



# O&M and Emergency Presentation



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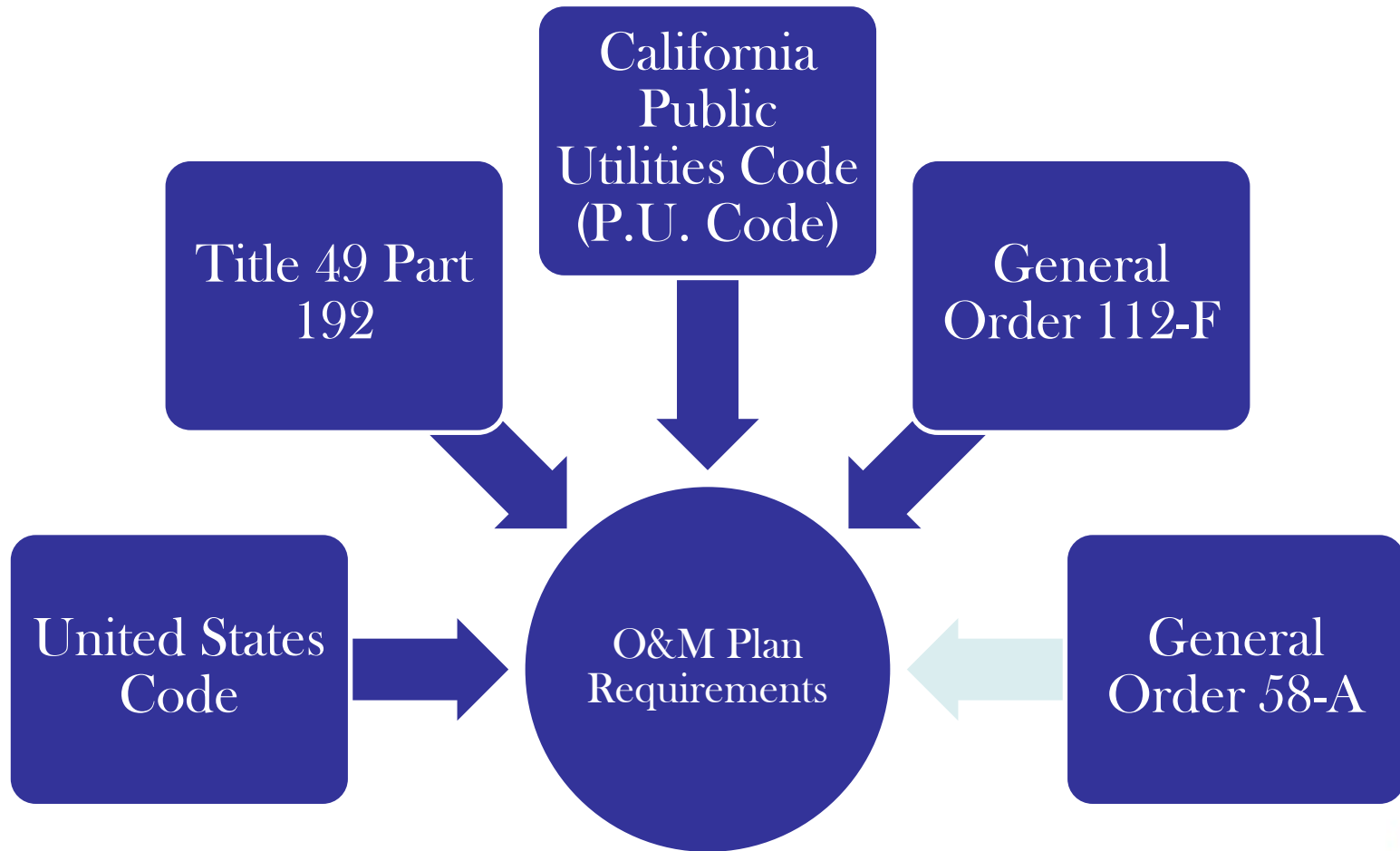
# What is an O&M Plan?

- Operations & Maintenance (O&M) Plan for natural gas or liquid propane gas pipeline systems
- Consists of:
  - Written processes
  - Procedures





# Why an O&M Plan?





# How is an O&M Plan created?

- Operator authorship
- Contractor/ consultant authorship





# How is an O&M Plan written?





# § 192.605 Procedural manual for O&M/E

## (b) Maintenance and Normal Operations

**Procedures are required  
anytime pipeline is:**

- OPERATED
- Replaced
- Changed
- Extended
- Located
- Inspected
- Evaluated
- Removed
- Etc...

**Procedures are required  
anytime the product is:**

- STARTED
- Stopped
- Changed
- Compressed
- Added to
- Purged
- Released
- Etc





# § 192.605 Procedural manual for O&M/E

## (b) Maintenance and Normal Operations

### **SPECIFICITY!**

- WHO
- WHAT
- WHEN
- WHERE
- WHY
- HOW

### **CLARITY!**

- Corrosion References
- Corporate Safety Docs
- Emergency Plans
- Measurement Docs
- Design Documents
- Component Manuals
- Other Information to Provide Clarity





# Procedures: Active Voice

## Use an Active Voice vs a Passive Voice

### Passive Voice

“The incident needs to be reported to the gas controller”

### Active Voice

“The supervisor or the first employee on the scene will report the incident within 15 minutes of arriving at the site and report the incident to the gas control center by telephone or company radio.”







# What is required in an O&M plan?

- §192.603
- §192.605
- Part 192 Subparts





## § 192.603 General provisions

- (a) No person may operate a segment of pipeline unless it is operated in accordance with this subpart.
- (b) Each operator shall keep records necessary to administer the procedures established under § 192.605.
- (c) The Associate Administrator or the State Agency that has submitted a current certification under the pipeline safety laws, (49 U.S.C. 60101 et seq.) with respect to the pipeline facility governed by an operator's plans and procedures may, after notice and opportunity for hearing as provided in 49 CFR 190.206 or the relevant State procedures, require the operator to amend its plans and procedures as necessary to provide a reasonable level of safety





# § 192.605 Procedural manual for O&M/E

## (a) General

An Operator must have a written manual for conducting Operations, Maintenance activities and for Emergency response.

- Must be reviewed and updated (**where necessary**) each calendar year, not to exceed 15 months
- Must be prepared before pipeline operation
- Must be available to operations and maintenance personnel
- **Transmission Operators must have procedures for Abnormal Operations**





# § 192.605 Procedural manual for O&M/E

## (b)(1) Operating, maintaining, and repairing the pipeline in accordance with each of the requirements of this subpart and subpart M

The plans should be an outline for compliance.

- They should either say what you do
- OR
- You should do what they say

Either way YOU will be in compliance following your own procedures.

The right combination of specificity and detail is needed to achieve O&M goals and accomplish compliance.





# § 192.605 Procedural manual for O&M/E

## (b) Maintenance and Normal Operations



The O&M manual must include procedures for the following, **if applicable**, to provide safety during operations and maintenance







# § 192.605 Procedural manual for O&M/E

## (b) Maintenance and Normal Operations



Procedures must include:

- 1) Operating, maintaining, and repairing the pipeline
- 2) Controlling corrosion
- 3) Making construction records, maps, and operating history available to personnel





# § 192.605 Procedural manual for O&M/E

## (b) Maintenance and Normal Operations



Procedures must include:

- 4) Gathering data for reporting incidents under Part 191
- 5) Safely starting up and shutting down a pipeline
- 6) **Purging, isolating, and maintaining compressor stations**





# § 192.605 Procedural manual for O&M/E

## (b) Maintenance and Normal Operations



Procedures must include:

- 7) Starting, operating, and shutting down compressors
- 8) Periodic review of existing procedures
- 9) Precautions and equipment need to ensure safety in a gaseous atmosphere







# § 192.605 Procedural manual for O&M/E

## (b) Maintenance and Normal Operations

Procedures must include:

### 10) Testing and Inspection of Pipe-Type & Bottle-Type Holders

- i. Detecting corrosion and remaining strength of containers
- ii. Sampling and testing of gas dew points for corrosion control and/or interference in operations
- iii. Inspection of pressure limiting devices





# § 192.605 Procedural manual for O&M/E

## (b) Maintenance and Normal Operations

Procedures must include:

- 11) Responding promptly to a report of a gas odor inside or near a building, unless the operator's emergency procedures under § 192.615(a)(3) specifically apply to these reports.
- 12) Implementing the applicable control room management procedures required by § 192.631.





# § 192.605 Procedural manual for O&M/E (c) Abnormal Operations



For transmission lines, the manual required by paragraph (a) of this section must include procedures for the following to provide safety when operating design limits have been exceeded:





# § 192.605 Procedural manual for O&M/E

## (c) Abnormal Operations

- (1) Responding to, investigating, and correcting the cause of:
- (i) Unintended closure of valves or shutdowns;
  - (ii) Increase or decrease in pressure or flow rate outside normal operating limits;
  - (iii) Loss of communications;
  - (iv) Operation of any safety device; and
  - (v) Any other foreseeable malfunction of a component, deviation from normal operation, or personnel error, which may result in a hazard to persons or property.





# § 192.605 Procedural manual for O&M/E

## (c) Abnormal Operations

- 2) Checking variations from normal operation after abnormal operation has ended at sufficient critical locations in the system to determine continued integrity and safe operation.
- 3) Notifying responsible operator personnel when notice of an abnormal operation is received.
- 4) Periodically reviewing the response of operator personnel to determine the effectiveness of the procedures controlling abnormal operation and taking corrective action where deficiencies are found.







# § 192.605 Procedural manual for O&M/E

## (c) Abnormal Operations



5) The requirements of this paragraph (c) do not apply to natural gas distribution operators that are operating transmission lines in connection with their distribution system.





# § 192.605 Procedural manual for O&M/E

## (d) Safety-Related Condition Reports



Instructions enabling personnel who perform operation and maintenance activities to recognize conditions that potentially may be safety-related conditions that are subject to the reporting requirements of § 191.23 of this subchapter.





# § 192.605 Procedural manual for O&M/E (e) Surveillance, emergency response, and accident investigation.



The procedures required by §§ 192.613(a), 192.615, and 192.617 must be included in the manual required by paragraph (a) of this section.







# Records





# Records

- 6 W's
- TVC
- System knowledge and history is necessary for safe pipeline operation





# § 192.605 Procedural manual for O&M/E

## (a) General

Short list of things looked at during Inspections

- O&M Revision History
- Management of Change Documentation
- Procedure Availability
- Emergency Manual Availability
- List of identified Abnormal Operations





# § 192.605 Procedural manual for O&M/E

## (b) Maintenance and Normal Operations



### Support Documentation

- Leak Reports
- Field Survey Reports
- Emergency Repair Documents
- Incident/Accident Logs





# § 192.605 Procedural manual for O&M/E

## (b) Maintenance and Normal Operations

### Supporting Documentation:

- Service Drawings
- Maintenance Documents
- Work Orders
- Corrosion Monitoring Readings
- Corrosion Inspections (Atmospheric)
- Vault Inspections
- Construction As-Built
- Leak Surveys
- Maps
- Incident Reports
- Safety Related and AOC Reports





# § 192.605 Procedural manual for O&M/E

## (b) Maintenance and Normal Operations

### Support Documentation

#### Management of Change Documents

- Control Room
- Transmission
- Operator Qualifications

#### Training

- Programs
- Rosters
- Schedules

#### Compressor Maintenance Logs

#### Maintenance Documentation for:

- CGIs and Flame Packs (Calibration)
- Fire Extinguishers
- Air Bottles
- Air Filtration (Compressors)
- and Other Personal Protective Equipment







# Records Retention

## Life of Facility (Gas Transmission, Subpart I, Subpart J)

- Includes construction, materials, repairs, pipe parameters (e.g., length), MAOP information, and most corrosion records
- Retained for active life of facility

## Other Records (Gas Transmission, Subpart I)

- Include tests, inspections, patrols, surveys, and procedure reviews which prove compliance with 49 CFR 192
- Retained for at least 5 years





# Record Keeping Requirements

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

<b>Maintenance Item:</b>	<b>Maximum Maintenance Interval:</b>
1. Leak survey	Once every 5 years <sup>*1</sup> , or every year in a business district
2. Patrolling	Two times a year, or every 6 months in a business district
3. Key valve maintenance	Once a year
4. Odorant check	"Periodic" <sup>*2</sup>
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







# Emergency Plans





# What is an Emergency Plan?

- Written plan addressing operator's emergency preparations and response in the context of §192.615
- Consists of
  - Written processes (e.g., notification, training)
  - Procedures
  - Records (e.g., equipment, training, notification list)





## § 192.615(a) Emergency Plans

- 1) “Receiving, identifying, classifying notices of events which require immediate response by the operator”
- 2) Establish & maintain means of communication with emergency and other public officials





## § 192.615(a) Emergency Plans

- 3) Prompt and effective emergency response, including for:
- i. “Gas detected in or near a building”
  - ii. “Fire located near or directly involving a pipeline facility”
  - iii. “Explosion occurring near or directly involving a pipeline facility”
  - iv. “Natural disaster”





## § 192.615(a) Emergency Plans

- 4) “Availability of personnel, equipment, tools, and materials, as needed at the scene of an emergency”
- 5) “Actions directed toward protecting people first and then property.”





## § 192.615(a) Emergency Plans

- 6) “Taking necessary actions, including but not limited to, emergency shutdown, valve shut-off, or pressure reduction, in any section of the operator's pipeline system, to minimize hazards of released gas to life, property, or the environment.”





## § 192.615(a) Emergency Plans

- 7) “Making safe any actual or potential hazard to life or property.”
- 8) Notification to emergency services to:
  - Determine location of emergency
  - Coordinate emergency response
  - Inform of any known pipeline ruptures per §§192.3 and 192.635





## § 192.615(a) Emergency Plans

- 9) “Safely restoring any service outage.”
- 10) “Beginning action under § 192.617, if applicable, as soon after the end of the emergency as possible.”
- 11) Controller actions from control room
- 12) Rupture identification process







## § 192.615(b) Emergency Plans

Each operator shall:

- 1) Provide supervisors responsible for emergency actions portions of the emergency plan as necessary for compliance
- 2) Train operating personnel to assure knowledge on emergency procedures AND verify effective training





## § 192.615(b) Emergency Plans

- 3) “Review employee activities to determine whether the procedures were effectively followed in each emergency.”





## § 192.615(c) Emergency Plans

Each operator must establish and maintain liaisons with emergency responders and other public officials to:

- 1) “Learn the responsibility and resources of each government organization that may respond to a gas pipeline emergency”





## § 192.615(c) Emergency Plans

- 2) “Acquaint the officials with the operator's ability in responding to a gas pipeline emergency”
- 3) “Identify the types of gas pipeline emergencies of which the operator notifies the officials”
- 4) “Plan how the operator and officials can engage in mutual assistance to minimize hazards to life or property.”





Thank you!  
For Additional Information:

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