

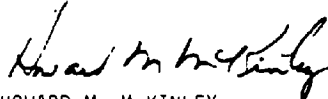
PG&E
FOR INTRA - COMPANY USES


From Division or Department VICE PRESIDENT - GAS OPERATIONS
FILE NO 465
RE LETTER OF
SUBJECT Standard Practice 465-1 Revision
To Division or Department Odorization of Natural Gas

September 1, 1982

DIVISION MANAGERS:
MANAGER, PIPE LINE OPERATIONS:

Attached is a revised copy of Standard Practice 465-1 entitled "Odorization of Natural Gas" for your review, retention and implementation. Please note the important policy changes made in revised paragraphs 6(f) and 8(a) and in new paragraphs 5(c) and 8(b). Exhibits B and C were also added to this Standard Practice as part of this revision.


HOWARD M. MCKINLEY


cc: Manager, Safety, Health & Claims
Gas Operations Managers
Division Gas Superintendents

Attachments

PACIFIC GAS AND ELECTRIC COMPANY
STANDARD PRACTICESTANDARD PRACTICE NO. 465-1EXECUTIVE OFFICE OR DIVISION GAS OPERATIONSPAGE NO. 1 EFFECTIVE 9/1/82ISSUING DEPARTMENT GAS UTILIZATIONREPLACING PAGE NO. 1 EFFECTIVE 6/1/75

SUBJECT

ODORIZATIION OF NATURAL GAS

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 Division or Pipe Line Operations who directs the maintenance and operation of odorization facilities.

REFERENCES

- *4. California Public Utilities General Order 112D or its revision, paragraph 192.625. Gas Standard M-10, Domestic Odorizer.

SUPPLEMENT

5. Procedural details for natural gas odorization appear in the supplement to this Standard Practice.

APPROVED

HOWARD M. MCKINLEY
Vice President - Gas Operations

DISTRIBUTION

Division Managers
Manager, Safety, Health and Claims Department
Director, Procedures Analysis
Manager, Pipe Line Operations
Division Gas Superintendents
Division Administrative Analyst or Equal

Additional copies of this Standard Practice may be obtained from Gas Operations,
77 Beale Street, San Francisco, PGandE Extension 1604.

- * Paragraph Revised
- ** Paragraph Added

(SEE OVER)

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 Utilization 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 PLO sampling points and testing frequencies are listed on Exhibit C. These are the minimum locations per Division and may vary somewhat from time 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 Utilization 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.

*Revised

**Added

MONTHLY ODORIZATION REPORT

Exhibit A

PACIFIC GAS AND ELECTRIC COMPANY

DAILY REPORT ENDING _____ M.

DATE	ODORANT STOCK STATEMENT - GALS.					ODORANT INJECTION STATEMENT - GALS.					GAS TREATED 11 Millions of Cubic Feet	ODORIZING RATE	
	1 Storage Tanks Last Report	2 Received During Period	3 TOTAL 1 + 2	4 Storage Tanks This Report	5 DIFF 3 - 4	6 Press Tanks Last Report	7 Added From Storage	8 TOTAL 6 + 7	9 Press Tanks This Report	10 Amount Injected 8 - 9		12 Gals / Millions 10	13 Lbs / Million (10)(W)
												11	11
1													
2													
3													
4													
5													
6													
7													
8													
9													
10													
11													
12													
13													
14													
15													
16													
17													
18													
19													
20													
21													
22													
23													
24													
25													
26													
27													
28													
29													
30													
31													

EXAMPLE

MONTHLY STATEMENT TO BE FILLED IN AT ALL STATIONS *QUANTITIES IN COLUMN 7 TO BE MEASURED ON PRESSURE TANK

MONTHLY STATEMENT

--	--	--	--	--	--	--	--	--	--	--	--	--	--

REPORT ODORANTS IN LBS./MILLION

NAME OF ODORANT _____
REMARKS _____

** (W) for DMS is 7.1, (W) for TBM is 6.8, (W) for THT is 8.3

LINE _____ STATION _____ MONTHLY REPORT ENDING _____
Month Date Year

SIGNED _____

THIS REPORT TO BE MADE IN DUPLICATE FORWARD ORIGINAL TO GAS UTILIZATION DEPT SAN FRANCISCO

**ODOR INTENSITY REPORT
PERCENT GAS IN AIR**

DIVISION _____ MONTH OF _____ 19__

DAY	LOCATION				REMARKS	OPERATOR
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						
31						

EXAMPLE

If odorometer reading is over 1.0% gas in air, a confirmation test with a different operator will be run and the Division Superintendent notified immediately.

Make out in duplicate, mail original to Gas Utilization Department.

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 G.O. 112C:

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