U.S. Department of Transportation
Pipeline and Hazardous Materials
Safety Administration

Pipeline Data

Read-ahead presentation for the PHMSA Pipeline Data Public Meeting October 29-30, 2012

Summarize Data Collected by the Office of Pipeline Safety (OPS)
Quality Control Challenges
Report-back on PHMSA 2009 Data Quality Report

Acronyms

GD	Gas Distribution
GG	Gas Gathering
GT	Gas Transmission
HCA	High Consequence Area
HL	Hazardous Liquids
IM	Integrity Management
LNG	Liquefied Natural Gas
MAOP	Maximum Allowable Operating Pressure
NPMS	National Pipeline Mapping System
OMB	Office of Management and Budget
OpID	OPS-Issued Operator Identification Number
OPS	Office of Pipeline Safety
OQ	Operator Qualification
SRCR	Safety-Related Condition Report

OPS Data Collections

- From Operators using OMB-approved Forms & Instructions
  - Annual, Incident, National Registry, etc
- From Operators without a Form
  - NPMS, SRCR, Notifications – IM, OQ, Alt MAOP
- From certified State Pipeline Safety Partners
  - Operators, Inspections, Staffing, Enforcement
- Generated internally
  - Inspection, Enforcement, Units & Inspection Systems, User Fee

Pipeline Data Public Meeting and the remainder of this presentation will focus on data collected from Operators

Reports excluded from this .ppt

- Drug & Alcohol Management Information Systems (DAMIS)
  - Reported on form managed by DOT
  - Drug testing results in Part 199.119
  - Alcohol testing results in Part 199.22
- Immediate Notice of Incidents/Accidents
  - Required by Parts 191.5 and 195.52
  - Reports made to National Response Center (NRC)
- Offshore Pipeline Condition Reports
  - Required by Parts 191.27 and 195.57
  - NPRM in Docket PHMSA-2010-0026 proposes to delete these code sections

Reporting Methods and Form Access

- SRCR and Notifications (IM, OQ, & Alt MAOP) have no form and are submitted to InformationResourcesManager@dot.gov
- NPMS Submittal Instructions
- All other reports:
  - Online entry through the PHMSA Portal
  - Forms and Instructions
- Operators are required to use a consistent OpID for all submittals – see Part 191.22(d) and 195.64(d)

National Pipeline Mapping System

- Statute requires GT, HL, and LNG operators to submit geospatial data and update/confirm annually
- On May 17, 2011, PHMSA published Advisory Bulletin 11-03 asking for NPMS submittals to be synchronized with the annual report submissions
- NPRM in Docket PHMSA-2010-0026 proposes to add NPMS reporting requirement and due date to regulations. Final Rule expected in December 2012.

GD Annual Report

- Pipeline assets as-of the end of a calendar year due by March 15
- Miles of Main and Service count by pipe diameter range
- Miles of Main and Service count by decade of installation
- Hazardous leaks and total leaks repaired by cause
- Excavation Damage – # damages and # excavation tickets
- Excess Flow Valves installed on single-family residences and total in system
- Leaks on Federal land
- Percent unaccounted for gas

GT GG Annual Report

- Pipeline assets as-of the end of a calendar year due by March 15
- Separate reports for each commodity
- Volume transported for interstate pipelines
- IM assessment and repair
  - All States combined for interstate pipelines
  - By-State for intrastate pipelines
- GT and GG data separately reported
  - GT reported for Onshore and Offshore
  - GG reported for Type A, Type B, and Offshore
- Miles of steel pipe by coated/bare and cathodically protected/ unprotected and miles of non-steel pipe by material

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GT GG Annual Report (continued)

- By-State and by-Inter/Intra with GT data Onshore/Offshore
  - Miles by nominal pipe size
  - Miles by decade of installation
  - Miles of GT by % specified minimum yield strength
  - Miles by class location with HCA miles for GT
  - GT incidents in HCA by cause
  - Failures and leaks with separate HCA reporting for GT
  - Known leaks scheduled for repair and leaks on Federal land
- Active Information Collection includes proposal to add data on adequacy of MAOP records, pressure test history, and ability to accommodate in-line inspection

HL Annual Report

- Pipeline assets as-of the end of a calendar year due by June 15
- Separate reports for each commodity
- Volume transported in barrel-miles
- Miles of steel pipe by coated/bare and cathodically protected/unprotected and onshore/offshore
- Miles of electric resistance welded pipe by weld type and decade
- IM assessment and repair
  - All States combined for interstate pipelines
  - By-State for intrastate pipelines

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HL Annual Report (continued)

- By-State and by-Inter/Intra
  - Miles by nominal pipe size and onshore/offshore
  - Miles by decade of installation
  - Miles of "trunkline" by % specified minimum yield strength and onshore/offshore/rural low-stress
  - Miles of regulated gathering by % specified minimum yield strength
  - HCA miles by HCA type
  - Breakout tanks by volume capacity range

LNG Annual Report

- LNG plants as-of the end of a calendar year due by March 15
- Required for both permanent and mobile plants
- Type and function of plant, LNG source, Interstate/Intrastate
- Location, facility type(s), and storage capacity
- Incidents and leaks by cause
- Number of SRCR and other events:
  - Rollover
  - Security breach
  - Emergency shutdowns
  - Insulation degradation

Mechanical Fitting Failure Report

- GD only - required for certain fitting failures that result in a hazardous leak – reporting began in CY 2011
- Count of mechanical fitting failures resulting in a hazardous leak is reported, by-cause, on the annual report. Separate, detailed report includes information about each failure:
  - Geographic location and date
  - Type of fitting
  - Location of fitting in the system
  - Year installed and manufacturer
  - Fitting and pipe - material and size
  - Cause of leak and leak path
- Over 8,000 reports submitted for CY 2011 – batch upload is now available

Incident Reports

- Required by PHMSA regulations for GD, GT/GG, HL, and LNG within 30 days of failure
- Supplemental reports required when information changes
- Forms revised for calendar year 2010 collection with more sub-cause categories
- For Excavation Damage, collect data based on the Common Ground Alliance (CGA) Damage Information Reporting Tool (DIRT)
- Environmental Cracking, including Stress Corrosion Cracking, added as Cause category for GT and HL
- Narrative included with each report and documents can be attached

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Incident Reports (continued)

- Location information, including GIS coordinates and part of the pipeline system
- Consequences, including fatality, injury, property damage, lost product, evacuations
- Material type and nature of failure – leak or rupture
- Supervisory Control and Data Acquisition (SCADA) information
- Drug & Alcohol testing information
- Cause & sub-cause along with additional data pertinent to each cause

National Registry Validation

- All OpID in existence before 1/1/2011 were required to validate certain data by 9/30/2012
- Verify System Types (GD, GT, GG, HL, LNG) and States of operation
- Operators implementing a pipeline safety program shared by multiple operators must select a Primary OpID for the safety program
- Update Contacts for the operator
  - Operators can update Contacts at any time in the PHMSA Portal

National Registry Notifications

- Operators required to notify PHMSA either 60 days in advance of or 60 days after certain events
  - Change to the legal name for the OpID
  - Change in the operator for a pipeline system
  - Change in Primary OpID for a pipeline safety program
  - Certain acquisitions and divestitures
  - Certain pipeline system rehabilitations or upgrades
  - Certain new construction
- Details in Part 191.22(c) for gas and Part 195.64(c) for liquids

Safety-Related Condition Reports

- Conditions that must be reported include:
  - Certain general corrosion
  - Unintended movement or material defect that impairs serviceability
  - Certain pressure increases above allowed pressure
- Details in Part 191.23(a) for gas and Part 195.55(a) for liquid
- Exceptions to reporting based on pipeline location and timing of corrective action – see details in Part 191.23(b) or Part 195.55(b)
- Information to be submitted includes date, location, description of condition, and corrective action taken and planned – see details in Part 191.25(b) or Part 195.56(b)

Notifications – IM, OQ, Alt MAOP

- IM Notifications required by PHMSA regulations for GT and HL for certain changes to the IM program, implementation delays, and use of assessment technology not specifically listed in the regulations
- OQ Notification for substantial change to written program required by statute and PHMSA regulation
- Alt MAOP Notification pre-construction to alert OPS Regions/State Partners of "80% SMYS in class 1" construction plans

Data Quality Challenges

- NPMS – GT Interstate vs Intrastate
- GT/GG Incident Reports - identifying GT vs GG
- GT and HL IM Repairs
- GT and HL Mileage
- GT and HL HCA Miles
- GT and HL Stress Corrosion Cracking Failures
- GT Cast Iron Mileage
- GD Excavation Damages
- HL Accident Volume Released
- GT Incidents in HCAs

Data Quality Challenges

NPMS – GT Interstate vs Intrastate

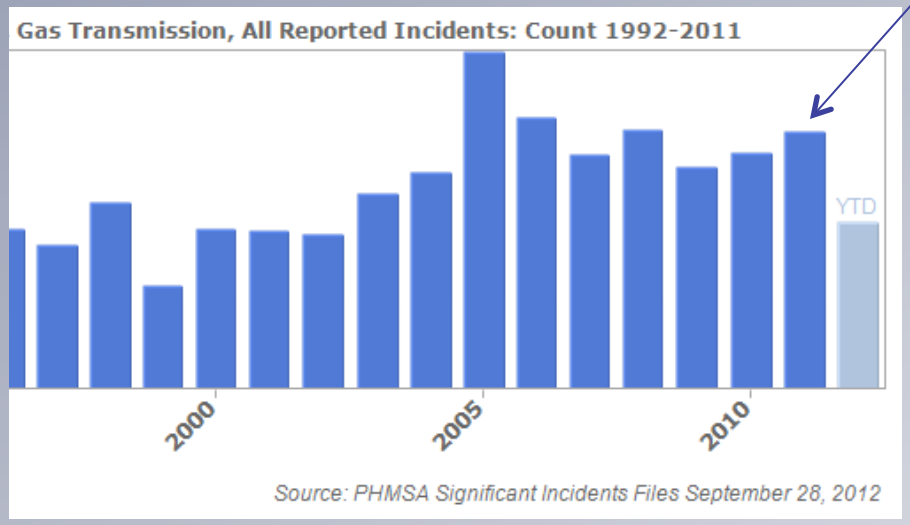
- For GT, whether the pipeline crosses a State boundary has nothing to do with whether the pipeline is Interstate or Intrastate.
- If a GT pipeline has a FERC certificate, it is Interstate
- Although quality has improved in recent years, some GT operators are still submitting/confirming incorrect Inter/ Intra status
- Causes confusion between OPS (regulatory authority for Interstate) and State Partners (regulatory authority for Intrastate)

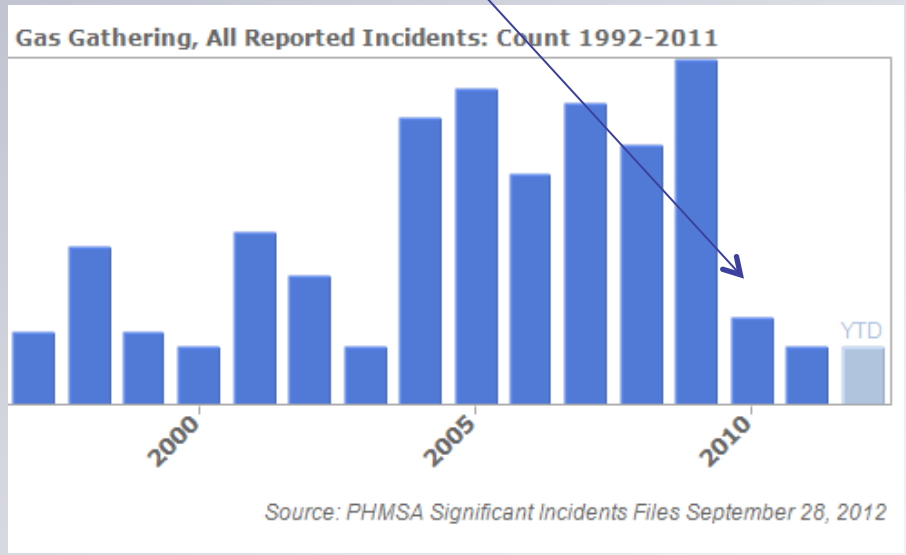
PHMSA Corrective Action

PHMSA requests NPMS updates from operators

Data Quality Challenges
GT/GG Incident Reports identifying GT vs GG

- Starting 1/1/2010, reports for system portion other than "Pipe" are assumed to be all GT and none GG





PHMSA Corrective Action

Active Information Collection to require identification of GT or GG on every incident report. PHMSA plans to request that operators submit supplemental reports after the form change is approved.

Data Quality Challenges

GT and HL IM Repairs

- GT operator with zero HCA miles had reported ~25% of the CY 2010 national total for repairs in HCAs
- GT operator with ~0.2% of the CY 2010 national total for HCA miles had reported ~25% of the repairs in HCAs
- HL operator with ~1.7% of the CY 2010 national total for HCA miles had reported ~46% of the 180-day condition repairs
- HL operator with ~0.1% of the CY 2010 national total for HCA miles reported ~7% of the 180-day condition repairs

PHMSA Corrective Action

PHMSA requested supplemental annual reports from operators

Data Quality Challenges

GT and HL Mileage

- Total Mileage is reported in several different parts, or combinations of parts, in the annual report
- In March 2012, the CY 2010 HL "total" mileage differed by over 4,000 miles when comparing Part D and Part J. At the end of September 2012, they still differ by 850+ miles.
- In March 2012, the CY 2010 GT "total" mileage differed by over 3,200 miles when comparing Part H and Parts D+E. At the end of September 2012, they still differ by 200+ miles.

PHMSA Corrective Action

Requested supplemental reports and adjusted on-line consistency checks for CY 2011 data entry
CY 2011 HL Part D and Part J differ by ~8 miles
CY 2011 GT Part H and Parts D+E differ by ~69 miles

Data Quality Challenges

GT and HL HCA Miles

- Total HCA miles is reported in Part B and by-State/by-Inter/Intra in Part L
- In May 2012:
  - HL HCA miles differed by 76 for CY 2010
  - GT HCA miles differed by 394 for CY 2010 and 129 for CY 2011
- In September 2012:
  - HL HCA miles still differ by 76 for CY 2010 and match for 2011
  - GT HCA miles differ by 260 for CY 2010 and 80 for CY 2011

PHMSA Corrective Action

Requested supplemental reports and modified online logic for CY 2011 HL annual reports.

In future years, there will be no data entry in Part B. Data entered in Part(s) L will be summed and displayed in Part B.

Data Quality Challenges

GT and HL Stress Corrosion Cracking Failures

- For incident/accident reporting from 2010 forward, the cause of Stress Corrosion Cracking (SCC) was moved from the Corrosion category to a new Environmental Cracking category
- Two GT and two HL reports specified SCC in a comment field under the Corrosion cause

PHMSA Corrective Action

Requested supplemental reports

Data Quality Challenges

GT Cast Iron Mileage

- In March 2012, CY 2010 GT annual reports included 2,988 miles of Cast Iron pipe
- In October 2012, the CY 2010 value is 81 miles
- In October 2012, the CY 2011 value is 59 miles

PHMSA Corrective Action

Requested supplemental reports

Data Quality Challenges

GD Excavation Damages

- Part D of the GD annual report includes number of excavation damages and the number of excavation tickets
- In April 2012, a GD operator had reported 50 tickets and 6,609 damages for CY 2010
- In October 2012, 33 GD operators report 1,000 or more damages per 1,000 tickets for CY 2010
- In October 2012, 23 GD operators report 1,000 or more damages per 1,000 tickets for CY 2011

PHMSA Corrective Action

Requested supplemental report from operator with 132,180 damages per thousand tickets. Relying on State Partners to request supplemental reports from operators.

Data Quality Challenges

HL Accident Volume Released

- In 2010 for all commodities, began collecting intentional release volume in addition to unintentional volume
- Public display adds intentional and unintentional volumes as spill size post-2010, but pre-2010 spill size is only unintentional release volume
- Post-2010, several CO_2 accidents have had immense intentional release volumes

PHMSA Corrective Action

Active Information Collection to collect intentional release volume for CO_2 and HVL only. Subsequently, begin displaying unintentional release volume as spill size.

Data Quality Challenges

GT Incidents in HCAs

- Collected on both Incident Reports and Annual Reports

		Incidents per 10,000 HCA Miles	
Year	HCA Miles	Incident Reports	Annual Reports
2011	20,325.25	5.41	4.92
2010	20,017.11	4.50	2.50
2009	19,139.13	3.13	3.13
2008	19,582.78	4.60	4.09
2007	19,282.28	4.15	3.11
2006	19,949.21	3.51	5.51
2005	20,561.31	1.95	4.86
2004	21,764.93	2.30	4.14

PHMSA Corrective Action

Active Information Collection to remove reporting from CY 2012 annual reports. Request supplemental reports pre-2012 to align numbers from incident and annual reports.

Report-back on 2009 PHMSA Data Quality Assessment

- PHMSA vigorously pursues supplemental reports when incident/accident reports specify a cause of Other
- Developing more rigorous internal failure investigation data collection
  - Integrated with inspection planning
  - Able to document data/conclusions that may differ from what the operator reports
- Investigating Voluntary Reporting to gather leading indicators
- Establishing Data Management Procedures for each data set to further improve data quality and completeness