

# PODS™

Pipeline Open Data Standard

## Regulatory Developments for Pipeline Recordkeeping

**W. R. (Bill) Byrd, P. E.**  
**President**  
**RCP Inc.**  
**[wrb@rcp.com](mailto:wrb@rcp.com)**



Okay, people, let's get started on our orientation. I have 666 PowerPoint slides to cover.



Welcome  
to Hell

presented by Satan

# Pipeline Recordkeeping Issues and Developments

- Basic regulatory requirements
- Enhanced expectations after PG&E San Bruno incident
  - NTSB recommendations to PG&E, CPUC, and PHMSA
  - PHMSA Advisory Bulletin
- Advance Notice of Proposed Rulemaking
  - Gathering Pipeline Exemptions
  - Data Integration
- Pipeline Safety Act Reauthorization

# Pipeline Regulatory Background

- US DOT PHMSA establishes minimum safety requirements for natural gas and hazardous liquid pipelines in 49 CFR Parts 190-199.
- These regulations govern pipeline design and construction, protection from corrosion, pressure testing requirements, operation and maintenance, qualification of pipeline personnel, and integrity and risk management practices.
- The regulations include recordkeeping requirements
  - .... but not retroactively!
- States may have their own programs for intra-state pipelines

# Regulatory Background - Records

- The **majority** of pipelines in the US were built prior to the development of federal pipeline safety regulations (a.k.a. “grandfathered” pipe). There was no requirement to create or keep the construction and testing records for these pipes.
- Some pipelines have been exempted at various times from the federal pipeline safety regulations, such as low stress, rural, and gathering pipelines. These exemptions have become narrower over time, and previously exempted pipe may now be regulated... with similar recordkeeping problems as grandfathered pipe.
- Some records simply get lost over time due to asset sales, corporate restructurings, etc. etc. etc.

# Today's Regulatory Climate - Records

- Recent pipeline safety incidents have resulted in increased scrutiny of the nation's pipeline regulations, and PHMSA's compliance and enforcement activities.
- The PG&E San Bruno incident has brought to light the criticality of good pipeline **data management** systems and practices.
- PHMSA, NTSB, and the CPUC have all recently required **much better recordkeeping for ALL** regulated pipelines in order to determine the correct Maximum Allowable Operating Pressure (MAOP)
- The game has changed, even for "grandfathered" pipe

# MAOP Purpose

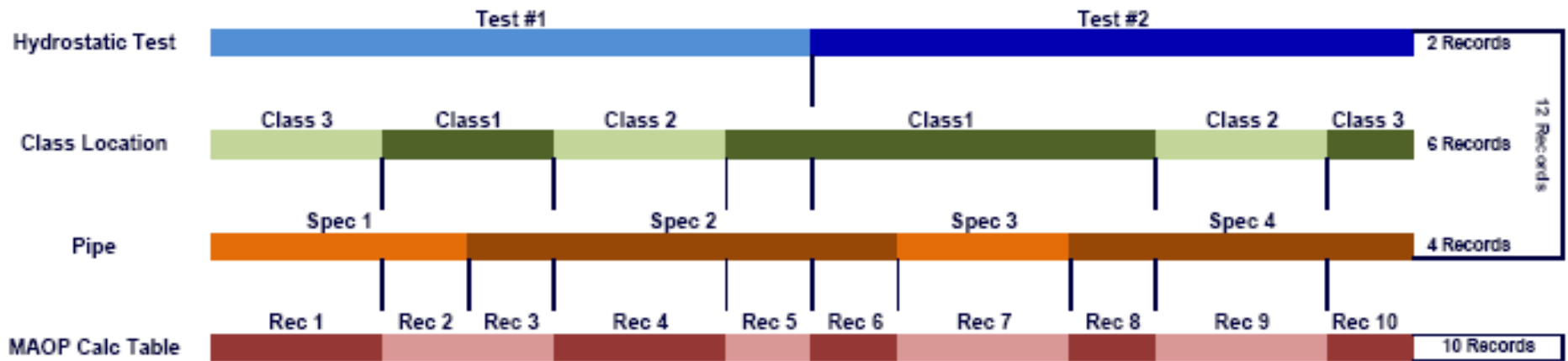
Find the highest pressure in which a pipeline segment or combination of segments can be *safely* operated without design / material failure.

Sounds simple enough ...



# Typical Transmission Data

From Measure – To Measure



Which Record has the lowest MAOP?

# Data Challenges

## Data Irregularities

- Multiple versions of data
  - Alignment sheets
  - As-built drawings
  - Hydrotest charts / reports
  - Purchase orders
- Multiple storage locations
  - Central file room
  - GIS
  - Engineer desk
  - Field offices
  - In my head

## Data Quality

- 1<sup>st</sup> Tier
  - Original test reports (mill tests, hydro reports w/dead weight log & charts)
- 2<sup>nd</sup> Tier
  - As-built drawings
  - Copies of test reports
- 3<sup>rd</sup> Tier
  - PO / receipt / delivery
  - Inspection reports
- 4<sup>th</sup> Tier
  - AFE's / requisitions

# What's the Problem?

*Industry needs to minimize the complexity and reduce the effort, confusion and possible error associated with managing the MAOP of complex and changing pipeline systems.*

## NTSB to PG&E

1. Aggressively and diligently search for all as-built drawings, alignment sheets, and specifications, and all design, construction, inspection, testing, maintenance, and other related records, including those records in locations controlled by personnel or firms other than PG&E, relating to pipeline system components, such as pipe segments, valves, fittings, and weld seams for PG&E natural gas transmission lines .... These records should be traceable, verifiable, and complete. (P-10-2) (Urgent)
2. Use the traceable, verifiable, and complete records ... to determine the valid maximum allowable operating pressure...
  - [http://www.nts.gov/news/events/2011/san\\_bruno\\_ca/index.html](http://www.nts.gov/news/events/2011/san_bruno_ca/index.html)

# PHMSA Advisory Bulletin ADB 11-01

Jan 4, 2011:

- *“operators relying on the review of design, construction, inspection, testing and other related data to calculate MAOP or MOP **must assure that the records used are reliable.** An operator must diligently search, review and scrutinize documents and records, including but not limited to, all as-built drawings, alignment sheets, and specifications, and all design, construction, inspection, testing, maintenance, manufacturer, and other related records. These records shall be **traceable, verifiable, and complete.**”*

# AGA MAOP Records Whitepaper: Oct 2011

Look in: central archives, warehouses and company facilities formerly and currently used for engineering, construction, operations and maintenance, pipeline integrity, mapping, purchasing, and records storage... employees, retirees and contractors ... local regulatory agencies.

Determine how the search results will be cataloged to keep track of which records have been found for each pipeline segment. It is important to use a database or GIS to **tie physical records to applicable pipeline segments.**

# Potential Issues: ANPRM - Gathering Pipelines

PHMSA issued an Advanced Notice of Proposed Rulemaking (ANPRM) on August 25, 2011, indicating a significant increase in the regulation of gathering lines is being considered. Should PHMSA:

*... include a new definition for the term gathering line?*

*... require the submission of annual, incident, and safety-related conditions reports by the operators of all gathering lines?*

*... consider establishing a new risk-based regime of safety requirements for large-diameter, high-pressure gas gathering lines in rural locations?*

*... enhance its requirements for internal corrosion control for gathering pipelines?*

*... apply its Gas Integrity Management Requirements to Onshore Gas Gathering Lines?*

# Potential Issues: ANPRM – Data Integration

*“Should PHMSA make current requirements more prescriptive so operators will strengthen their collection and validation practices necessary to implement significantly improved data integration and risk assessment practices?”*

*“Is data integration used on alignment maps and layered in such a way that technical reviews can identify integrity-related problems and threat interactions?”*

# ANPRM – Data Integration

....a **robust database** that includes:

- pipe diameter,
- wall thickness,
- grade and seam type;
- pipe coating;
- girth weld coating;
- maximum operator pressure (MOP);
- HCAs;
- hydrostatic test pressure including any known test failures;
- casings;
- any in-service ruptures or leaks;
- ILI surveys including high resolution magnetic flux leakage (HR-MLF), HR-geometry/caliper tools;
- close interval surveys;
- depth of cover surveys;
- rectifier readings;
- test point survey readings;
- alternating current / direct current (AC/DC) interference surveys;
- pipe coating surveys;
- pipe coating and anomaly evaluations from pipe excavations,
- SCC excavations and findings;
- pipe exposures from encroachments

# PHMSA Reauthorization

Senate & House bills have similar MAOP language

- Establishment of Records: Not later than 6 months after the date of enactment, the Secretary shall require pipeline operators to conduct a verification of records for all gas transmission lines in class 3 & 4 locations and class 1 & 2 HCAs that accurately reflect the pipeline's physical and operational characteristics and confirm the maximum allowable operating pressure of those pipelines.
- Reporting: Not later than 18 months after enactment, operators shall submit to the Secretary documentation of all gas transmission pipelines in class 3 & 4 locations and class 1 & 2 HCAs where the records are not sufficient to establish MAOP.

# Questions?

W. R. (Bill) Byrd, PE

President

RCP Inc.

801 Louisiana Street, Ste. 200

Houston, Texas 77002

(713) 655-8080

Email: [wrb@rcp.com](mailto:wrb@rcp.com)