



GS Interim Standard

Issuing Department: GAS SYSTEM TECHNICAL SUPPORT

Effective Date: 9/1/82

Gas Supply Officer: W. R. MAZOTTI

SUBJECT:
ODORIZATION OF NATURAL GAS

GENERAL NOTE:

This Gas Supply Interim Standard replaces existing PG&E Standard Practice 465-1. Minor editing has been done to reflect organizational changes, but the requirements of the original Standard Practice have not been changed. The interim standard will be reviewed and revised in the near future. Comments on or suggested revisions to this interim standard should be sent to the Director, System Standards Management (SYC3), in the Gas System Technical Support Department.

PURPOSE

1. To establish uniform procedures for proper odorization of natural gas.

POLICY

2. All gas in transmission and distribution lines and in gathering lines in Class 3 and 4 locations will be odorized to render it readily detectable at concentrations of one-fifth of the lower explosive limit. Where tests indicate that the level of odorization is not adequate, corrective action shall be taken.

RESPONSIBILITY

3. The responsibility for odorization of natural gas shall rest with the supervisor in any District, Division or Department who directs the maintenance and operation of odorization facilities.

REFERENCES

4. California Public Utilities General Order 112E
DOT 49 CFR Part 192, Paragraph 192.625
Gas Standard & Specification N-10, Domestic Odorizer.

APPLICATION

5. Procedural details for natural gas odorization begin on Page 3 of this Standard.



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PROCEDURAL DETAILS

METHOD OF ODORIZING

6. Odorizing equipment will be installed and maintained such that sufficient odorant is introduced into the gas at all operating flows without wide variations in the concentration of odorant in the gas stream.
 - a. Only gas odorants approved by the Gas System Maintenance (GSM) Department may be used.
 - b. Equipment odorizing 0.2 MMcf per day or more will be checked for proper operation at least once a week.
 - c. All small odorizers including farm tap types will be filled and checked for proper operation at least once a year.
 - d. Dimethyl sulfide (DMS) odorant will be added at a rate of 0.75 pounds per million cubic feet.
 - e. Tertiary Butyl Mercaptan (TBM) and Tetrahydrothiophene (THT) odorant will be added at a rate of 0.25 pounds per million cubic feet.
 - f. Variation of ± 30 percent from nominal rate requires equipment adjustment.

ODORIZATION REPORTS

7. Monthly odorization reports (Form 62-4650, Exhibit A) will be completed for all odorizing stations. This report requires an accurate method of determining total odorant used and total gas treated for the month.

ODOROMETER TESTS

8. Verification of proper levels of odorization requires periodic sampling of odorized gas.
 - a. Odorization stations (above 200 Mcf/day) require a monthly odorometer test downstream of the odorizer to be shown on Form 62-4650. Any station not able to establish odorization rate in lbs./MMScf (amount of odorant used or flow not available) will require weekly tests and are to be reported on the Odor Intensity Report (Form 62-3480), Exhibit B.
 - b. Division and GSM sampling points and testing frequencies are listed in Exhibit C. These are the minimum locations per Division and may vary somewhat from time



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to time but are selected to be representative of the ends of long transmission lines. Odorometer tests will be run at each location and recorded on the Odor Intensity Report.

- c. Odorometer tests will be performed with an odorometer approved by the Gas System Maintenance Department.
- d. Properly trained operators with average sense of smell will perform the tests.
- e. Gas odor should be detectable at 0.6 percent gas in air or less.

PACIFIC GAS AND ELECTRIC COMPANY
 ODOROMETER TEST SCHEDULE FOR
 TRANSMISSION AND DISTRIBUTION SYSTEMS

Periodic sampling with an odorometer will be required at the following points in the system under paragraph 192.625 of 49CFR Part 192:

<u>Division</u>	<u>Location</u>	<u>Frequency</u>
Coast Valleys	Carmel Valley	Weekly
Colgate	Beale Air Force Base	Weekly
De Sabla	Paradise	Weekly
Drum	Auburn	Weekly
	Nevada City	Weekly
East Bay	Danville	Weekly
Humboldt	McKinleyville	Weekly
North Bay	Willits	Weekly
	Ukiah	Weekly
Sacramento	Sacramento	Weekly
	Dixon	Weekly
	Woodland	Weekly
	Rio Vista	Weekly
	Yolo	Weekly
	Isleton	Weekly
San Francisco	San Francisco	Weekly
San Joaquin	Fresno	Weekly
San Jose	Davenport	Weekly
Shasta	Redding	Weekly
Stockton	Oakdale	Weekly
	Martell	Weekly
Gas System	Kettleman, Line 300	3X Week
Maintenance	Kettleman, (Coalinga Withdrawal)	Weekly
	Antioch Terminal, Line 400	3X Week
	Brentwood Terminal, (McDonald Isl - Withdrawal)	Weekly
	Los Medanos Withdrawal	Weekly

Wherever convenient, test should be run at the extreme end of the distribution system in cities indicated. Tests should be recorded on Form 62-3480.