

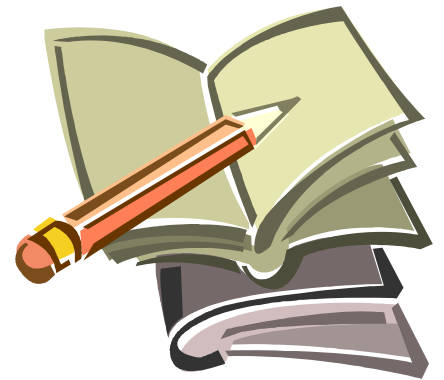
# Operation & Maintenance Plan

The “Backbone” of  
any Gas System.



# Operation & Maintenance (O&M) Plan

- Why do you need an O&M Plan?
- What needs to be in the O&M plan?
- What maintenance activities need to be addressed by the plan?
- How do you know if your plan meets the requirements?
- What records are required and how should you keep them?

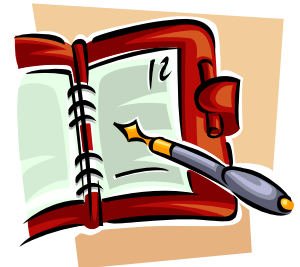


# The two main reasons you need a written O&M Plan

- **First:**
  - An Operation and Maintenance Plan is required for all Gas Systems by state and federal law.  
(Codes of Federal Regulation, Title 49, Part 192.605.)
- **Second:**
  - An O&M Plan will help employees of the gas system become familiar with the system, those activities that are required, and how often those activities need to be done.

# What needs to be in the O&M plan?

- A list of all employee(s) which shows tasks for which the employees are qualified (Part of Operator Qualification Plan)
- Procedures related to Public Awareness Program (PAP) plan
- Procedures for safety activities, including:
  - Discontinued Service (192.727d)
  - Prevention of Accidental Ignition (192.747)
  - Line Markers\* (192.707)
  - An Emergency Plan (not being covered today) is part of an O&M Plan
- A Description of all maintenance activities performed on the system, including
  - What is performed
  - How often it is performed
  - Who performs it



# What maintenance activities need to be addressed by the plan?

- There are maintenance activities that need to be performed on **all** Gas System.
- There may be maintenance activities that need to be performed on **your particular** gas system.



# What maintenance activities need to be performed on my system?

- Maintenance activities that need to be performed on **all** gas systems:
  - Leak Surveys
  - Patrolling
  - Leak Repairs
  - Key Valve Maintenance
  - Odorant Checks
  - Annual Review of O&M plan
  - Atmospheric Corrosion Monitoring
  - Examination of Exposed Buried Pipes
- Maintenance activities that may need to be performed on **your particular system**:
  - Regulator Stations Inspections
  - Corrosion Control Monitoring
    - Pipe to Soil Readings
    - Rectifier Readings
  - Cathodic Protection Evaluation

# Leak Surveys (192.723)

- Leak surveys are required to be done with leak detection equipment at intervals not exceeding 5 years (63 months). Except:
  - If leak surveys are performed in lieu of an electrical survey for steel systems without CP, the intervals must not exceed 3 years (39 months).
  - In some cases it is highly recommended that a yearly leak survey be conducted.



# Patrolling (192.721)

- A routine inspection of the distribution system. It is done by walking along the pipelines and observing factors affecting safety of operation.
- Minimally, should be done at least twice each calendar year at intervals not to exceed 7 ½ months.
- Things to look for:
  - Meter supports
  - Regulators installed properly (vents)
  - Service valve on risers accessible?
  - Metallic items shorting the CP system
  - Smell of leaking gas
  - Atmospheric Corrosion
  - Flex lines (damaged/buried)



# Leak Repairs (192.703)

- Operators must keep records for:
  - All leaks found
  - All repair records
- The repair records need to show the following:
  - Probable cause of damage
  - Date and method of Repair
  - Material used in repair
  - Name of person(s) making the repair



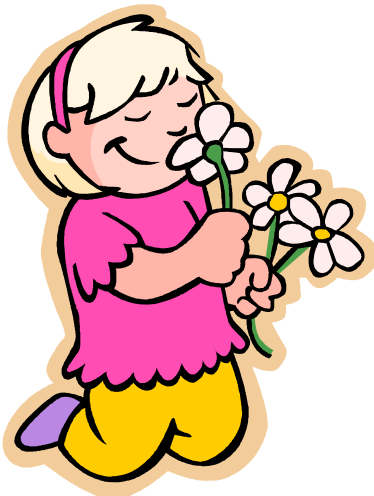
# Key Valve (192.747)



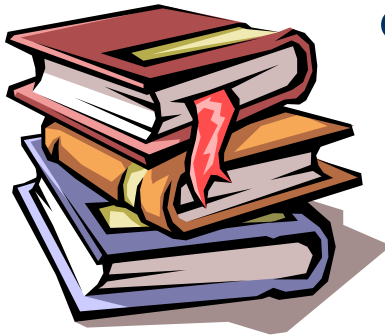
- A key valve is a valve that could shut down the entire system or sectionalize a portion of the system.
- The operator must
  - Determine the Key Valve(s)
  - Mark and identify it / them on the map
  - Check the operation of the valve at least each calendar year at intervals not to exceed 15 months.
  - Timely repair or replace inoperable valves.

# Odorant Checks (192.625)

- The operator must conduct a periodic sampling of the gas to assure the proper concentration of odorant.
- Usually done at the extremities of the system.
- If you can not smell the gas, call your supplier immediately.



# Annual Review of O&M plan (192.605a)



- The O&M Plan must be reviewed at least once each calendar year at intervals not to exceed 15 months. The Emergency Plan also needs to be reviewed annually when the O&M plan is reviewed.
- Things to check for:
  - Still using the same contractors
  - Managers/Owner still the same
  - Any changes to the system

# Atmospheric Corrosion (192.481)

- All aboveground piping must be inspected for atmospheric corrosion once every three years but with intervals not exceeding 39 months.
- Each operator must clean and coat each pipeline or portion of pipeline that is exposed to the atmosphere.



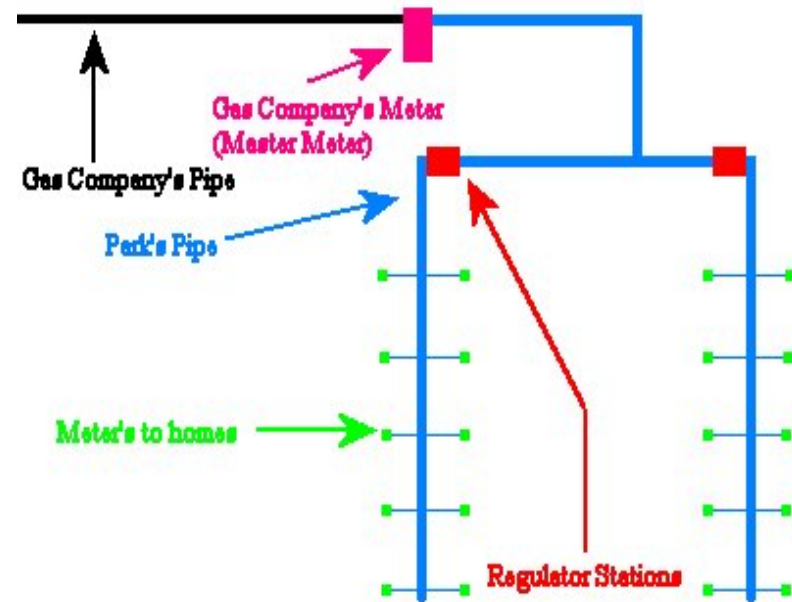
# Examination of Exposed Buried Pipes (192.459)

- Whenever an operator has knowledge that any portion of a buried pipeline is exposed, the exposed portion must be examined for evidence of external corrosion if the pipeline is bare, or if the coating is deteriorated.



# Regulator Stations Inspections (192.739)

- Regulator Stations cut the pressure of the gas in your system.
- The stations need to be inspected once each calendar year at intervals not to exceed 15 months to determine:
  - Equipment is in good mechanical condition, reliable, and set to function at the correct pressure
  - Properly Installed and protected from:
    - Dirt
    - Liquids
    - Or other Conditions that might prevent the proper operation



# Corrosion Control Monitoring

- Corrosion Control Monitoring:
  - The annual evaluation of the Cathodic Protection (CP) system (Galvanic or Impressed Current) on the pipeline system.
- When is CP required?
  - On all metal pipes installed after July 31, 1971.
  - On pipes installed prior to August 1, 1971, a cathodic protection evaluation must be performed every 3 years per 192.457. *(For small operators this generally means a review of leak history and repair records to determine active corrosion.)*



# How do you know if your plan meets the requirements?

- Annually check to see if all information in the manual is current and applicable;
- Check to see if all maintenance activities included in your plans are being performed and records maintained per those plans;
- A CPUC inspection will find out if your plan meets all the requirements



# What records are required and how should you keep them?

- Records are required to prove that all maintenance activities were done in accordance with the law and the O&M plan.
- Records can be kept in any way, but must include at least the following:
  - The Date performed
  - Name of Individual who performed the activity
  - Findings
  - Initials (*signature is even better*) of the individual who performed the activity



# Make Everything Official

*Initial AND Date*

*Initial AND Date*

***Initial AND Date***

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# Any Questions?

