should be used to measure the depth of damaged area. This data must be entered on the "Leak Survey, Repair, Inspection, and Gas Quarterly Incident Report" (Form A Report). GSM&TS Pipeline Engineering must be notified of any damage prior to backfilling.
5. Locate the pipeline as accurately as possible by means of a pipe locator. If the pipeline is suspected to be greater than 5 feet deep or in unstable soil, be prepared to step or shore the excavation.
6. Excavation within the approximate location of the pipeline (24 inches from the outside of the facilities as indicated by the mark), shall be first exposed by hand excavation, or by a combination of hand, careful probing, and mechanical means, following the procedures specified in steps 7 through 13. This applies to excavations by contractors, DCS, as well as those being done by GSM&TS personnel. *Field personnel must use caution and not probe where underground electric cables are present, or may be present.*
7. Position the backhoe as near as possible over the center of the pipeline and in a position such that the line of digging will be parallel with the pipeline.
8. Probe to a depth of approximately 24 inches at spacings no greater than 5 inches. This probing is to be done at right angles to the pipeline for the full width of the proposed daylighting excavation. If the ground condition does not permit probing, then a trench approximately 18 inches deep shall be hand dug, using a shovel, for the full width of the proposed daylighting excavation.
9. If it is determined that the pipe is deeper than the depth of the initial probing or hand excavation, as listed in step 8, then excavation by backhoe will be permitted to a depth 12 inches less than the actual probing depth or depth of the hand dug trench achieved in step 8.

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10. After the initial excavation by backhoe has been made, a trench 18 inches in depth shall be hand dug across the full width of this excavation. If the pipeline is not exposed in this 18 inches of hand excavation, then another 6 inches may be removed with the backhoe. Probing may be substituted for the hand dug trench until the excavation is within 12 inches of the pipe (provided soil conditions permit accurate probing). This method will ensure a 12-inch separation between pipeline and backhoe bucket at all times.
11. This same procedure of alternately digging by hand 18 inches, or probing if soil conditions permit, and then excavating by backhoe 6 inches, shall be continued until the excavation is within 12 inches of the pipeline. *Extreme care must be taken during this procedure to ensure that the hand dug trench or probing operation is wide enough to allow for the cutting made by the corner teeth on the bucket in the event that the backhoe is not positioned directly over the main.* In all cases the remaining 12 inches of cover must be removed by hand shovel.
12. After the top of the pipe has been cleaned off by hand excavating, the sides of the pipe shall be accurately located. The backhoe shall then be positioned so it will again be digging parallel with the pipe, but alongside of it and no closer than 12 inches. The excavation shall then continue alternately along each side of the pipe in the same manner, never digging closer than 12 inches to the pipe sides or the top with the backhoe bucket.
13. When excavating along the side of the pipe, the spoil material shall be deposited on the same side of the pipeline as the excavation in progress so it will not be necessary to swing the bucket over the pipe. The material on top of the pipeline may be pushed into the excavation by folding the backhoe bucket and pushing it off with a side motion of the bucket bottom as long as the 12 inch separation is maintained between backhoe bucket and pipe.
14. During the excavation process the pipeline shall be kept exposed at all times by hand work. In no event shall the backhoe be permitted closer than 12 inches to the pipe.
15. When the pipeline is uncovered, adequate protection shall be provided for the pipe.
16. During backfilling operation, if performed by the backhoe, the operator shall not swing the bucket over the pipeline nor place it closer than 12 inches to the pipe.
17. The procedures listed above are minimum requirements and do not preclude the use of additional precautions as deemed necessary for the particular job in progress.