



***UO Standard S4110***

ISSUING DEPARTMENT: **Gas Distribution**

EFFECTIVE DATE: **10-05**

UO OFFICER: **Senior Director E&P**

REVIEW DATE: **10-10**

CGT OFFICER: **VP - CGT**

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**TITLE: Leak Survey and Repair of Gas Transmission and Distribution Facilities**

**Purpose** This standard establishes uniform minimum requirements for performing gas leak surveys of Pacific Gas and Electric Company (Company) pipelines, station piping, mains, and services in order to detect, report, and repair leaks. It also establishes requirements for developing and maintaining a system of records.

**Recession** This standard supersedes UO Standard D-S0350/S4110, "Leak Survey and Repair of Gas Transmission and Distribution Facilities," issued 5-00.

**Safety** Failure to perform leak survey and leak repair work effectively and efficiently can pose a risk to public safety and property.  
All persons performing work under this standard shall comply with Utility Standard Practice (USP) 22, "Safety and Health Program."

**Implementation Responsibilities** The senior director of Engineering and Planning (E&P) and the vice president of California Gas Transmission (CGT) are responsible for approving, revising, and distributing this standard.

Utility Operations (UO) and CGT directors are responsible for implementing this standard within their respective organizations.

The responsibility for performing gas leak surveys and completing gas leak survey and repair records for the transmission and distribution facilities shall rest with the operating department supervisor who directs the maintenance and operation of the facilities.

The responsibility for scheduling the leak survey and repair work and maintaining the associated records shall rest with the Operations, Maintenance and Construction (OM&C) superintendents in the UO divisions and the district superintendents in CGT or others as designated.

**Compliance** Implementation and effectiveness are measured by the responsible directors/superintendents. In addition, internal Company departments will conduct periodic audits. The California Public Utilities Commission (CPUC) also conducts compliance reviews on the requirements in this standard.



- Policy** Leak surveys shall be conducted at regular intervals throughout the gas transmission and distribution systems. The Company’s policy is to search for, evaluate, and control gas leakage in the interests of safety and efficiency of operation.
- Procedures** The directors of Gas Distribution and Technical Services (GD&TS) and Gas System Maintenance and Technical Support (GSM&TS) are authorized to modify these detailed procedures, forms, or instructions, as needed, or to approve variances from this procedure on an exception basis.
- Reference Documents**
- 49 Code of Federal Regulations 191, Sections 1, 7, 23, and 25
  - 49 Code of Federal Regulations 192, Sections 605, 703, 706, 709, 711, 717, 723, and 935
  - California Public Utilities Commission General Order 112-E, Section 143.1
  - Gas Piping Technology Committee (GPTC) Guide for Gas Transmission and Distribution Piping Systems, ANSI/GPTC Z380.1-2003
  - Code of Safe Practices, Basic Safety Requirements, Sections 1, 2, 3, 13, and 15
  - IGIS User Guide
  - Utility Standard Practice 22, “Safety and Health Program”
  - Utility Operations Standards and Guidelines***
    - D-S0213, “Work Procedures in Confined Spaces”
    - D-S0353/S4112, “Physical Inspection of Pipelines, Mains, and Services”
    - D-S0355/S4413, “CPUC and DOT Reportable Incidents, Curtailments and Conditions and Low Pressure System Problem Reporting”
    - D-S0430, “Maximum Allowable Operating Pressure, Requirements for Distribution Systems and Transmission Gathering Lines”
    - D-S0443, “Natural Gas Distribution Pipe Wrap Removal, Handling, and Disposal Procedure”
    - S4111, “Patrolling Pipelines and Mains”
    - S4129, “Deactivation of Gas Facilities”
    - S4133, “Corrosion Control of Gas Transmission Facilities”
    - S4134, “Selection of Steel Pipeline Repair Methods”
    - S4412, “Protection of Underground Infrastructure”
    - S4450, “Operator Qualification Program”
    - 4711, “Natural Gas Pipe Wrap: Removal, Handling, and Disposal”



- S6434, "Gas Leak and Odor Response"
- S6435, "Establishing and Discontinuing Gas and Electric Service"
- D-G0054, "Leak Survey Training"
- D-G0055, "Leak Survey Auditing"
- D-G0071, "Follow-up Leak Survey Procedures for Inaccessible Locations"

***Gas Standards and Specifications Documents***

- A-34, "Piping Design and Test Requirements"
- A-34.1, "General Requirements for Work Reportable to the CPUC"
- A-34.2, "Low, Semi-High, and High Pressure Upgrading Procedure"
- A-60, "Gas Main Welding Sleeves (Type B Sleeves With Circumferential Welds)"
- A-61, "Low Pressure Gas Main Welding Sleeve Fabricating, Installing, and Purchasing Data"
- A-63, "Gas Main Repair Can"
- A-64, "Gas Line Patches and Half Soles"
- A-66, "Repairing Cast Iron Pipeline Defects"
- A-67, "Copper Pipeline Defects"
- A-68, "Leak Repair Tapes"
- A-69, "Economic Analysis of Gas Leak Recheck, Repair, or Replace Options"
- A-93.1, "Plastic Gas Distribution System Construction and Maintenance"
- B-50, "Bell Joint Leak Clamping Preparation Document"
- B-50.1, "Cast Iron Repair Fittings"
- B-51, "Procedure for Installing Dresser Style 60, 160, and Style 100 Adjustable Bell Joint Leak Clamps"
- B-51.1, "Procedure for Installing Skinner Bell Joint Leak Clamps"
- B-51.2, "Procedure for Installing Bell Joint Leak Seal"
- B-52, "Bell Joint Leak Seal"
- B-52.1, "Bell Joint Anaerobic Sealants"
- B-53, "Skinner Leak Repair Clamps"
- B-53.1, "Repair Clamps"
- B-54, "Compression Couplings"
- B-54.1, "Insulated Line Caps for Cast Iron Mains"



- B-54.2, "Uninsulated Line Caps for Steel Mains"
- B-56, "Installation Instructions for Heat-Shrinkable Gas Repair Sleeves (GRS) on Low-Pressure Mains"
- B-57, "Installing Avonseal I Bell Joint Seals on Cast Iron Mains"
- B-58, "Installation of Avonseal II Low-Pressure Bell Joint Seal"
- B-91.4, "Cast Iron to Steel Insulated Transition Couplings"
- B-91.5, "Cast Iron to Polyethylene Transition Fittings"
- B-91.6, "Service Connection Fittings for Cast Iron"
- B-91.7, "Steel Coupling Clamps"
- M-53, "Portable Combustible Gas Indicator Specification"
- M-53.1, "Portable Combustible Gas Indicator Operations and Maintenance Instructions"
- M-53.2, "Portable Hydrogen Flame Ionization Gas Detector"
- M-53.3, "Verifying the Calibration of Portable Combustible Gas Indicators, Hydrogen Flame Ionization Units, and OMDs"
- M-53.4, "Mobile Leak Survey, Hydrogen Flame Ionization"
- M-53.5, "Mobile Leak Survey - Optical Methane Detection"
- O-16, "Corrosion Control of Gas Facilities"

**Attachments**

- Attachment 1, "Leak Survey and Repair Procedures"
- Attachment 2, Form 62-0612, "Leak Survey Log"
- Attachment 3, "IGIS Survey Leak Log" (Sample)
- Attachment 4, "IGIS Recheck Leak Log" (Sample)
- Attachment 5, Form 62-4060, "Leak Survey Repair, Inspection, and Gas Quarterly Incident Report ("A" Form)"  
Instructions for "A" Form
- Attachment 6, Form 61-0548, "Gas Dig-In Leak Survey Repair, Inspection and Gas Quarterly Incident Report ("A1" Form)  
Instructions for "A1"
- Attachment 7, "CGT Leak Repair/Inspection Form"




**Date Issued/Updated**

*Effective:*           **October 2005**

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Signed,

Signed,

  
Senior Director  
Engineering and Planning

Robert T. Howard  
Vice President  
California Gas Transmission

**For Further Information**

For additional information on this standard, please contact the Gas Engineering and Planning section (223-8180) of the Gas Distribution and Technical Services department. Additional copies of this standard are available in the Technical Information Library of the Company's Intranet at the link below:

[http://www/techlib/default.asp?body=manuals/uo\\_standards/all\\_uo\\_standards.asp](http://www/techlib/default.asp?body=manuals/uo_standards/all_uo_standards.asp)

