PACIFIC GAS AND ELECTRIC COMPANY
CUSTOMER ENERGY SERVICES (CES)/GAS SUPPLY (GS)

CES/GS GUIDELINE

ISSUING DEPARTMENT: T&CS, DISTRIBUTION
CES MANAGER: DISTRIBUTION
GS MANAGER: Gas System Technical Support

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TITLE: Special Leak Surveys

Purpose:

To establish guidelines for the performance of special gas leak surveys of Company gas facilities and buried station piping for the purpose of detecting and reporting leakage. This Guideline supports CES Standard C-T&CS-S0350/GS Standard Practice 460.21-4, "Periodic Leak Surveys of Gas Transmission and Distribution Facilities."

Responsibility:

The responsibility for performance of special gas leak surveys and records shall rest with the operating line organization managers/superintendents who directs the maintenance and operation of the facilities.

Definition of Terms:

The following definitions shall apply to this Guideline:

Building: Any structure used for human occupancy in which gas could accumulate.

Confined Space: Any structure of sufficient size that could accommodate a person and where gas could accumulate; e.g., vaults, manholes, etc., or where ventilation, entrance and exit is limited.

Gas Detector: An instrument capable of detecting and measuring the percentage concentration of combustible gas in air.

Gas Facilities: All Company operated gas lines and related appurtenances.

Leak: The unintentional escape of gas from containment.

Leak Grades:

1. A **Grade 1** leak represents an existing or probable hazard to persons or property requiring immediate repair or continuous action until conditions are no longer hazardous.
2. A **Grade 2** leak is one that is not hazardous to life and property at the time of detection, but requires scheduled repair based on probable future hazard.
3. A **Grade 3** leak is one that is non-hazardous at the time of detection and can reasonably be expected to remain non-hazardous.

Leak Survey: A search for possible gas leakage in any area where gas facilities exist, or where a gas leak is reported or suspected.

Reading: A repeated measurement of gas indicated on a gas detector. Where the reading is in a confined space, consideration should be given to the rate of dissipation when the space is opened or ventilated for the test and the rate of accumulation when the space is closed.

Special Leak Survey: A leak survey that is separate from the periodic one year, three-year and five-year leak surveys.

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Station Piping: For the purpose of leak surveying, this includes all underground gas pipes and appurtenances within the property lines of compressor stations, terminals, storage or holder facilities, regulator stations and other gas operating installations

Substructure: Any structure, tunnel, passageway, or other confined space below ground level where gas could accumulate

Tunnel: A subsurface passageway in which a person could enter and gas could accumulate For purposes of this Guideline, "tunnel" also includes sewers, storm drains, pipelines, conduits, etc

Types of Special Surveys

Special surveys include but are not limited to the following

1 Further and more detailed surveys to pinpoint leakage found on Periodic Leak Surveys

2 Customer or third party complaints of leakage

3 To obtain pipe condition information ahead of street improvements

4 Safety control during operating pressure conversions

5 Surveying major third party construction projects where large trench, chamber or vault excavations are made, or as required by paragraphs 1 thru 5 under "Third Party Projects Involving Tunnel and Confined Space Construction," below

6 Suspected leakage or questionable conditions

7 Following an earthquake, landslide, etc , pipelines located in areas showing significant soil movement should be leak surveyed periodically until the supervisor considers the area to be non-hazardous to the public

Third Party Projects Involving Tunnel and Confined Space Construction

Gas facilities in areas in which such projects are scheduled for construction shall be leak surveyed within 3 months prior to the start of project.

1 All Grade 1 and 2 leak indications are to be cleared prior to start of the project

2 All Grade 3 leak indications are to be verified by barhole and substructure testing as well as by surface testing Such indications are to be cleared prior to start of the project when there is evidence of migration or likely migration of gas to the construction site

3 Surveys are to be conducted at regular intervals during construction Frequency will depend on such factors as type, age and condition of pipe, leak history, contractor's construction methods, and proximity of new substructures to company facilities

4 Should damage to a gas facility occur during construction, immediate action shall be taken to control the escape of gas, including post-repair surveys to assure that no further leakage exists and that tunnels and confined spaces are clear of readings

5 Surveying may be combined with the procedures described in Standard Practice 403-2, "Request for Information Concerning the Location of Company-Owned Facilities "

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Survey Procedures:

1 Conduct survey with portable gas leak detector in and around buildings or homes, at foundation vents, at meter service riser bends, at sewer vents on buildings or homes, or in substructures and excavations, and take such other appropriate actions necessary to control the hazard

2 Make bar tests at suitable intervals to determine points of leakage

Note Wherever possible, bar testing should be preceded by surface tests with flame ionization or equivalent instruments as a means of reducing the number of test holes required

3 Where leakage exists, consideration shall be given to surveying at points where gas facilities cross building or home sewer laterals

4 Consult soil condition map, and where conditions are severe such as wet adobe, special care shall be exercised to select reliable test methods If required, bar testing or excavations or both shall be made to or below the gas main or service taking suitable precautions to avoid damage to other utility facilities In vicinity of electric underground facilities, construction practices outlined in Standard Practice 449-1 are to be followed

Records and Reports

Maintain records as specified in CES Standard C-T&CS-S0350/GS Standard Practice 460 21-4

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Signed,

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Gas Services and Operations Managers

Gas Services and Operations Superintendents

Technical and Construction Services Managers

Division Managers

Division Capital Investment Directors

Division Construction, Maintenance and Operations Directors

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Reference Documents:

Standard Practice 403-2, "Request for Information Concerning the Location of Company-Owned Facilities"

Standard Practice 449-1, "Rules for Working Near Underground Electric Cables"

CES Standard C-T&CS-S0350/GS Standard Practice 460 21-4, "Periodic Leak Surveys of Gas Transmission and Distribution Facilities"

For Further Information:

For additional information or copies of this Guideline please contact the Distribution Department