



# **Distribution Integrity Management**

## **Record Requirements**

# CONTACT INFORMATION

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**Pipeline and  
Hazardous Materials  
Safety Administration**

## **SUBPART P - §192.1007**

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A written integrity management plan must contain procedures for developing and implementing the following elements:

(a) *Knowledge*. An operator must demonstrate an understanding of its gas distribution system developed from reasonably available information.

# **SUBPART P - §192.1007**

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## **\* Knowledge includes:**

- \* Characteristics of design, operations and environmental factors to assess threats and risks**
- \* Information gained from past design, operations, and maintenance**
- \* Identify if additional information is needed, and plan for obtaining information**

# KNOWLEDGE

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- ✦ Develop understanding of system from reasonably available information
  - ✦ Does not require search through every archived (i.e. – offsite or stored) records
  - ✦ Does not require additional investigations (i.e. – excavation) to discover information

# KNOWLEDGE

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- ✦ Have considerable knowledge of system through
  - ✦ Routine Operations and Maintenance activities
  - ✦ Knowledge and experience of operations, maintenance or engineering personnel or contractor personnel
  - ✦ Paper or electronic records
- ✦ Location of records – main office, field office, field notes, and operations logs

# **KNOWLEDGE**

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Must assemble reasonably available information to the extent necessary to support development and implementation of IM program

# ***WHERE DO I START?***

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# KNOWLEDGE

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## ✱ Sources Of Information

- ✱ Records required by various subparts of both §191 and §192.
- ✱ Life of facility documents
- ✱ Transient records of inspections and tests
- ✱ Review §191 and §192 requirements for information sources

# **INFORMATION SOURCES (§191.11)**

- ✦ Annual Report (PHMSA Form F7100.1-1)
  - ✦ Past report data can be downloaded from:  
[http://phmsa.dot.gov/pipeline/library/gas pipeline statistics](http://phmsa.dot.gov/pipeline/library/gas_pipeline_statistics)
  - ✦ System description by material, diameter, and decade of installation
  - ✦ Bare, coated, cathodically protected lines and mains
  - ✦ Number and causes of leaks

# INFORMATION SOURCES

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- ✱ Incident Reports (§191.19)
- ✱ Other State Reporting Requirements
- ✱ Safety Related Condition Reports (§191.23)
- ✱ Investigation of incidents and failures, or root cause analysis (§192.617)

# §192 INFORMATION SOURCES

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- ✱ Subpart C – Pipe Design
  - ✱ Pipe material and specifications
    - ✱ Steel, plastic, copper, cast iron
  - ✱ Design calculations
- ✱ Purchase orders, completion reports, repair information, and maps
- ✱ Operational knowledge from individuals

# §192 INFORMATION SOURCES

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- ✱ Subpart D – Design of Components
  - ✱ Valves, flanges, fittings, other manufactured components, fabricated components, overpressure protection, regulators
- ✱ Purchase orders, completion reports, repair information, and maps
- ✱ Operational knowledge from individuals

# §192 INFORMATION SOURCES

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- ✱ Subpart E (Welding)

- ✱ Inspection of welds nondestructive testing (steel), repair of defects

- ✱ Subpart F (Joining other than Welding)

- ✱ Method of making plastic joints, couplings, mechanical joints, threads

- ✱ Completion reports, repair information, and maps

- ✱ Operational knowledge from individuals

# §192 INFORMATION SOURCES

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- ✱ Subpart G – Construction Requirements
  - ✱ All pipe – method of installation, depth of burial, casings, clearance, protected from hazards,
  - ✱ Steel pipe – dents, wrinkle bends, repairs
  - ✱ Plastic pipe – tracer wire, UV exposure, repairs
- ✱ Completion reports, repair information, and maps
- ✱ Operational knowledge from individuals

# §192 INFORMATION SOURCES

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- ✦ Subpart H – Customer Meters and Service Lines
  - ✦ Materials used in service lines, types of taps, types of meter and replacement programs, excess flow valves
- ✦ Completion reports, repair information, and maps
- ✦ Operational knowledge from individuals



# §192 INFORMATION SOURCES

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- ✱ Subpart I – Corrosion Control
- ✱ §192.459 - Exposed pipe inspections
  - ✱ Any time metallic pipe is exposed, an inspection should be recorded.
  - ✱ Not necessary to remove coating if in good condition
  - ✱ Only required for metallic pipe, but good idea for plastic to help determine unknown material

# §192 INFORMATION SOURCES

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- ✱ Subpart I – Corrosion Control
- ✱ §192.461 – Protective Coatings
  - ✱ Type and method of coating
  - ✱ Follow manufacturers recommendations
- ✱ Completion reports, repair information, and maps
- ✱ Operational knowledge from individuals

# §192 INFORMATION SOURCES

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- ✱ §192.465 External Monitoring

- ✱ The annual survey consists of taking the following readings along the pipeline:

- ✱ Rectifier readings (6 times per year)

- ✱ Test point readings (may include pipe-to-soil, valve taps, risers, and other above ground structures) (once per year)

- ✱ Casing-to-soil readings (once per year)

- ✱ Anode bed readings (once per year)

- ✱ Bond Readings (once or 6 times per year)

# §192 INFORMATION SOURCES

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- ✱ §192.467 – Electrical Isolation
  - ✱ Readings part of annual survey to ensure isolation
- ✱ §192.469 – Test Stations
  - ✱ Adequate number of test points
  - ✱ Delete test point document reason or designate alternate point

# §192 INFORMATION SOURCES

- ✱ Readings must meet criteria of Appendix D
  - ✱ Normal pipe to soil readings should be a minimum of  $-0.850$  mV
  - ✱ Need to consider IR drop, readings of  $-0.850$  may not be adequate when calculated IR is removed
  - ✱ If improper readings obtained, additional actions may be required as per §192.613, Continuing Surveillance

# **§192 INFORMATION SOURCES**

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To help determine IR drop, pipe potentials should be taken each time the pipe coating is removed for repair or construction to help meet the requirements of §192.613,  
Continuing Surveillance

# §192 INFORMATION SOURCES

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## \* §192.475 (b) – Internal Pipe Inspections

- \* Any time pipe is cut, an internal pipe inspection must be performed.
- \* Only required for metallic pipe, but good idea for all lines

## \* §192.477 – Internal Corrosion Monitoring

- \* Gas quality records

# §192 INFORMATION SOURCES

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- ✱ §192.479, §192.481, Atmospheric Corrosion
  - ✱ All piping exposed to the atmosphere must be inspected every 3 years, remedial actions
  - ✱ Particularly important for meter sets



# §192 INFORMATION SOURCES

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## ✱ §192.487 – Remedial Measures

- ✱ Record of assessments, repairs, or remedial actions
- ✱ Installation of cathodic protection on isolated short sections or fittings

# INFORMATION SOURCES

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- ✱ Corrosion Abnormal Operating Conditions
  - ✱ No output from rectifier – rectifier or ground bed problems
  - ✱ Inadequate CP levels
  - ✱ Improper Pipe to soil readings
  - ✱ Vandalism and third party damage
  - ✱ Improper insulation
  - ✱ Unauthorized uses of above ground structures
  - ✱ Atmospheric corrosion
  - ✱ Internal corrosion issues
  - ✱ Cast Iron pipe - graphitization

# INFORMATION SOURCES

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- ✱ Corrosion information found in records, surveys, or patrol information
- ✱ Other Corrosion Information
  - ✱ Close interval surveys
  - ✱ Other electrical studies such as DCVG
  - ✱ Shorted casings and electrical isolation

# §192 INFORMATION SOURCES

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## ✱ Subpart J – Testing

- ✱ Pressure test and leak test records as required by §192.517
- ✱ For pipelines operating below 100 psi, service lines, and plastic pipelines, only require a minimum of 5 year retention

# §192 INFORMATION SOURCES

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- ✱ 192.605 – O&M Manual
  - ✱ Procedures used for operations and maintenance
  - ✱ Recent changes, sales and acquisitions
  - ✱ Training for changes
  - ✱ Documentation of code required inspections

# §192 INFORMATION SOURCES

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- ✦ Subpart L – Operations

- ✦ §192.613 – Continuing Surveillance

- ✦ Actions taken for failures, leakage history, changes in CP requirements, and other unusual operating and maintenance conditions

- ✦ Determined to be unsatisfactory condition – initiate program to recondition or phase out, or reduce MAOP

# §192 INFORMATION SOURCES

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## \* §192.614 – Damage Prevention

- \* One call tickets – involved, not involved
    - \* Blasting, crossings, proximity to other utilities
  - \* Developers, any others planning work
  - \* Damage associated with one calls
  - \* Documentation of damage without one-calls
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- \* One call tickets, other records

# §192 INFORMATION SOURCES

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- ✱ §192.619, §192.621 and §192.623 – MAOP
  - ✱ MAOP of system
  - ✱ How was it established
  - ✱ Over pressure and under pressure conditions
- ✱ Records, but operations personnel may provide more information



# §192 INFORMATION SOURCES

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- ✱ Subpart M – Maintenance
- ✱ §192.721 – Patrolling
  - ✱ Areas patrolled more frequently because of severity of conditions, or on structures where physical movement or external loading (i.e. – bridges)
- ✱ Records of results of patrols

# §192 INFORMATION SOURCES

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## ★ §192.723 – Leakage Surveys

- ★ Periodic leakage surveys and reported leaks
- ★ Records of surveys

## ★ Leak Management Program

- ★ Hazardous leaks repaired
- ★ Develop a leak management program based on knowledge of system

# §192 INFORMATION SOURCES

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- ✱ §192.739, §192.741, and §192.743 –  
Pressure limiting and regulating stations
  - ✱ Set points, testing and inspections, capacity verifications
- ✱ Written documents, pressure records, overpressure conditions
- ✱ May require contact with transmission company who does inspections/testing

# §192 INFORMATION SOURCES

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## \* §192.747 – Valves

- \* List of valves necessary for safe operation of the distribution system
  - \* Annual valve inspections
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- \* Inspection records and remedial actions

# §192 INFORMATION SOURCES

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- ✱ §192.753 – Caulked bell and spigot joints
- ✱ §192.755 - Protecting cast iron pipeline
  - ✱ Areas where bell and spigot joints sealed
  - ✱ Protection of cast iron lines from outside forces
- ✱ Written records and maps
- ✱ Operational knowledge from individuals

# §192 RISK INFORMATION SOURCES

- ✱ §192.615 – Emergency Plans
  - ✱ Knowledge and training
  - ✱ Response times
  - ✱ Liaison with public officials
- ✱ §192.616 – Public Awareness
  - ✱ Records showing population along pipeline, areas of higher risk such as schools, business districts, hospitals

# §192 RISK INFORMATION SOURCES

## ✱ §192.625 – Odorization

- ✱ Records showing over odorization and under odorization
- ✱ Used in conjunction with leak calls

## ✱ §192.727 – Abandoned or deactivated Facilities

- ✱ Location of such facilities

# OTHER RISK INFORMATION SOURCES

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- ✦ Geological conditions such as:
  - ✦ River crossings or areas prone to washouts or flooding
  - ✦ Areas prone to subsidence/mining
  - ✦ Areas prone to landslides
  - ✦ Areas prone to earthquakes
- ✦ Public considerations
  - ✦ Areas of future development
  - ✦ Proposed infrastructure changes



# OTHER RISK INFORMATION SOURCES

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## ✱ Call Center Logs

- ✱ Primarily leaks and odor calls
- ✱ No gas calls may indicate anything from plugged or frozen off regulator to system constraints during extreme weather conditions
- ✱ Third party hits and other outside force damage (i.e. – automobile crashes which damage equipment)

# RECORD RETENTION

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- ✦ Life of Facility Documents

- ✦ Design, materials, construction records
- ✦ Some corrosion records including internal pipe inspections

- ✦ Transient Records

- ✦ Patrols, inspections – no specified interval, but at least until next inspection
- ✦ Test requirements – 5 years

# RECORD RETENTION

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- ✱ §192.1015(c) - The operator must maintain, for a period of at least 10 years, the following records:
  - (1) Written IM plan (including superseded plans)
  - (2) Documents supporting threat identification
  - (3) Documents showing location and material of piping and appurtenances installed after IM, and to the extent know, the location and material of all existing pipe and appurtenances

# RECORD RETENTION

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A prudent distribution operator may want to re-examine their record retention intervals as part of DIMP.

# INFORMATION SOURCES

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- ✦ Incident, failure, and other information useful for:
  - ✦ Knowledge of system
  - ✦ Trending
  - ✦ Threat identification and assessment
  - ✦ Risk analysis
  - ✦ Developing Performance measures

# PERFORMANCE MEASURES

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- ✱ Routine O&M tasks may be a method of obtaining additional information regarding system
  - ✱ During excavation, examine pipe/fittings for markings
  - ✱ Modify forms/procedures to include collection of other information

# ADDITIONAL INFORMATION

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## ✱ Regulations

<http://www.phmsa.dot.gov/pipeline/regs>

## ✱ Advisory Bulletins

<http://www.phmsa.dot.gov/pipeline/advisory-bulletin>

- ✱ Substandard plastic materials, mechanical coupling issues, snow buildup

# ADDITIONAL INFORMATION

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- ★ DIMP

<http://primis.phmsa.dot.gov/dimp/>

- ★ GPTC guide information for DIMP

<http://www.aga.org/Committees/gotocommitteepages/gaspiping>



# SHRIMP

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## **S**imple, **H**andy, **R**isk-based **I**ntegrity **M**anagement **P**lan

- \* On-line tools that operators may use to create a written distribution integrity management plan customized for the specific needs of the operator
- \* Developed by APGA with input from PHMSA and NPSR

<http://www.apgasif.org/shrimp>

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***QUESTIONS?***