PHMSA Overview

Presentation to West Africa Gas Pipeline Authority

Hosted by National Association of Regulatory Utility Commissioners (NARUC)
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Presentation Overview

- Role and Scope of DOT PHMSA
- States
- Topics of interest from WAPGA through NARUC
  - Pipeline operation and maintenance: Inspections and Reporting
  - Environment and safety management of onshore facilities

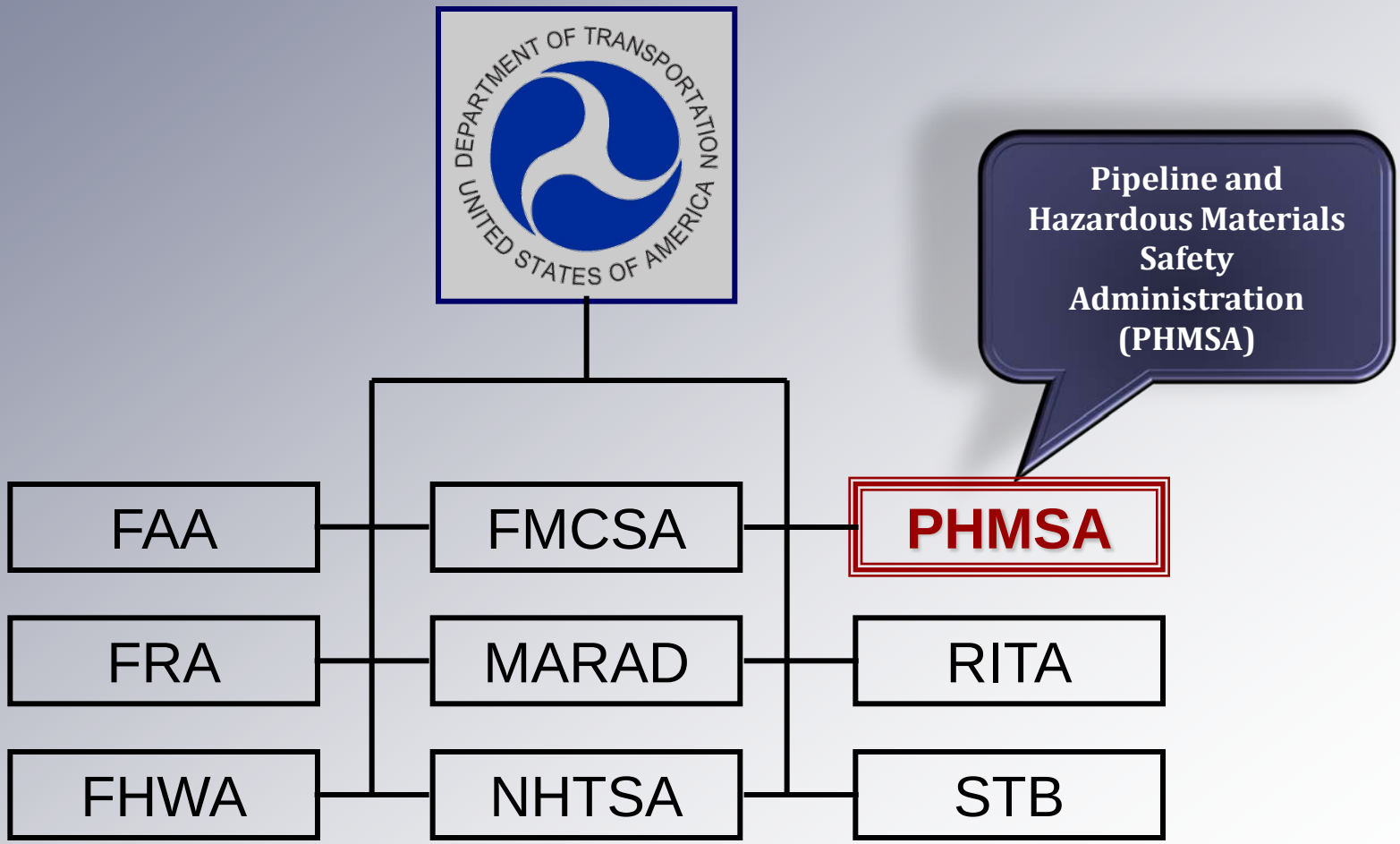
Presentation Overview – cont'd

- Pipeline operation and maintenance: Inspections and Reporting
  - What to inspect: Which parts of the system does PHMSA focus on
  - How to inspect: What is the process (or flowchart) when PHMSA inspects
  - Frequency of efficient inspections
  - Equipment required for inspections
  - Type of corrections frequently made
  - Reporting requirements

Presentation Overview – cont'd

- Environment and safety management of onshore facilities
  - How the right of way is monitored
  - How is the general public involved in the pipeline right of way monitoring and safety issues
  - How are drills organized, how often and who is involved?
  - Incident management: roles and responsibilities of the Company vs. the regulator. Who does what? How does PHMSA communicate with media?
  - Cathodic Protection and corrosion control onshore

DOT / PHMSA


DEPARTMENT OF TRANSPORTATION
UNITED STATES OF AMERICA
Pipeline and Hazardous Materials Safety Administration (PHMSA)
FAA
FMCSA
PHMSA
FRA
MARAD
RITA
FHWA
NHTSA
STB

PHMSA

Office of Pipeline Safety

Office of Hazardous Materials Safety

- Chief Counsel
- Public Affairs
- Contracts/Procurement
- Human Resources
- Civil Rights

Mission
Office of Pipeline Safety

“ To ensure the safe, reliable, and environmentally sound operation of the Nation’s pipeline transportation system.”

Pipelines Regulated by PHMSA

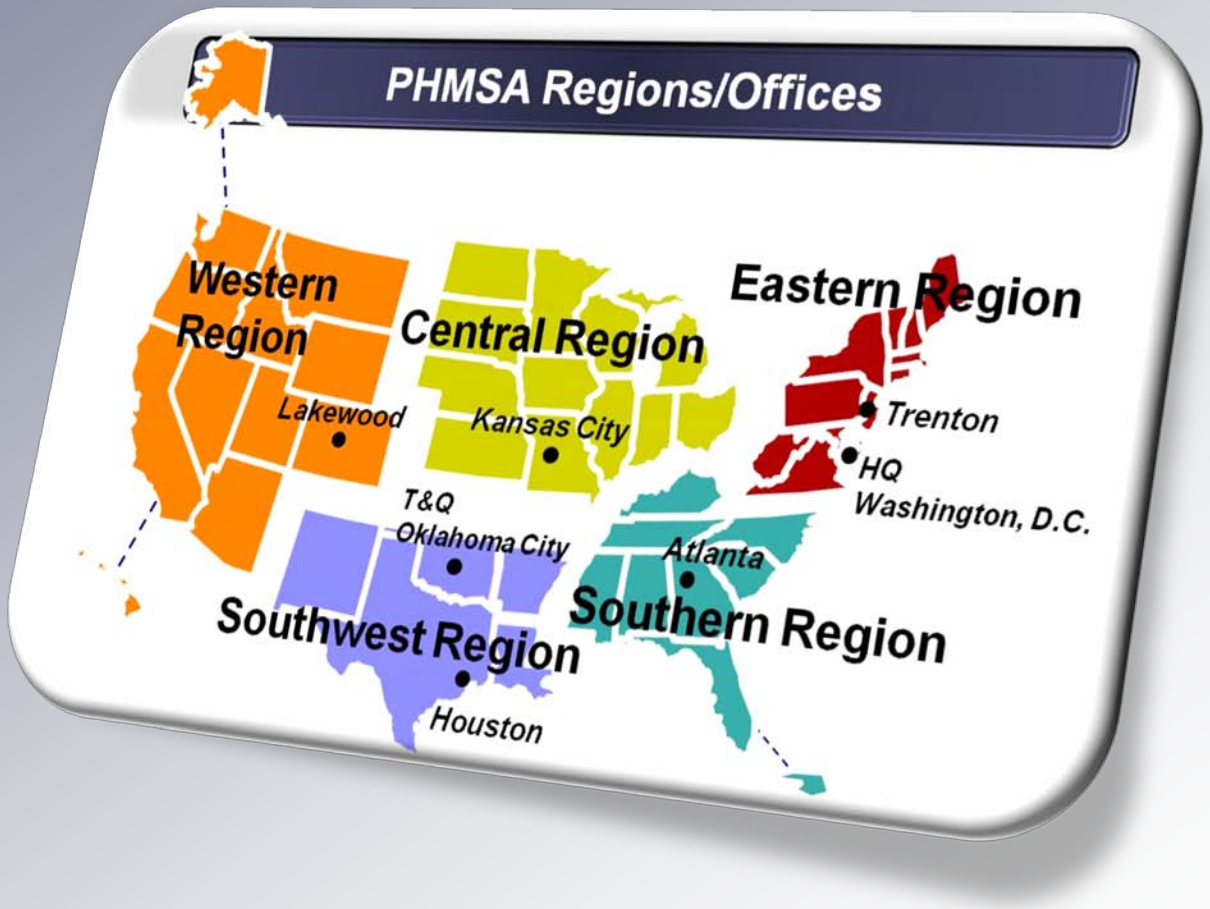
- Onshore and offshore Hazardous Liquid pipeline (certain exceptions);
- Onshore and offshore Gas Transmission and Gathering pipelines (certain exceptions);
- Natural Gas Distribution mains and service pipelines (primarily by States);
- Propane distribution system pipelines.

Pipeline System Components*

Pipeline	Mileage	% Total	Operators	% Total
Hazardous Liquid	173,396	7	306	12
Gas Transmission	317,516	13	939	38
Gas Distribution	2,035,253	80	1,245	50
(main)	*1,200,803*	*48*		
(service)	*834,450*	*32*		
Total	2,526,165	100	2,490	100

* Data as of 2-16-2011

PHMSA OPS Regions



States (data as of CY 2010)

- PHMSA certifies States to inspect and enforce regulations as it applies to INTRASTATE pipelines, and can enter into agreements with States to inspect INTERSTATE pipelines, though PHMSA conducts all enforcement on these lines.
- PHMSA writes nationwide regulatory program for minimum pipeline safety standards. States adopt federal regulations into their State laws at a minimum but can adopt additional or more stringent safety standards for intrastate pipeline facilities if the standards are compatible with the minimum safety standards.
- PHMSA has certified 52 State Pipeline Safety Programs to inspect INTRASTATE pipelines. (Not AK or HI, but P.R. and DC and some states have more than one program)
- PHMSA has Interstate Agent Agreements with 11 States to perform Interstate pipeline inspections
- If a State *does not* assume safety authority over certain pipeline facilities it is PHMSA's responsibility to inspect and take enforcement actions as appropriate.

PHMSA Relevant Regulations

- Title 49 (Transportation) Code of Federal Regulations (CFR) (E-CFR: http://ecfr.gpoaccess.gov/) Parts 190-199
  - 190: PIPELINE SAFETY PROGRAMS AND RULEMAKING PROCEDURES
  - 191: TRANSPORTATION OF NATURAL AND OTHER GAS BY PIPELINE; ANNUAL REPORTS, INCIDENT REPORTS, AND SAFETY-RELATED CONDITION REPORTS
  - 192: TRANSPORTATION OF NATURAL AND OTHER GAS BY PIPELINE: MINIMUM FEDERAL SAFETY STANDARDS
  - 193: LIQUEFIED NATURAL GAS FACILITIES: FEDERAL SAFETY STANDARDS
  - 194: RESPONSE PLANS FOR ONSHORE OIL PIPELINES
  - 195: TRANSPORTATION OF HAZARDOUS LIQUIDS BY PIPELINE
  - 198: REGULATIONS FOR GRANTS TO AID STATE PIPELINE SAFETY PROGRAMS
  - 199: DRUG AND ALCOHOL TESTING

192

- **§ 192.1 What is the scope of this part?**

(a) This part prescribes minimum safety requirements for pipeline facilities and the transportation of gas, including pipeline facilities and the transportation of gas within the limits of the outer continental shelf as that term is defined in the Outer Continental Shelf Lands Act (43 U.S.C. 1331).

(b) This part does not apply to—

Certain Offshore gathering of gas in State waters, certain pipelines on the Outer Continental Shelf (OCS) that are producer-operated and cross into State waters, or upstream of transfer producer to transporting operator, certain onshore gathering, certain systems that transport only petroleum gas or petroleum gas/air mixtures

195

- **§ 195.1 Which pipelines are covered by this part?**

(a) Covered. Except for the pipelines listed in paragraph (b) of this section, this part applies to pipeline facilities and the transportation of hazardous liquids or carbon dioxide associated with those facilities in or affecting interstate or foreign commerce, including pipeline facilities on the Outer Continental Shelf (OCS).

(b) Excepted. This part does not apply to any of the following –such as a pipelines subject to safety regulations of the U.S. Coast Guard, certain pipeline offshore and OCS and many others

Pipeline Safety Act Milestones

1968: Natural Gas Pipeline Safety Act enacted, including state oversight of distribution systems

1979: Oversight for hazardous liquids added

2002: Pipeline Safety Improvement Act (PSIA)

2006: Pipeline Inspection, Protection, Enforcement, and Safety (PIPES) Act fostered damage prevention State programs and strengthened enforcement of one-call laws

2010-2011: Reauthorization pending

What to inspect: Which parts of the system does PHMSA focus on

- All aspects involved in design, construction, operations, maintenance and emergency response
- Several different types of inspections are performed by OPS and state agencies:
  - **Standard Inspections – Gas, Liquid, LNG**
  - **Operations and Maintenance Manual Reviews**
  - **Operator Qualification (OQ) Inspections**
  - **Integrity Management Inspections**
  - **Control Room Management (CRM)**
  - **Distribution Integrity Management Program (DIMP)**
  - **Construction**

Standard Inspections

- Standard inspections examine an operator's records and equipment to ensure the operator is complying with applicable regulations.
- Inspectors check a number of both current and historical operating records and parameters as well, including whether the pipeline's maximum pressure is within safe limits.
- They also examine emergency procedures to determine if operators are prepared to respond promptly and effectively if an abnormal condition or pipeline failure occurs.

Standard Inspections Cont'd

- In addition to inspecting operator records, procedures and data, inspectors make field visits to physically examine critical pipeline equipment and observe operator personnel implementing required procedures and tests. For example, on standard inspections, inspectors typically observe operator personnel:
  - Taking measurements to assure corrosion control equipment is performing effectively;
  - Testing pipeline valves to ensure they will operate in the event of an emergency; and
  - Checking the settings on instruments and equipment designed to protect against events that could overpressure the pipeline.

Standard Inspections

- During field inspections, inspectors will also observe pipeline ROW markers to ensure the pipeline is adequately marked to make excavators and others aware of its presence.
- OPS currently conducts standard inspections on every pipeline every two to three years. Pipelines that are believed to present higher potential for risk are often inspected more frequently. Standard inspections are usually completed within a single week.

Additional Details on Standard Inspections (also ties into others)

- **Gas Transmission Operators**
- **Gas Distribution Operators** (Primarily by States)
- **Liquid Pipeline Operators**
- **Liquefied Natural Gas (LNG) Facilities**
- **Breakout Tanks**
- **Gas Storage Fields**
- **Construction**
- **Gathering**

Operations and Maintenance Manual Reviews

- Operators required to have manual with established procedures dictating how O&M activities are to be performed. Some important procedures reviewed include:
  - Procedures for the proper construction, repair, testing, and maintenance of pipelines. This includes methods for repairing or replacing pipe, welding, valve maintenance, and testing and maintenance of overpressure protection devices.
  - Procedures to prevent damage to an operator's pipeline due to excavation activities, including right-of-way maintenance, maintaining line markers, participation in One-Call programs, and periodic surveillance of the pipeline right-of-way.
  - Procedures that minimize hazards from an emergency.

Operator Qualification (OQ) Inspections

- Operators required to prepare and follow an OQ program. OQ programs must:
  - Identify each operator employee or employee of a contractor hired by the operator, who performs certain safety-sensitive operations or maintenance activities on the pipeline system
  - Identify the specific tasks that each individual performs
  - Ensure each individual is tested to be certain they have the necessary knowledge, skills and abilities to perform each task, and recognize and react to emergencies that may arise while performing those tasks.

OQ inspections – cont'd

- An operator must document the process by which it achieves these objectives. OPS and state agencies perform inspections to review OQ program documentation, including the lists of individuals and tasks they are qualified to perform, records of tests, and other actions required by the plan.
- Inspections also include observation of personnel performing selected tasks, and discussions with qualified individuals and supervisors to assure that the plan is being implemented effectively.
- A structured set of inspection protocols has been developed for inspectors to follow in performing OQ inspections.

Integrity Management

- IM is both a set of regulations and an overall regulatory approach to improve pipeline operators' ability to identify and mitigate the risks to their pipeline systems
- Objectives of IM
  - Accelerate and improve the quality of integrity assessments conducted on pipelines in areas with the highest potential for adverse consequences (High Consequence Areas – HCAs);
  - Promote a more rigorous, integrated, and systematic management of pipeline integrity and risk by operators;
  - Strengthen government's role in the oversight of pipeline operator integrity plans and programs; and
  - Increase the public's confidence in the safe operation of the nation's pipeline network.

Integrity Management (IM) – cont'd

- Risk Assessment –
  - Identifying threats to individual pipelines like Corrosion? Excavators? Metal fatigue? Landslides?
  - Where will the threats do the most harm? High Consequence Areas (HCAs) prioritize investments

- Integrity Assessment – Checking the health of a buried pipeline. (Many pipelines are not easily assessed or "piggable")

- Preventative and Mitigative Measures – Protecting against threats and minimizing consequences when pipelines are damaged.

- Strong basis for continuous improvement and rationalized investment

Status of IMPs

- Hazardous Liquid – nearly through 2 assessments
- Natural Gas Transmission – through 1st cycle in 2012
- Distribution Systems – compliance began August 2011

How to inspect: What is the process when PHMSA inspects

- Publically available forms and inspection criteria
  - General inspection, annual report and incident forms http://www.phmsa.dot.gov/pipeline/library/forms
  - Other websites with more detailed guidance at end of presentation
- Additional training provided to federal and state inspectors at PHMSA's TQ facility in OKC
- All must conform to ethics guidelines.
  - DOT's ethics website: http://www.dot.gov/ethics/
  - PHMSA specific training and guidance in line with DOT

General process

- Collection of any pertinent information in advance.
  - All applicable forms, procedures, etc.
  - Other Info/background of operator in advance:
    - Pertinent info about operator and unit to be inspected
    - Summary of previous inspections (if any)
    - Compliance History
    - Any recent accident reports
    - Annual Reports
- In some cases, information/procedures from operator might be provided in advance. In most cases, conducted onsite where all the information is available and accessible for review depending on where drill down is needed.

Process – cont'd

- A kickoff meeting is typically held with the operator to explain what the inspector will be doing during the week, what is expected of the operator, and to lay out a tentative agenda for the week.
- Usually the first one to two days will be spent going through the operator's procedures and records, using the inspection form as a guide.
- The operator will have been asked by the inspector well in advance of this meeting to gather and organize the pertinent records and procedures to save time, using the inspection form questions as a guide.
- Compliance issues from prior inspections and recent safety incidents will also be covered by the inspector during this initial meeting, in an attempt to finalize these issues.

Process cont'd

- The records and procedure questions usually require meetings with various operations personnel, including those from corrosion control, SCADA, and training areas. Operating personnel may be coming and going to other meetings as different subjects are covered.
- In some cases data and answers available immediately when questions raised. In other cases, operator may need to come back with more info later.
- The inspector usually uses this initial meeting time with the operator to decide what sites to visit in the field, any past "problem sites" to visit, and plan how the field trip will proceed for the remainder of the week.

Process – cont'd

- A short wrap-up session is held at the end of the inspection to summarize the week's activities, to mention any possible compliance issues, and to list information that the operator has agreed to furnish the inspector.
- The inspector must report on all compliance issues, even those that may have been resolved during the inspection.
- Inspection report, including any compliance issues, written up and sent through region director and to HQ for processing and determination of any enforcement actions
- In cases of compliance issues, variety of actions possible including warning letters, letters of concern, notices of probable violation, compliance orders

Frequency of inspections

- Frequency dictated first by code requirements, along with relative risk determinations, priorities and resources available
- Detailed plans and inspection schedules coordinated amongst and ultimately decided by each region
- To the extent practicable, work together amongst regions to conduct inter-region and team inspections to maximize resources. Also often invite states, particularly for any systems that might be dual jurisdiction. Ultimately state decision on if/how this is done based on requirements in their specific state.

Equipment required for inspections

- All applicable forms, procedures, etc. Hardcopies and/or electronic
  - Previously conducted with primarily hardcopies, but transitioning to more electronic tools/media including use of laptops, hand held smart phone and inspection assistant programs where data can be downloaded before and uploaded later.
- Personal Protective Equipment (PPE) if needed
- Cameras for additional documentation, measurement tools, etc.

Type of corrections frequently made

- Minor corrections needed, such as modifications/changes to procedures for clarification. Sometimes these can either be done on the spot, addressed prior to the inspector leaving, or if additional internal company review/approval needed, provided to the inspector after the inspection or at the next inspection
- In cases of more significant compliance issues, variety of actions possible including warning letters, letters of concern, notices of probable violation, compliance orders (safety orders and/or corrective action orders)
- Process allows for hearings and appeal for any enforcement action.

Reporting Requirements

- By Inspector: Inspection report, including any compliance issues, written up by inspector and sent through region director and to HQ for processing and determination of any enforcement actions
- By Operator: Operator has additional, ongoing and regular reporting requirements through:
  - Annual reports
  - Accident/incident reports
  - Notification of certain changes to their system or surrounding environment(s) that could impact the system (i.e. changes in class location (for gas) or whether not in a high consequence area (HCA))
  - Any other reporting requirements based on compliance actions, special permits, etc.

How the right of way is monitored

- Some nuances depending on type of system. In general
  - Each operator shall have a patrol program to observe surface conditions on and adjacent to the right-of-way for indications of leaks (or based on severity of leaks), construction activity, and other factors affecting safety and operation.
  - Frequency of patrols is determined by the size of the line, the operating pressures, **the class location**, **terrain, weather, and other relevant factors**
  - Methods of patrolling include walking, driving, flying or other appropriate means of traversing the right-of-way.

How is general public involved in ROW and safety issues (gas)

- Federal pipeline safety regulations require pipeline operators to conduct continuing public awareness programs to provide pipeline safety information to four stakeholder audiences, including:
  - affected public,
  - emergency officials,
  - local public officials, and
  - excavators

How is general public involved in ROW and safety issues (gas)

- 192.616 Except for master meter or petroleum gas system… each operator must develop/implement written continuing public education program that follows the guidance in the American Petroleum Institute's (API) Recommended Practice (RP) 1162
- Program must specifically include provisions to educate public, appropriate government organizations, and persons engaged in excavation related activities on:
  - (1) Use of a one-call notification system prior to excavation and other damage prevention activities;
  - (2) Possible hazards associated with unintended releases from a gas pipeline facility;
  - (3) Physical indications that such a release may have occurred;
  - (4) Steps that should be taken for public safety in the event of a gas pipeline release; and
  - (5) Procedures for reporting such an event.

Public Involvement

- Public also invited and engaged through PHMSA initiatives/processes
  - Public workshops
  - Rulemaking process, including liquid and gas technical advisory committees
  - Special Permit process

How are drills organized, how often, who is involved?

- Conducted in accordance with Emergency Plans and Public Awareness Requirements (§192.615 and §192.616)
- Exactly how differs from operator to operator, community to community
- In order to comply with the regulatory requirements specified in the natural gas regulations under 49 CFR §192.616, pipeline operators are required to conduct periodic Public Awareness Program (PAP) effectiveness evaluations no more than four years apart following the effective date of program implementation

Incident Management – Company

- Emergency plans (more in **§ 192.615 Emergency plans)**
  - (a) Each operator shall establish written procedures to minimize the hazard resulting from a gas pipeline emergency. At a minimum, the procedures must provide for the following:
    - (1) Receiving, identifying, and classifying notices of events which require immediate response by the operator.
    - (2) Establishing and maintaining adequate means of communication with appropriate fire, police, and other public officials.

Incident Management - Company

- (3) Prompt and effective response to a notice of each type of emergency, including the following:
  - (i) Gas detected inside 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.
- (4) The availability of personnel, equipment, tools, and materials, as needed at the scene of an emergency.

Incident Management - Company

- (5) Actions directed toward protecting people first and then property.
- (6) Emergency shutdown and pressure reduction in any section of the operator's pipeline system necessary to minimize hazards to life or property.
- (7) Making safe any actual or potential hazard to life or property.
- (8) Notifying appropriate fire, police, and other public officials of gas pipeline emergencies and coordinating with them both planned responses and actual responses during an emergency.
- (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) Actions required to be taken by a controller during an emergency in accordance with §192.631.

Incident Management - Company

- (b) Each operator shall:
  - (1) Furnish its supervisors who are responsible for emergency action a copy of that portion of the latest edition of the emergency procedures established under paragraph (a) of this section as necessary for compliance with those procedures.
  - (2) Train the appropriate operating personnel to assure that they are knowledgeable of the emergency procedures and verify that the training is effective.
  - (3) Review employee activities to determine whether the procedures were effectively followed in each emergency.

Incident Management - Company

- (c) Each operator shall establish and maintain liaison with appropriate fire, police, and other public officials to:
  - (1) Learn the responsibility and resources of each government organization that may respond to a gas pipeline emergency;
  - (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; and
  - (4) Plan how the operator and officials can engage in mutual assistance to minimize hazards to life or property.

Incident Management - Regulator

- PHMSA Regions and HQ monitor incidents/telephonics reported to National Response Center
- Depending on nature of the incident and jurisdiction PHMSA may follow-up via phone or email to operator (if PHMSA jurisdiction) or through State (if State jurisdiction)
- If needed/requested will go onsite

Incident management

- Who does what?
  - For more significant incidents, incident command center set-up
  - Who does what depends, but coordinated through emergency response personnel, etc
  - From federal/regulatory side depends on who has lead jurisdiction, who is leading investigation (i.e. if others like National Transportation Safety Board (NTSB), ATF, OSHA, etc onsite)

Incident Management

- How does PHMSA communicate with media
  - If PHMSA lead jurisdictional authority, coordinated through PHMSA's Public Affairs group
  - If other agency lead authority, defer to other agency

PHMSA/NASFM Initiatives

- PHMSA has partnered with the National Association of State Fire Marshals (NASFM) and others to develop and provide important information. This includes:
  - Pipeline Emergencies offers a comprehensive, integrated emergency response training program designed to teach emergency responders and pipeline industry personnel to safely respond and effectively manage pipeline incidents.
  - NASFM Emergency Response Bulletin: NASFM issues bulletins to provide information that will be of importance to fire marshals, potential incident commanders, fire service instructors, fire chiefs and other emergency response personnel.

PHMSA/NASFM Initiatives

- The Partnership for Excellence in Pipeline Safety is a first-of-its-kind program that develops and facilitates pipeline accident-response training and public education programs to help “spread the word” on pipeline safety across America. The Partnership set a goal of zero pipeline incidents.

Cathodic Protection and Corrosion Control

- Part 192 Subpart I covers Requirements for Corrosion Control for the protection of metallic pipelines from external, internal, and atmospheric corrosion
- Multiple sections requiring
  - General requirements following installation
  - Type of protective coating(s) and CP system
  - Monitoring
  - Protecting against interferences currents
  - Remedial measures
  - Direct Assessment
  - Corrosion Control Records

Some Useful Links

- **PHMSA OPS Website**: http://www.phmsa.dot.gov/pipeline
- **Electronic Code of Federal Regulations**: http://ecfr.gpoaccess.gov/
- **Stakeholder Communications**: http://primis.phmsa.dot.gov/comm/
- **Pipeline Safety Guidance –Advisory Bulletins, Low Strength Pipe Guidelines, MAOP Rule FAQs:** http://www.phmsa.dot.gov/pipeline/guidance
- **Pipeline Construction Website:** http://primis.phmsa.dot.gov/construction/index.htm
- **PHMSA Standards and Rulemaking:** **http://www.phmsa.dot.gov/pipeline/regs**
- **PHMSA Inspection:** **http://primis.phmsa.dot.gov/comm/InspectionEnforcement.htm**
- **PHMSA Enforcement:** **http://www.phmsa.dot.gov/pipeline/enforcement**

More Information, FAQs, etc

- Liquid IMP: http://primis.phmsa.dot.gov/iim/index.htm
- Gas IMP: http://primis.phmsa.dot.gov/gasimp/
- DIMP: http://primis.phmsa.dot.gov/dimp/
- CRM: http://primis.phmsa.dot.gov/crm/
- All subject to change based on new information.

Questions

Thank you!