



ISSUING DEPARTMENT: **GSM&TS**  
T&D SPONSOR: **VP - E&P**  
CGT SPONSOR: **VP - CGT**

EFFECTIVE DATE: **8-00**  
REVIEW DATE: **8-05**  
PAGE NO.: **1** OF **8**

**TITLE: Patrolling Pipelines and Mains**

**Purpose**

To establish a uniform procedure for patrolling Company facilities for the purpose of:

1. complying with the requirements of 49 CFR 192.605 (b), 49 CFR 192.705 and 49 CFR 192.721.
2. observing conditions on and adjacent to the right-of-way or route that could affect the operation and safety of Company facilities.

This standard supersedes DCS/GTS Standard S0352/S4111, "Patrolling Pipelines and Mains," effective 1-98.

**Implementation Responsibilities**

The vice president 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) managers are responsible for implementing this standard within their respective organizations.

Responsibility for patrolling Company facilities shall rest with the operating department supervisor and the district superintendent who direct the maintenance and operation of these facilities. Performance includes determining specific scope and any special considerations, scheduling and assigning patrolling frequency, reviewing and maintaining patrol records and initiating action to correct conditions found during patrols.

The responsibility for maintaining patrolling records shall rest with the Operations, Maintenance and Construction (OM&C) department and the district superintendents in CGT.

The manager of Gas System Maintenance & Technical Support or Gas Distribution and Technical Services shall update and reissue the procedures and forms attached to this standard.

**Compliance**

Implementation and effectiveness are measured by responsible managers and superintendents. In addition, periodic audits can be conducted by internal Company departments. The CPUC also conducts compliance reviews on the requirements in this standard. Patrol reports revealing the need for corrective actions will be reviewed and acted upon by responsible supervisors.

- Contacts** For additional information, please contact the Gas Engineering and Planning section of the Gas Distribution and Technical Services Department (223-8180 or PT&T 415-973-8180) or the System Integrity Section of GSM&TS Department (583-4312 or 925-974-4312).
- Procedure** See Attachment - Procedures starting on Page 4.
- Definition of Terms**
- Class Location:** The density of buildings as defined in CFR 192.5.
  - CPUC:** California Public Utilities Commission.
  - DOT:** Department of Transportation.
  - Distribution Line:** A pipeline that serves as a common source of supply for more than two service lines.
  - Gathering Line:** A pipeline that transports gas from a current production facility to a transmission line or main. This term shall include collection lines taking gas from wells.
  - Highway:** Any numbered federal, state, or county road (e.g., I-5, State 395, J-4).
  - RSPA:** Research and Special Programs Administration.
  - Transmission Line:** All lines operating over 60 psig that are not gathering lines. This term shall include gas underground storage field injection and withdrawal lines and also lines that transport gas within a storage field.

**Date Issued/Updated**

*Effective:*           **August 2000**

*Review Date:*       **August 2005**

Signed,

Signed,

Shan Bhattacharya  
Vice President  
Engineering & Planning

Michael A. Katz  
Vice President  
California Gas Transmission

**Reference Documents**

- UO Standard S4110, "Leak Survey and Repair of Gas Transmission and Distribution Facilities"
- CGT Standard 4127, "Class Location Determination, Compliance and Maintenance"
- UO Standard S4122, "Gas Pipeline Markers"
- 49 CFR Part 190 and 192.705, 721
- CPUC General Order 112E
- Gas Standards & Specifications 0-16, "Corrosion Control of Gas Facilities"
- Electric Construction Document 032911, "Corrosion Areas - Overhead Lines"

UO Standard

August 1, 2000

**Attachment - Procedures****Facilities to be Patrolled**

1. All gathering lines.
2. All transmission lines operating at or over 20% SMYS.
3. Any distribution lines and transmission lines operating at less than 20% SMYS in places or on structures where anticipated physical movement or external loading could cause leakage or failure.
4. Any other gas pipeline facility requiring special attention as conditions warrant.

**Points to Observe and Report**

1. Landslides or threatened slides.
2. Erosion by streams, wave action, rain, etc.
3. Land subsidence.
4. Construction or maintenance work being performed by others.
5. Encroachment on the right-of-way by buildings or structures or construction of levees, roads, wells, etc., for which no prior permission has been granted by PG&E.
6. Evidence of gas leakage.
7. Needed repairs to Company-owned facilities including fences, pipeline markers, exposed crossings, etc.
8. Needed repairs to highway structures and other facilities not owned by the Company where public safety is a factor.
9. Presence of survey parties or other indications of possible future work that extends 220 yards on either side of the pipeline that might jeopardize PG&E facilities or cause a change in its class location. If this occurs, fill out the "Report of New Construction," Form F4127 (CGT Standard 4127).
10. Any other factors, such as slope erosion, blocked culverts or casing vents and access road washouts, which may affect the operation or safety of the pipeline, main or other Company facilities.
11. Evidence of atmospheric corrosion. Atmospheric corrosion areas are designated in Electric Construction Document 032911. (See the Utility Operations Technical Information Library website.)
12. Access roads occasionally used by others or in areas visible to the general public that may be impassable.
13. Any activity which could create an unsightly condition in aesthetically sensitive areas.
14. Signs of severe seismic displacement (fault zones).

**Patrolling Methods**

1. All patrols may be made on the ground or by aerial observation. Aerial patrols shall be supplemented by ground patrols whenever any of the points listed previously cannot be adequately observed by aerial patrol and as required by paragraph 4 below.
2. Ground patrols may be performed in conjunction with other work as long as the necessary functions of patrolling, including reporting, are accomplished.
3. Routine aerial patrols of transmission and local transmission lines shall be coordinated with the Operations Support section in GSM&TS. Pipelines currently patrolled using aerial patrols are identified in the *Aerial Patrol Manual* (the aerial patrol form used by the pilot is also in this manual). Other special aerial patrols (e.g., helicopter) are coordinated by the local GSM&TS district and UO area OM&C offices.
4. Highway and railroad crossings must be carefully monitored for leak indications. Aerial patrols shall be supplemented by ground patrols. Vents shall be checked using gas detection instruments.

**Periodic Reviews**

1. The roster of lines to be patrolled shall be reviewed and updated annually.
2. Patrol methods for each section of line shall be reviewed and updated annually.
3. The Aerial Patrol Program is administered by the CGT/GSM&TS department. The *Aerial Patrol Manual* shall be reviewed and updated annually.

**Frequency Of Patrolling**

<b>TRANSMISSION PIPELINE FACILITIES ( NOTE 1 )</b>				
	<b>Quarterly</b>	<b>Semi-annually</b>	<b>Annually</b>	<b>Acceptable Methods</b>
<b>All transmission facilities in places or on structures where anticipated physical movement or external loading could cause failure or leakage.</b>	X			Aerial and/or ground <b>(NOTE 2)</b>
<b>Transmission ≥ 20% SMYS and All Gathering</b>				
Class 1, 2			X	Aerial and/or ground <b>(NOTE 2)</b>
Class 3		X		
Class 4	X			
<b>Highway and Railroad Crossings (Transmission ≥ 20% SMYS and All Gathering)</b>				
Class 1, 2		X		Ground with gas detection instrument
Class 3, 4	X			
<b>Transmission ≥ 20% SMYS and All Gathering Transporting Unodorized Gas</b>				
Class 1, 2			X	Aerial and/or ground <b>(NOTE 2)</b>
Class 3		X		
Class 4	X			
<b>Other Transmission &gt; 60 psig and &lt; 20% SMYS (including DFMs)</b>				
Class 1, 2, 3 and 4	As Conditions Warrant <b>(NOTE 3)</b>			Aerial and/or ground <b>(NOTE 2)</b>

<b>DISTRIBUTION MAINS ( ≤ 60 psig ) ( NOTE 1 )</b>				
<b>All distribution mains in places or on structures where anticipated physical movement or external loading could cause failure or leakage and the consequent hazards to public safety.</b>				Aerial and/or ground <b>(NOTE 2)</b>
<b>A. In business districts</b>	X			
<b>B. Outside business districts</b>				
<b>Distribution mains other than required in section A and B above.</b>				
Class 1, 2, 3 and 4	As conditions warrant <b>(NOTE 3)</b>			Aerial and/or ground <b>(NOTE 2)</b>

**Notes to Frequency of Patrolling Tables**

1. Frequencies shown in the tables above for patrolling are the **minimum** required. More frequent patrols may be scheduled by the operating department as local conditions warrant. Facilities shall be patrolled as deemed prudent or necessary during or after heavy rainstorms or extended rainfall, earthquakes and other natural disasters in those areas where damage is likely to occur. Frequencies are defined as follows:

a) Quarterly = At least four times each calendar year, not to exceed 4 ½ months
b) Semi-annually = At least twice each calendar year, not to exceed 7 ½ months
c) Annually = At least once each calendar year, not to exceed 15 months

2. Aerial patrols shall be supplemented by ground patrols if the points listed in the “Points to Observe and Report” section of this standard cannot be adequately observed by aerial patrol.
3. Patrolling frequencies (i.e., daily, weekly, monthly, etc.) must be determined by the severity of the conditions which could cause failure or leakage and the consequent hazards to public safety or the environment (i.e., ground settlement, excessive wheel loading, etc.). The frequency of patrol in these cases is determined by the district superintendent or area OM&C supervisor.

**Patrolling Report Requirements**

1. All patrols shall be documented. The patrol report should detail the date and area patrolled, conditions requiring correction and any work done in conjunction with the patrol. In addition, the reports shall record either the corrective action taken, or a reference to other documents recording the corrective action. Each report shall be signed or initialed by the patroller and by the reviewing supervisor. The required patrol reports are:

EXHIBIT 1: **Patrol Form 62-4648 (F4111a)** is used for ground patrols and supplementary investigations to aerial patrols.

EXHIBIT 2: **Highway and Railroad Form (F4111b)** is used when patrolling pipelines at highways and railroad crossings .

EXHIBIT 3: **Exposed Piping and Spans Form (F4111c)** is used when exposed piping and spans are to be inspected at least annually for pipelines > 60 psig. For distribution mains operating ≤ 60 psig, the exposed piping or spans are inspected at a minimum with the same frequency as other patrols (i.e., leak survey, GS&S O-16, etc.).

EXHIBIT 4: **Landslide Form (F4111d)** is used for pipelines operating > 60 psig which are to be inspected at least quarterly. For distribution mains, operating ≤ 60 psig at a minimum the frequency in sections A and B of the distribution frequency table would apply.

2. Patrol reports for transmission and gathering facilities (at or over 20% SMYS) shall be kept for the life of the facility. Patrol reports for distribution and transmission facilities less than 20% SMYS shall be kept for a minimum of three years.
3. Any conditions found during the patrol that require immediate attention and cannot be corrected by the patrol shall be reported to the responsible supervisor or superintendent as soon as possible.
4. Evidence of construction activity or other signs of possible encroachments on rights-of-way shall be immediately reported to the responsible supervisor or superintendent. They may consult the Land Department for assistance as deemed necessary.
5. A roster of facilities patrolled and those locations requiring special patrols shall be maintained and updated as changes occur.
6. Documentation for periodic reviews shall include the date of the review, the name of the reviewer and title(s) of the material reviewed.