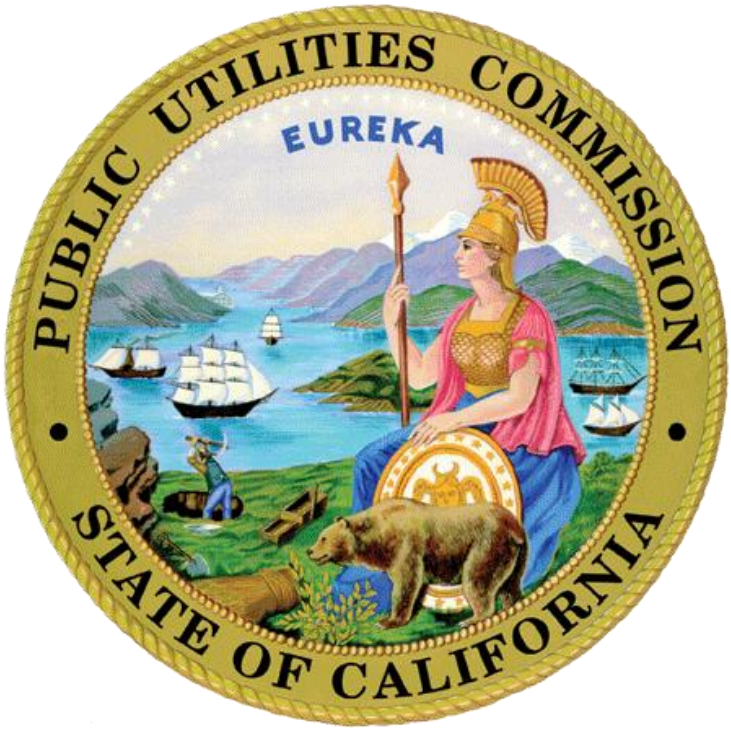
California Public Utilities Commission



Guidelines for Preparing Operation and Maintenance Plan, Emergency Plan, Operator Qualification Program, and Distribution Integrity Management Program for Mobile Home Park Gas Systems

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INTRODUCTION

The purpose of these guidelines is to help the operators of natural gas distribution systems within mobile-home parks (Operator) to establish written plans that are in compliance with the requirements of Title 49, Code of Federal Regulation (49 CFR) Section 192.603: Operation and Maintenance Plan, Section 192.615: Emergency Plan, Section 192.805: Operator Qualification Program, and Section 192.1015: Distribution Integrity Management Program, of the Pipeline Safety Regulations. The numbers appearing in the parenthesis throughout these guidelines represent the applicable code number in the *Pipeline Safety Regulations, Public Utilities Code or General Order 112-E*. For example, the numbers [49 CFR §192.605(a)] refer to the Pipeline Safety Regulations - Title 49 of the Code of Federal Regulations (CFR), Section 192.605(a).

The information contained in this booklet was prepared by the staff of the Gas Safety and Reliability Branch (GSRB) of the California Public Utilities Commission as an aid to operators of small natural gas systems to prepare written Operations and Maintenance Plan, Emergency Plan, Operator Qualification Program, and Distribution Integrity Management Program.

This is **not** necessarily a complete or definitive outline. Additional information may be required by federal or state regulations. Please refer to Title 49 CFR Parts 190, 191, 192, 193, and 199, Public Utilities Code, and California Public Utilities Commission General Order 112-E for the complete regulations.

This document will be updated as necessary.

Revised in April of 2014

OPERATION AND MAINTENANCE PLAN GUIDELINES

Your Operation and Maintenance Plan should have instructions for employees performing normal operations and making repairs. **Include instructions and record keeping procedures in your Operation and Maintenance Manual for topics A-K described below.**

A. Normal Operations and Repairs

Identify employee(s) who have a working knowledge of the system and identify person(s) responsible for maintaining the system and correcting any unsafe condition. [49 CFR §192.605(a)].

B. Line Markers

NOTE: This section is not applicable to gas systems in most parks. It only applies to systems that have above ground distribution **mains. Distribution mains** are pipelines that are a common source of gas supply for an individual customer, or two adjacent or adjoining residential customers. Line markers are **not** necessary for above ground **services.**

A line marker is a warning sign for the public. It must be placed and maintained along each section of a **main** that is located above ground and accessible to the public. The line marker must contain the word "Warning", "Caution", or "Danger" followed by the words "Gas pipeline". Additional specifications for a line marker are listed in 49 CFR §192.707.

C. Patrolling

Patrolling is a routine inspection of the distribution system. It can be done by walking along the pipeline and observing factors affecting safety of operation (e.g. missing or ineffective meter supports, excessive load on any pipeline component, use of the gas piping for electrical grounding, obstructions in regulator vent, etc.). The gas distribution mains in places or structures where anticipated physical movement or external loading could cause failure or leakage, must be patrolled at least two times each calendar year, but at intervals not exceeding 7-1/2 months. Records of patrolling must be maintained [49 CFR §192.721].

D. Leak Surveys

A gas leak survey of the distribution system must be made by a qualified individual with "leak detector equipment" as frequently as necessary, but at intervals not exceeding 5 years, not to exceed 63 months [49 CFR §192.723(b)(2)]. The leak survey equipment used must be able to detect possible underground leaks.

NOTE: If leak surveys are performed in lieu of an electrical survey for steel systems without cathodic protection, the interval for gas leak surveys must not exceed 3 years [49 CFR §192.465(e)].

Annual leak surveys are recommended when any of the following conditions exist:

1. The system is constructed of materials that have a higher tendency to leak. Examples are unprotected bare steel, PVC plastic pipe, and cast iron.
2. The pipeline is over twenty years old and a corrosive soil environment exists.
3. There is an excessive leak history, the causes of which have not been addressed.
4. Portions of the pipeline are located under mobilehomes.

The operator must maintain gas leak survey records, related to 49 CFR §192.465(e), for the life of the system.

E. Leak Repairs

Provisions must be made for repair of hazardous or potentially hazardous leaks. The operator must maintain all such repair records [49 CFR §192.703]. Leak repair records should include the following information:

1. Probable cause of the gas leak (corrosion, outside force, etc.)
2. Method of repair (replaced pipe, clamped, etc.)
3. Type of materials used in the repair (stainless steel clamp, steel pipe, etc.)
4. The date of the repair and the person who made the repair

F. Abandonment or Discontinued Service Facilities

Abandonment of a pipeline requires it to be cut at the main (1 foot stub), purged if necessary, and capped at both ends. This renders the line non-jurisdictional.

Whenever service to a customer is discontinued, one of the following must be done [49 CFR §192.727(d)]:

1. Lock the valve in closed position.
2. Install a device or fitting in the service line or meter assembly to prevent the flow of gas.
3. Physically disconnect customer piping and seal open ends.

G. Prevention of Accidental Ignition

Provisions must be made to prevent the accidental ignition of gas when a potentially hazardous amount of gas may be released, such as when maintenance is being performed or repairs are made [49 CFR §192.751]. The following provisions should be included:

1. When a hazardous amount of gas is vented, each potential source of ignition must be removed and a fire extinguisher provided.
2. No welding may be performed on pipe components that contain a combustible mixture of gas and air in the work area.

H. Key Valve Maintenance

A key valve is a valve that can isolate a section of the system or shut down service to the entire system in an emergency situation. The operator must determine the key valve(s) and identify it/them on the system map. Key valve(s) must be checked and maintained to keep it/them operable at least once each calendar year, but at intervals not exceeding 15 months. Key valve maintenance records must be maintained [49 CFR §192.747].

I. Measuring the Odorization of Gas

The operator must conduct a periodic sampling of the gas to assure the proper concentration of odorant. This may be done by a performing a "sniff test" at a location where gas can be safely accessed (e.g. during a meter change-out, at a stove top, etc.) without the danger of gas accumulation or ignition. The test should preferably be performed at a location farthest from the master meter. The frequency of the sampling is to be determined by the operator (Note: GSRB highly suggests this activity be performed at least every six months). Records must be kept and maintained [49 CFR §192.625].

J. Corrosion Control Monitoring

For metallic pipes, the operator must maintain records or maps to show the location of cathodically protected piping and related facilities [49 CFR §192.491(a)].
(*Note: Plastic pipe does not require cathodic protection.)*

The cathodic protection system must be tested at least once each calendar year, with intervals not exceeding 15 months, to assure an adequate level of protection. For impressed systems, the rectifier must also be inspected six times annually with intervals not exceeding 2-1/2 months [49 CFR §192.465(a)].

If any part of the pipeline system has buried unprotected metallic pipe installed before August 1, 1971, the operator must evaluate the unprotected pipeline at intervals not exceeding 3 years to determine the necessity of installing cathodic protection. For distribution systems, especially those with pipelines in a common trench with other facilities, electrical surveys are often impractical and can be cost prohibitive. In such cases, operators can use corrosion, leak repair, and/or gas leak survey records to perform the 3-year evaluation of their system [49 CFR §192.465(e)].

Corrosion control monitoring also entails performing the following two items:

1. Examining underground pipe when exposed. Whenever buried pipe is exposed, the operator must examine the exposed portion for evidence of corrosion. A record of this examination must be maintained [49 CFR §192.459].
2. Checking for atmospheric corrosion on aboveground pipe. **All aboveground pipes must be inspected for atmospheric corrosion once every three years**. A record of this examination and corrective work must be maintained [49 CFR §192.481].

The operator must keep records of each test, survey, or inspection, in sufficient detail to demonstrate adequacy of protection [49 CFR §192.491].

K. Inspection of Regulating Stations

Generally, master-metered gas systems with distribution mains that carry gas to customers at pressure close to that provided by the local gas utility through the master-meter (i.e. ¼ psig systems), are not considered as having regulating stations. Gas systems with distribution mains serving customers through individual service lines terminating at individual service regulators are also not considered as having regulating stations

NOTE: ONLY PRESSURE REGULATORS OR RELIEF DEVICES INSTALLED ON DISTRIBUTION MAINS ARE CONSIDERED REGULATING STATIONS. THESE REGULATORS ARE USED TO LOWER OR CONTROL THE GAS PRESSURE FROM THE MAIN TO SERVE TWO OR MORE SERVICES LOCATED DOWNSTREAM OF THE REGULATOR.

If a master meter system has one or more regulating station(s) downstream of the master-meter, the operations and maintenance plan must include provisions for their inspection and testing. The regulators and relief devices must be inspected once a year, not to exceed 15 months [49 CFR §192.739 and §192.743].

The pressure regulating station must be inspected to determine that they are:

- In good mechanical condition;
- Adequate in capacity and reliability of operation;
- Set to function at the correct pressure;
- Properly installed and protected from vehicular traffic, dirt, liquids, icing, and other conditions that might prevent proper operation

The operations and maintenance must include procedures for the inspection of relief devices. The operator must ensure that the relief devices have sufficient capacity to protect the facilities to which they are connected. This can be done by testing the relief device(s) in place or by review and calculations [49 CFR §192.743].

Every year, the operator must verify that there had been no changes to upstream regulators, such as different pressure, orifice, or type of regulator. If there were no changes, the operator only needs to review and initial the capacity calculation. If a change is made, new capacity calculations for the relief valve must be made and kept on file.

NOTE: ONLY RELIEF VALVES INSTALLED ON DISTRIBUTION MAINS ARE SUBJECT TO REQUIREMENTS OF SECTION K. THESE REQUIREMENTS DO NOT APPLY TO INTERNAL RELIEF VALVES ON SERVICE REGULATORS.

Anyone performing inspections related to 49 CFR §192.739 and §192.743 must be operator qualified; therefore, the operator should seek technical assistance from qualified individuals (e.g. contractors) in order to comply with this requirement, especially if regulator disassembly or station redesign is necessary. Any documentation provided by manufactures related to each type of regulator used on the system must be retained as long as the equipment is in use.

THE OPERATOR IS CAUTIONED NOT TO OPERATE, MAINTAIN, OR DISASSEMBLE REGULATORS OR RELIEF VALVES WITHOUT BEING TRAINED ON SUCH EQUIPMENT BY THE REGULATOR MANUFACTURER OR A QUALIFIED INDEPENDENT CONSULTANT.

A record of this annual inspection must be kept. A sample form is provided below.

REGULATOR INSPECTION REPORT

Name of Mobilehome Park: _____

Location of Regulating Station: _____

Regulator Information

Make: _____ **Type:** _____

Size: _____ **Orifice Size:** _____

Pressure Rating: Inlet: _____ **Outlet:** _____

M.A.O.P. of System to which it is connected: _____

Operating Pressure: Inlet: _____ **Outlet:** _____

Lock Up Pressure: _____

Monitoring Regulator or Relief Setting: _____

Was the Regulator Stroked (to fully open)? Yes No

General Condition of the Station

Atmospheric Corrosion: Yes No

Support Piping Rigid: Yes No

Station Guards: Yes No

Area Clean of Weeds and Grass: Yes No

Capacity at Inlet and Outlet pressure: _____

Corrections Made: _____

_____

Remarks: _____

_____

_____

Inspector: _____

Signature: _____ **Date:** _____

Record Keeping Requirements

Below is a list of items for which records must be maintained:

Maintenance Item:	Maximum Maintenance Interval:
1. Leak survey	**Once every 5 years [1]**
2. Patrolling	**Two times a year**
3. Key valve maintenance	**Once a year**
4. Odorant check	**"Periodic"[2]**
5. Cathodic protection (CP) system evaluation (pipe to soil potential)	**Once a year**
6. CP rectifier voltage and amperage readings (for impressed systems only)	**Six times a year**
7. Leak repair reports (for underground leaks)	**As necessary**
8. Examination of exposed buried pipe	**As necessary**
9. Atmospheric corrosion	**Once every three years**
10. Regulating station inspection and testing	**Once a year**
11. O&M plan review	**Once a year**

[1] Note: For non-cathodically protected steel pipelines the interval is once every 3 years if a leak survey is used in lieu of an electrical survey. If, however, one of the following conditions exist, the **recommended** interval is once every year:

a. The system is constructed of materials which have a tendency to leak, such as unprotected bare steel, PVC, and cast iron.
b. The pipeline is over twenty years old and a corrosive soil environment exists.
c. There is an excessive leak history, and the causes of which have not been addressed.
d. Portions of the pipeline are located under mobilehomes.

[2] The operator must determine the interval at which odorant checks will be performed. This interval should be stated in the O&M plan. (Note: GSRB highly suggests it is prudent to perform this activity at least every six months).

Sample Maintenance Schedule

NOTE: Clear cells indicate month maintenance is due. Write the date and personnel's initials on the appropriate cells when maintenance is performed.

YEAR:	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Leak Survey												
Patrolling												
Key Valve Maintenance												
Odorant Check												
Cathodic Protection (CP) Evaluation												
CP – Rectifier Readings												
Atmospheric Corrosion												
Regulating Station inspection and testing												
O&M and Emergency Plan Review												

EMERGENCY PLAN GUIDELINES

The operator's written emergency plan must contain, at a minimum, the following items [49 CFR §192.615]:

A. Emergency Notification List

The telephone number of the pipeline operator, fire department, local serving gas utility (i.e., SoCalGas, PG&E, etc.), and anyone else whose service may be necessary in an emergency must be posted in a public area within the mobilehome park [Public Utilities Code 4361(a)]. A sample *Emergency Notification List* is included with these guidelines.

For better coordination of emergency procedures, it is recommended that you instruct all residents to notify the office immediately in the event of an emergency (earthquake, fire, or gas leak), even if they have called an emergency service.

B. Map of the Gas Distribution System

A map of the gas pipeline, including the location of the master meter(s), gas main(s), service line(s), and key valve(s) must be included in the Emergency Plan [Public Utilities Code 4354.5(a)(1)]. Cathodic protection facilities may also be indicated on the map.

C. Emergency Equipment

Proper equipment, in particular, wrench(s) or valve key(s) of sufficient size to operate key valve(s), must be readily available in the event of an emergency. The equipment and its location must be specified [49 CFR §192.615(a)(4)].

D. Emergency Response Procedures

At a minimum, written procedures for prompt and effective response to the following emergencies must be provided [49 CFR §192.615(a)(3)]:

1. Potentially hazardous gas leaks
2. Possible Natural Disasters such as earthquakes, floods, wildfires, etc.
   (Note: Provide procedures only for disasters that are applicable to your system.)
3. Fires

It is **suggested** that the operator have an evacuation plan that addresses the following items:

1. A safe evacuation location identified on a map, with evacuation routes clearly shown.
2. The method of informing residents in the event of an evacuation and methods of securing their homes for various types of disasters.
3. Residents with special needs are identified and are accounted for in the evacuation procedure.
4. A method of verifying that all residents have secured and evacuated their homes is provided.

E. Telephonic Incident Reporting Procedures

Should a reportable incident occur, an operator must call and report the incident, at the earliest practical moment, to the U.S. Department of Transportation (800) 424-8802, and the California Public Utilities Commission (800) 235-1076. A reportable incident is an event involving **release of gas from a pipeline and** any of the following:

1. Death
2. Injury requiring in-patient hospitalization
3. Estimated property damage of $50,000 or more, or
4. Media attention

Any event that is significant in the judgment of the operator, even though it may not meet the aforementioned criteria, may be reported [49 CFR §191.3 & §191.5].

F. Restoration of Gas Service

Should gas service to resident(s) need to be restored due to an outage, qualified person(s) must follow the proper procedures to restore the service. A relighting procedure and qualified person(s) must be specified [49 CFR §192.615(a)(9)]. It is suggested that the operator check with the local utility to determine what services they assist with and their associated costs.

G. Training

Appropriate personnel must be trained to assure that they know the emergency procedures outlined in the emergency plan [49 CFR §192.615(b)(2)]. Maintain training records.

H. Public Awareness Program

Each operator of a master-meter gas system must develop and implement a written procedure to provide its customers, and persons controlling any property, on which the system is located, which is not controlled by the operator, with a Public Awareness Message (PAM) twice annually (every six months). The operator shall maintain records indicating how, when, and to whom the PAM was distributed. The public awareness message must include [49 CFR §192.616(j)]:

(1) A description of the purpose and reliability of the pipeline;

(2) An overview of the hazards of the pipeline and prevention measures used;

(3) Information about damage prevention;

(4) How to recognize and respond to a leak; and

(5) How to get additional information.

Examples of Public Awareness Messages are provided below. Please note that the examples are merely a guideline. It is the pipeline operator's responsibility to ensure that all requirements are properly addressed in the PAM.

PUBLIC AWARENESS MESSAGE EXAMPLES	
1. A description of the purpose and reliability of the pipeline	
Requirement	Example
Describe the purpose of the gas pipeline system.	The natural gas pipeline system in the "Name of Mobilehome Park" is owned, operated and/or maintained by the "Name of the operator of the gas system." The pipeline system is designed to distribute gas to the residents, which is commonly used for heating and cooking. Note: If there are public facilities such as a pool or laundry room in the mobilehome park, the PAM should also identify these and other facilities that utilize the gas pipeline system.
Describe the reliability of the gas pipeline.	The gas pipeline system is operated and maintained by qualified individuals in accordance with the Operator's Operations and Maintenance Plan, which contains procedures for safely operating, maintaining, and monitoring the system. The California Public Utilities Commission inspects the gas pipeline system for compliance with the Federal rules and regulations.
2. An overview of the hazards of the pipeline and prevention measures used	
Requirement	Example
Describe the hazards associated with the pipeline.	Gas can leak from pipeline facilities damaged due to corrosion, outside force, environmental factors, natural events, or equipment failure, etc. Because natural gas is a flammable commodity, gas leaks, under certain circumstances, can be dangerous.
Describe preventive measures used.	The gas system is leak surveyed by qualified individuals on a frequency of "operator's frequency" years. By law, under no circumstance can we exceed a period of 5 years without performing a leak survey. We are required to immediately repair all hazardous leaks, and schedule for repair, or monitor, all leaks which are non-hazardous. Leaks in confined spaces, and leaks immediately near sources of ignition are generally classified as hazardous leaks. All valves necessary to isolate the system, or parts of the system, are inspected annually to ensure that they are operable. The gas system is patrolled on a routine basis to ensure that hazardous conditions such as atmospheric corrosion, improper care of discontinued services and customer lines, inadequate support of meters and pipeline components, etc., are noted and corrected. Note: If the gas pipeline system is cathodically protected, briefly explain that the gas system has a cathodic protection system that protects the pipeline from corroding and that this system is monitored at least annually to ensure its effectiveness. Residents should be instructed to keep all metal objects that can short the cathodic protection system (i.e., chains, grounding connections, etc.) away from the meter-sets.
3. Information about damage prevention	
Requirement	Example
Describe how the pipeline can be damaged.	The gas pipeline system is susceptible to damage due to outside forces such as those caused by excavation, vehicular traffic, or excessive loads placed on meter set assemblies. In addition, anything that obstructs access to main valves and service valves on meter set assemblies could result in severe consequences in the event of an emergency.

4. How to recognize and respond to a leak	
Requirement	Example
List ways to recognize gas leaks.	Odor: Natural gas is colorless, odorless, tasteless and non-toxic. An additive (Mercaptan) is added by the gas company to give the gas a distinctive odor (similar to rotting eggs or sulfur) so any leaking gas can be readily detected. Vegetation: Natural gas leaking from an underground pipeline can destroy vegetation by starving the roots of air and water. An unusual dry patch of vegetation, within an otherwise green area, could indicate a below ground gas leak. Sound: A blowing or hissing sound could indicate the presence of a gas leak. Bubbling Water: Gas leaks on underground pipelines in flooded areas may cause bubbles in the water as the gas rises to the surface. Fungus-like growth: Gas leaks in valve boxes, manholes, etc., may develop a fungus-like growth that is generally white in color.
Describe how to respond to a gas leak.	Do not light items such as matches, cigarettes, or any other device that may generate a spark and ignite gas in a gaseous environment. Devices such as electrical switches, telephones (cell and land line phones), doorbells, automobiles, other engines, static electricity, etc. can all generate a spark capable of ignition. Extinguish all flames, evacuate occupants of the structure, and possible neighboring structures, to a safe distance, and turn off the gas at the service valve, if feasible. Venting of the gas should consider gas concentration and the need to terminate electric, telephone, and other sources of ignition from their respective service connection points outside the structure. To report a gas leak, call (Emergency Phone Number) and inform Operator personnel of the situation and the location of the leak. Do not make the phone call from the area where the gas leak is present. **For gas emergencies, an emergency telephone number should be provided where operator personnel can be reached 24 hours a day.**
5. How to get additional information	
Requirement	Example
Provide the phone number for the operator, and other potential resources, where customers can learn more about gas safety.	For additional information, contact the Operator of the gas system at "phone number." Also, visit the websites of the U. S. Department of Transportation, Pipeline and Hazardous Materials Safety Administration (http://www.phmsa.dot.gov) or the California Public Utilities Commission (http://www.cpuc.ca.gov/puc/).

I. Accident Investigation

Each operator needs procedures for an investigation of all accidents and failures for the purpose of determining the cause of the failure and minimizing the possibility of reoccurrence [49 CFR §192.617].

EMERGENCY NOTIFICATION LIST

Name of Mobilehome Park: _____

Manager _____ Telephone _____

Asst. Manager _____ Telephone _____

Emergency Numbers

Fire Department _____

Police/Sheriff Department _____

Ambulance _____

Gas Company _____

Electric Company _____

Phone Company _____

Incident Reporting:
California Public Utilities Commission (800) 235-1076
U.S. Department of Transportation (800) 424-8802

Nearest fire alarm box _____

Nearest Public Telephone _____

Nearest Hospital:

Address _____

Phone _____

(FORM MHP-3) REV. 3/2012

CALIFORNIA PUBLIC UTILITIES COMMISSION

CONSUMER PROTECTION AND SAFETY DIVISION
GAS SAFETY AND RELIABILITY BRANCH

GAS INCIDENT REPORTING PROCEDURE FOR JURISDICTIONAL MOBILE HOME PARKS

Pursuant to General Order No. 112-E, any jurisdictional operator of a master-metered natural gas distribution system is required to give notice of certain incidents to the federal government as well as to the California Public Utilities Commission (CPUC).

At the earliest practicable moment, **day** or **night,** following discovery of any of the incidents listed below, a telephone report of the incident must be made to the CPUC by calling **1-800-235-1076**, and to the U.S. Department of Transportation at **1-800-424-8802.** If, when calling the CPUC, there is no response, leave a message on the recorder**.**

Incidents requiring a telephone report.

1. An event that involves a release of natural gas and results in a death, or personal injury necessitating in-patient hospitalization.
2. An event that involves a release of natural gas and results in estimated property damage, including cost of gas lost, of $50,000 or more.
3. Incidents which have either attracted public attention or have been given significant news media coverage, that are suspected to involve natural gas, which occur in the vicinity of the operator's facilities; regardless of whether or not the operator's facilities are involved.

Information that must be provided when reporting an incident.

1. Names of operator and person making the report along with telephone numbers.
2. The location of the incident.
3. The time of the incident.
4. The number of fatalities and personal injuries, if any.
5. A description of the incident including all significant facts that are known by the operator that are relevant to the cause of the incident and extent of the damages.

NOTE: Failure to provide a notice of an incident, in accordance with General Order No. 112-E, may subject the owner /operator to regulatory action and for penalties.

OPERATOR QUALIFICATION PROGRAM GUIDELINES

Title 49 CFR Part 192 Subpart N- Qualification of Pipeline Personnel became effective on October 26, 1999. It requires pipeline operators to develop and maintain a written qualification program for individuals performing covered tasks on pipeline facilities. The intent of this qualification rule is to ensure a qualified work force and to reduce the probability and consequence of incidents caused by human error.

What it requires

The regulations require that you prepare and follow a **written** OQ program that at a minimum includes the following eight provisions:

1. Identify covered tasks (operation and maintenance activities affecting the integrity of the pipeline and required by the safety code);

   "**Covered tasks**" are those tasks performed on the pipeline that meet the four-part test specified on 49 CFR §192.801(b). Covered tasks include items such as:
   - Leakage survey - Use of proper techniques and equipment.
   - Regulator station maintenance
   - Patrolling and surveillance procedures.
   - Cathodic protection monitoring or maintenance (Note: The corrosion control procedures required by §192.605(b)(2), including those for the design, installation, operation, and maintenance of cathodic protection systems, must be carried out by, or under the direction of, a person qualified in pipeline corrosion control methods.)
   - Odorant level testing.
   - Valve testing and maintenance.
   - Pipeline mapping/locating techniques.
   - Responding to unsafe conditions and using the Emergency Plan
   - Preparing the Operation & Maintenance plan or Operator Qualification criterion
   - Meter change-out and/or service regulator work
2. Evaluate individuals performing covered tasks to prove that they are qualified. This includes the operators own employees as well as any employees working for a contractor, who perform a covered task on the operator's system;

   Evaluating means testing a person through written tests, oral exams, observing employees while performing the task on the job, in a classroom, or simulated setting, or any other documented method that can prove the individual possesses the necessary knowledge, skills and abilities to perform the covered task and recognize and react to "Abnormal Operating Conditions (AOCs) (Note: Observation of on-the-job performance may not be used as the sole method of evaluation).

   An operator may review and accept a contractor's OQ Program for evaluating the contractor's employees performing any task which is a covered task within the operator's OQ Program. However, the review of the contractor OQ Program must be performed **before** the contractor's employee begins the task. Records confirming the qualification(s) of the contractor employee(s) must also be obtained and reviewed by the operator **before** the particular employee(s) begin(s) the covered task on the operator's system.

"Abnormal operating condition (AOC)" means a condition that may indicate a malfunction of a component or deviation from normal operations that may:

a. Indicate a condition exceeding design limits; or

b. Result in a hazard(s) to persons, property, or the environment.

For example, a leaking gas pipe is a malfunction of the pipe (it is not supposed to leak) and can result in a hazard to persons and property.

3. Allow individuals who are not qualified to perform a covered task if directed and observed by an individual who is qualified;

   The written OQ program must spell out the conditions under which individuals who have not met the qualifications to perform a covered task may perform task under direct observation and supervision of a qualified individual. Supervising from a remote location is NOT acceptable.

4. Evaluate an individual if there is reason to believe that the individual's performance of a covered task contributed to an incident;

   The written OQ program must specify that the operator will re-evaluate individuals whose performance of a covered task may have contributed to an accident. Additionally, the OQ program must specify the process used to re-evaluate the individual.

5. Evaluate an individual if there is reason to believe that the individual is no longer qualified to perform a covered task;

   The written OQ program must include provisions on how to re-evaluate individuals for whom there are some reasons to believe that they are no longer qualified to perform a covered task. The plan should include some guidance for supervisors to recognize and react to behavior that would trigger these provisions. These could include observation of individuals not following procedures or those with injury/illness that reduces motor skills.

6. Communicate changes that affect covered tasks to individuals performing those covered tasks;

   The OQ program must specify how changes to plans, policies, regulations, or equipment are communicated to individuals performing covered tasks.

7. Establish re-evaluation intervals;

   Individuals performing covered tasks must be periodically re-evaluated. Re-evaluation intervals should be based on factors such as:

   - How frequently is the covered task performed? More frequent performance may justify longer re-evaluation intervals;
   - How complex is the covered task? More complex tasks may require shorter reevaluation intervals; and
   - What might the consequences be if the task is performed improperly? What is the worst that could happen if the covered task is not performed correctly, with "catastrophe" justifying shorter re-evaluation intervals and "nothing" justifying longer intervals?

   Re-evaluation intervals must be clearly identified in the OQ program. Re-evaluation method(s) need not be the same as the initial qualification.

8. Describe how training will be used in the OQ program where appropriate (new hires, refresher training for existing employees who transfer to new jobs or fail revaluations, etc.).

In addition to these minimum requirements, the written OQ program should:

1. Name the person who will be responsible for ensuring that the requirements of the plan are carried out;

2. Identify records necessary to carry out the program and where those records will be kept.

What types of records are required

An operator must maintain records to prove that the written OQ program is being followed. For each individual who performs a covered task on your system, an operator must be able to produce a record of the date the individual passed each evaluation required for each covered task the individual performs, the tasks for which the individual is qualified and the method used to qualify the individual. Records of re-evaluations for cause, post incident and when required by re-evaluation intervals must also be maintained.

How to get more information

A guideline for preparing an Operator Qualification Program for smaller distribution systems is available on the Department of Transportation website:
http://www.phmsa.dot.gov/pipeline/tq

The Gas Safety and Reliability Branch will continue to include Operator Qualification requirements in its workshops held in conjunction with the U.S. Department of Transportation. If you have questions, you may contact the Gas Safety and Reliability Branch by mail at:

California Public Utilities Commission
505 Van Ness Avenue, Room 2-D
San Francisco, CA 94102
Attention: Mobilehome Park - Gas Safety Program

DISTRIBUTION INTEGRITY MANAGEMENT PROGRAM GUIDELINES

Pursuant to Title 49, Code of Federal Regulations (CFR) Part 192, § 192.1015, no later than August 2, 2011, each California operator of a master-metered natural gas distribution system located in a mobile-home park, or a jurisdictional propane system must develop and implement a Distribution Integrity Management ("DIMP") Program that includes a written plan (Plan).

To assist you in developing your written Plan, the Gas Safety and Reliability Branch of the Commission has prepared the following guidelines that emphasize the required elements which, at a minimum, must be addressed in your Plan. The examples provided herein should **not** be interpreted as being the only information that must be addressed in your Plan. It is the responsibility of the pipeline owner/operator to ensure that each element, to the operation of a particular master-metered gas or propane distribution system, is properly addressed in the Plan.

REQUIRED ELEMENTS OF AN INTEGRITY MANAGEMENT PLAN

1. **Knowledge:** The operator must demonstrate knowledge of the pipeline system, which, to the extent known when the Plan is first developed, should include the approximate location, type of material (bare or coated steel, polyethylene (PE), polyvinyl chloride (PVC), etc.), and size (length and diameter) of the pipeline(s) along with the type of equipment on the system. It is essential that the operator provide the following information in the Plan:

    a. An explanation on the methods the operator will use to demonstrate knowledge of the pipeline system. For example, the plan needs to specify how information regarding the size, material, and location were obtained, including electronic records, photos, drawings, maps, and other methods.

    b. For any missing information, the Plan needs to identify the missing information. Indicate to the extent possible the portions of the pipeline system (length, locations) with missing information.

    c. An explanation on the methods the operator will use to identify and gather additional data (i.e., to assist with incomplete or missing records) to fill gaps in the Plan when it is first developed. The Plan needs to provide a method for gaining knowledge of the system over time through normal activities conducted on the pipeline system. For example, if a section of unknown buried pipeline is exposed, pipeline data (i.e., size, material type, coating condition, etc.) must be documented and maintained for as long as the pipeline system remains in operation. (Photograph/video documentation can be of great assistance.)

    d. The Plan must also include provisions for recording new pipeline installations, including material, location, and pipeline dimensions (i.e., length, diameter, material type, manufacturer, etc.).

    e. The operator must update the Plan and the pipeline system map as more information becomes available.

2. **Identify threats**: A threat is a condition that could result in the damage or loss of integrity of the pipeline system if not properly mitigated or prevented. The operator must consider, at a minimum, the following categories of threats (existing and potential), as defined in Table 1 with examples of related concerns:

THREATS	CONCERNS
Corrosion (Internal, external, and atmospheric)	Does the system include steel piping that is not protected from corrosion by cathodic protection (CP)?
	Has the system experienced leaks from corroded pipe?
	Does the system have isolated metallic sections (i.e., valves or risers) that do not have CP?
	Is the system located in an environment prone to atmospheric corrosion?
Natural Forces	Are portions of the system highly susceptible to earthquakes / erosion?
	Are portions of the system susceptible to snow or ice loading?
	Are portions of the system located in areas that are subject to flooding?
	Are there large trees, near the pipeline system, which have roots that could damage the system?
Excavation Damage	Are portions of the system buried where excavation, that could damage your system, can occur without your knowledge?
Other Outside Force Damage	Are portions of the system (pipelines, meters, valves, regulators) located in areas that are subject to vehicular damage?
	Are the above-ground sections (pipeline, meters) of the system adequately supported and protected from potential damage?
Material / Weld Failure	Does the system experience frequent leakage as a result of defective pipeline material or fittings?
	Has the operator been contacted by the pipeline manufacturer regarding defects in the pipeline material or fittings?
Equipment	Are rectifiers properly working and providing adequate protection?
	Are pressure regulators in good mechanical condition and have the proper pressure setting? Does not apply to service regulators
	Are idle sections of service line properly maintained and equipped with a device to prevent the flow of gas?
Operations	Does the pipeline system require the operation of any device, other than valves, such as a pressure regulator that serves more than one customer? Are all valves, including service valves, working and accessible?

Table 1

3. **Rank Risks:** The operator must evaluate the risks to the pipeline system and estimate the relative importance of each identified threat. Consider both the relative likelihood of an accident occurring and the consequences that would result if it did.

   a. Rank the risks, from most to least likely, by determining the relative likelihood that the identified threats will cause a leak or incident. Review of records (i.e., leak surveys,

repairs, CP, and others) will be essential towards determining the most common and frequent cause of leaks on your pipeline system.

b. Consider the consequences of a leak or incident that occurred as a result of one of the identified threats. The following are examples of high consequence areas that the pipeline operator should consider:

- Pipelines buried under mobile homes, trailers, or buildings
- Pipelines located in close proximity to areas where people congregate such as a clubhouse
- Locations where an incident on the gas pipeline system could block entrances or exits, which could then hinder agencies responding to an emergency or evacuation efforts
- Pipelines in proximity to schools or commercial buildings. (This usually applies to propane systems.)

If the consequences are generally the same throughout the pipeline system, then your ranked list of threats becomes your ranked list of risks.

If you identify areas within your pipeline system that pose a greater risk than others, rank the identified risks into groups based on the consequence. For example, if there is an area within your pipeline system where the pipelines run beneath mobile homes, and an incident there would also block an entrance or exit, then that area could be classified as, say, Group 1 (a high risk). All other areas where the likelihood is the same, but the consequences less severe, could be classified as Group 2, 3, and so on (lower risk groups). Document the locations of the high and low consequence areas in the Plan or on the map of the gas distribution system by means of color coding.

4. **Identify and implement measures to mitigate risks:** The operator must determine and implement measures designed to reduce the risks from failure of the pipeline system. For all the risks you rank, verify that actions are being taken or requirements are in place to protect against the risks. This should include, at a minimum, the actions required by Title 49, CFR Part 192. Also include the relative monitoring actions and additional measures that you determine are necessary to maintain the integrity of your system as in the examples provided in Table 2. If you have grouped the risks, then additional monitoring and related actions should be conducted in the manner the risks are grouped and ranked.

THREATS	EXAMPLES OF ACTIONS TO MITIGATE RISKS
General Monitoring	Patrol sections of pipeline that have experienced problems to look for signs of damage
	Patrol entire pipeline system to check for signs of excavation
Corrosion	Cathodically protect all areas of steel pipe experiencing active corrosion as indicated by leak history
	Monitor and test cathodic protection more frequently than required
	Inspect rectifiers more frequently than required
	Inspect above-ground pipe more frequently for atmospheric corrosion and leaks
	Inspect exposed buried pipe for corrosion
	Inspect more than 10% of isolated sections of steel pipeline each year or increase the frequency of inspections
Natural Forces	Conduct more frequent patrols to identify conditions that adversely affect the system, especially following, earthquakes, storms, or flooding
	Protect above-ground piping and meters from snow loading
	Take immediate action to eliminate hazards or reduce threats
Excavation Damage	Be aware of excavation activities
	Implement a damage prevention program
Other Outside Force Damage	Install vehicle barriers where appropriate
	Conduct more frequent patrols to identify areas susceptible to damage
	If pipelines are located in areas where they are potentially subject to damage, install warning signs or mark the pipelines with distinctive colors
	Ensure customer meters are adequately supported and not used for other purposes
Material / Weld Failures	Implement recommended actions from any notice received by pipeline or fitting manufacturer
	Replace pipeline or fittings in areas where the system has a history of pipeline failure due to leakage
Equipment	Ensure all personnel who operate equipment are qualified in accordance with Title 49, CFR, Subpart N
	Ensure that emergency equipment is readily available
Operations	Ensure all personnel who operate equipment are qualified in accordance with Title 49, CFR, Subpart N
	Ensure personnel are aware of the precautions to take to prevent over-pressuring, stopping the flow of gas, preventing unsafe gas-air mixtures, and restoring gas

Table 2

5. **Measure performance, monitor results, and evaluate effectiveness:** The Plan shall include provisions for monitoring, as a performance measure, the number of leaks eliminated or repaired on the pipeline system and their causes.

6. **Periodic evaluation and improvement:** The Plan must contain provisions to determine the appropriate period for conducting DIMP evaluations based on the complexity of the pipeline system and changes in factors affecting the risk of failure. An operator must re-evaluate the entire program at least once every five years. The operator must consider the results of the performance monitoring in these evaluations.

   The operator needs to assess the integrity of the gas system whenever changes are made to the system or significant changes occur in the environment to determine if the threats of concern have been eliminated or if new risks have been introduced. For example, if a new commercial center is constructed within or near the pipeline system, the operator will need to consider the increased risk associated with the increase in population density.

WHAT RECORDS MUST AN OPERATOR KEEP?

Each operator must maintain, for a period of at least 10 years, the following records:

1. A Plan in accordance with Title 49, CFR § 192.1015, including superseded Plans
2. Documents supporting threat identification
3. Documents showing the location and material of all piping and appurtenances that are installed after the effective date of the operator's DIMP and to the extent known, when the DIMP is first developed, the location and material of all pipe and appurtenances that were existing on the effective date of the operator's program. Pipeline materials include polyethylene (PE), polyvinyl chloride (PVC), bare steel, coated steel, copper, anodeless risers, and any combination thereof. Appurtenances include valves, regulator stations, cathodic protection facilities (rectifiers, anodes), meter supports, etc.
4. Documents showing the number of Grade 1 and Grade 2 leaks either eliminated or repaired including the date and the cause of the leaks along with copies of repair records supporting actions taken to address the leaks.
5. Keep a record of all instances in which the system is damaged by operations, excavation, natural forces (flooding, earthquake, landslide etc.), or vehicular damage.
6. Document DIMP evaluations and changes made to the risk factors or other parts of the Plan.

Note: The record keeping requirements noted here supplement, but do not replace, other record keeping requirements of 49 CFR, Part 192.