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Operator Qualification and Safety Management for Public Gas Systems

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American Public Gas Association

American Public Gas Association

- ~1000 community-owned gas systems
- Over 700 are APGA members
  - 37 states
  - Serving ~5 Million Customers
  - ~21,000 Employees
  - Operating ~120,000 Miles of Main
- Systems size: 19 to ~500,000 meters
- Largest: Philadelphia with ~ 500,000 meters
- Smallest: Wagner County, OK with 19 meters

How a regulation is made

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- Initiated by PHMSA, NTSB accident report, Congress, petition for rulemaking, inspector general, etc.
- Advance notice of proposed rulemaking (ANPRM)
  - Public comments and possible meeting
- Notice of Proposed rulemaking (NPRM)
  - Public comments and possible meeting
- Review and comment by advisory committee
- Final Rule
- Possible Petition for Reconsideration
- Possible Lawsuit

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Operator Qualification

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- Public meeting January 2003
- July 15, 2015 - Notice of Proposed rulemaking
- Public comments ended September 8, 2015
- Advisory Committee review June 2016
- Final rule could come out anytime
- Uncertainty due to Executive Order requiring removal of 2 rules for every 1 new rule

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Operator Qualification

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- Redefines “covered task”
- No more 4 part test
- 2 part test: *Covered task* means an activity identified by the operator that
- 1) affects the safety or integrity of the pipeline facility, and
- 2) is an operations, maintenance, **construction or emergency response** task.
- TPSSC said keep 4 part test, but add construction, emergency response and IM.

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Qualified, continued

- Demonstrate the technical skills required to perform the covered task, for example:
  - Variations required in the covered task performance due to equipment and/ or new operations differences or changes;
  - Variations required in covered task performance due to conditions or context differences (e.g., hot work versus work on evacuated pipeline); and
- Meet the physical abilities required to perform the specific covered task (e.g., color vision or hearing).

Operator Qualification

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- Notify regulators of significant changes to the OQ program :
  - ~~– Wholesale changes to the program;~~
  - – Change in evaluation methods (i.e. performance and written to written only);
  - – Increases in evaluation intervals (i.e. from 1 to 5 years); or
  - – Removal of covered tasks (not including combining covered tasks).
  - – Any other change deemed significant by the operator

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Operator Qualification

- For each covered task, establish span of control limits
- Span of control means the ratio of nonqualified to qualified individuals where the nonqualified individual may be directed and observed by a qualified individual when performing a covered task, with consideration to complexity of the covered task and the operational conditions when performing the covered task.
- Define the measures used to determine successful completion of the on-the-job performance evaluation.

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- Establish and maintain a **Management of Change** program that will communicate changes that affect covered tasks to individuals performing those covered tasks;
- Identify all covered tasks and the **intervals** at which evaluation of an individual's qualifications is needed;
- Provide training to ensure that any individual performing a covered task has the necessary knowledge, skills, and abilities to perform the task in a manner that ensures the safety and integrity of the operator's pipeline facilities;

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Operator Qualification

- Provide supplemental training for the individual when procedures and specifications are changed for the covered task;
- Establish the requirements to be an Evaluator, including the necessary training;
- Develop and implement a process to measure the program's effectiveness in accordance with § 192.805

Operator Qualification

§ 192.807 Program effectiveness.

- (a) *General.* The qualification program must include a written process to measure the program's effectiveness. An effective program minimizes human error caused by an individual's lack of knowledge, skills and abilities (KSAs) to perform covered tasks. An operator must conduct the program effectiveness review once each calendar year not to exceed 15 months.

Operator Qualification

- The process to measure program effectiveness must:
  - Evaluate if the qualification program is being implemented and executed as written; and
  - Establish provisions to amend the program to include any changes necessary to address the findings of the program effectiveness review.

Operator Qualification

- The operator must, at a minimum, include the following measures to evaluate the effectiveness of the program:
- Number of occurrences caused by any individual whose performance of a covered task(s) adversely affected the safety or integrity of the pipeline due to any of the following:
  1. Evaluation was not conducted properly;
  2. KSAs for the specific covered task(s) were not adequately determined;
  3. Training was not adequate for the specific covered task(s);
  4. Change made to a covered task or the KSAs was not adequately evaluated for necessary changes to training or evaluation;
  5. Change to a covered task(s) or the KSAs was not adequately communicated;

Effectiveness Criteria continued

6. Individual failed to recognize an abnormal operating condition;
7. Individual failed to take the appropriate action following the recognition of an abnormal operating;
8. Individual was not qualified;
9. Nonqualified individual was not being directed and observed by a qualified individual;
10. Individual did not follow approved procedures and/or use approved equipment;
11. Span of control was not followed;
12. Evaluator or training did not follow program or meet requirements; or
13. The qualified individual supervised more than one covered task at the time.

Training Records

- Will not be retroactive
- Training not required for currently qualified individuals unless there is a reason

Any OQ Questions?

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Pipeline Safety Management Systems

- American Petroleum Institute (API) Recommended Practice 1173
- Not (yet) a regulation – voluntary
- PHMSA is urging operators to adopt and states to press operators to comply
- Written by a working group dominated by large interstate operators

Size of US Gas Distribution Systems

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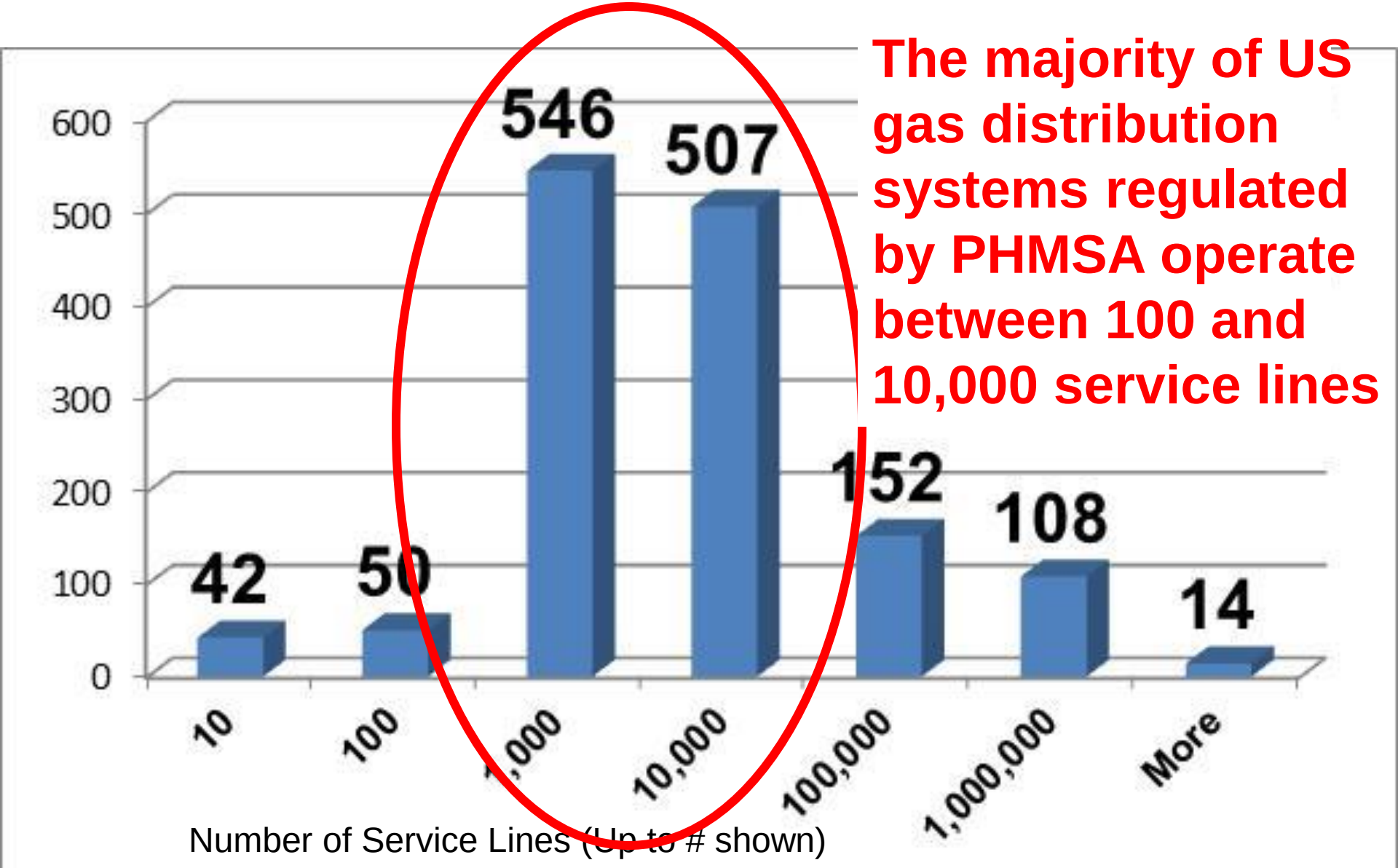

The majority of US gas distribution systems regulated by PHMSA operate between 100 and 10,000 service lines

PSMS: RP 1173

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- Result of a hazardous liquid accident
- APGA supports effective safety management systems for public gas systems
- All ten elements in the draft RP 1173 are applicable for public gas, however …
- RP 1173 is geared toward managing safety in large pipeline operations with thousands of widely dispersed employees
- It is written in language most public gas system managers would find foreign
- It would be difficult, if not impossible for most public gas systems to adopt RP 1173

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Enforcing RP 1173

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- The word “shall” appears 150 times in RP 1173
- PHMSA is developing a form for auditing compliance with RP 1173, even though RP 1173 is strictly voluntary
- The draft PSMS inspection form is 150 pages long!

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PSMS Elements

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1. Leadership and Management Commitment
2. Stakeholder Engagement
3. Risk Management
4. Operational Controls
5. Incident Investigation, Evaluation, and Lessons Learned
6. Safety Assurance
7. Management Review and Improvement
8. Emergency Preparedness and Response
9. Competence, Awareness, and Training
10. Documentation and Record Keeping

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Safety Culture

- Leadership and fostering a safety culture is central to the success of PSMS
- Some elements of safety culture:
  - Support at all levels
  - Non-punitive reporting of safety issues
  - Authority to shut down jobs that are unsafe

Top Management

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As a member of the utility's governing body, what can I do to promote a safety culture?

- Budget to safely operate and maintain the utility
- Periodically review with utility managers the capital improvement needs of the utility;
- Periodically review with utility managers the safety record of the utility and the status of any safety-related improvement projects; and
- Encourage utility managers and employees to come to you with any and all safety concerns.
- Provide feedback to employees who raise safety issues

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As a utility supervisor, what can I do to promote a safety culture?

- Establish and maintain policies, goals, and objectives that promote a positive safety culture;
- Identify and allocate resources sufficient for safe, reliable and efficient operations;
- Establish performance goals that include safety measures;
- Review the utility's safety record and performance goals in all management meetings;
- Communicate your commitment to safety to internal and external stakeholders;

Employees

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As a utility employee, what can I do to promote a safety culture?

- Follow the procedures set forth by the utility;
- Talk to your supervisor about where procedures can be improved to improve safety;
- Bring to the attention of supervisors any and all safety concerns, and
- Always protect the safety of customers, the public and fellow employees during both routine and emergency situations.

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Stakeholder Engagement

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- Process for communication and engagement with internal and external stakeholders regarding safety
- Internal stakeholders are employees, managers and members of the governing body.
- External stakeholders include customers, non-customers who live and work near gas lines, excavators and others who dig near gas lines and fire, police and others who may be called upon to respond to a natural gas emergency
- Essentially your Public Awareness Plan

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Risk Management

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- Data Gathering and Evaluation of Quality
- Risk Identification and Assessment
- Risk Prevention and Mitigation
- Periodic Analyses
- Analysis Review
- Essentially your DIMP program

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Operational Controls

- Content of Operating Procedures
- Review
- Safe Work Practices
- System Integrity
- Management of Change
- Outsourcing and Contractors
- Essentially your O&M and safety manuals

Incident Investigation, Evaluation, and Lessons Learned

- Investigation
- Follow-up and Communication of Lessons Learned
- Learning from External Events
- Essentially the incident investigation procedure from your O&M and safety manual

Safety Assurance

- "The utility shall periodically evaluate all elements of the pipeline safety management system"
  a) the effectiveness of the elements of the PSMS;
  b) review of processes and procedures;
  c) ensuring procedures reflect current requirements;
  d) verifying that the PSMS is effective at producing intended safety performance improvement;
  f) considering any incident investigation results;
  g) reviewing data generated from O&M;
  h) identifying new and emerging risks;
  i) recommending improvements to PSMS plans and procedures based on evaluation findings

Management Review and Improvement

- The utility's PSMS and safety performance shall be reviewed at least annually by management to evaluate whether the performance goals and objectives have been met.

Emergency Preparedness and Response

a. determination of potential types of emergencies;

b. internal and external notification requirements;

c. identification of response resources;

d. recognition and use of Unified Command/Incident Command Structure;

e. safety, health, and environmental protection processes;

f. communication plan;

g. training and drills, including involvement of external agencies (e.g. emergency responders);

h. lessons learned and improvement process;

i. periodic review and updating of the plan

- Covered in manual for O&M and Emergencies

Competence, Awareness, and Training

The utility shall establish a training schedule to ensure that personnel and contractors are updated and aware of:

a. applicable elements of the PSMS that affect their job requirements;

b. accountabilities, responsibilities, and authorities in executing with the requirements of the pipeline safety management system;

c. newly emerging or changing risks, problems in execution of the pipeline safety management system, and opportunities to improve processes and procedures;

d. potential consequences of failure to follow processes or procedures.

NOTE: This PSMS element is typically addressed in the utility's Operator Qualification Plan

Documentation and Record Keeping

- Control of Documents
- Control of Records
- The PSMS documentation shall include:

  a. statements of the safety policy and objectives;

  b. procedures established for the PSMS as required by this document and/or the pipeline utility;

  c. documents and records of work required by the pipeline safety management system

  d. identification of regulatory and other applicable requirements.

  e. other records identified by the utility needed to show the effective operations of the pipeline safety management system.

  NOTE: Examples of documents include the manual for operations, maintenance and emergencies, including related inspection and maintenance forms; Utility Qualification Plan; Public Awareness Plan; Distribution Integrity Management Plan and other required documents

Summary

- PSMS is not duplicating existing plans and procedures
- PSMS is ensuring that plans and procedures are consistent, being followed and effective at managing safety

Questions?