

T&Q Pipeline Safety Seminar

80% Special Permit Pipelines

US DOT, PHMSA, Southwest Region

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Project Manager**

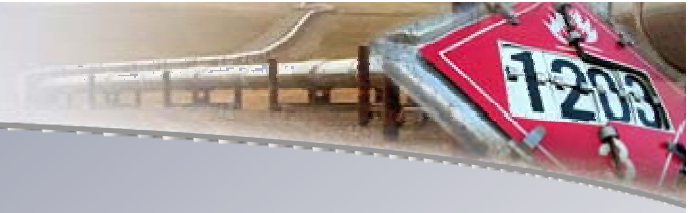
New Orleans, La.

July 2009



MAOP Rule Overview

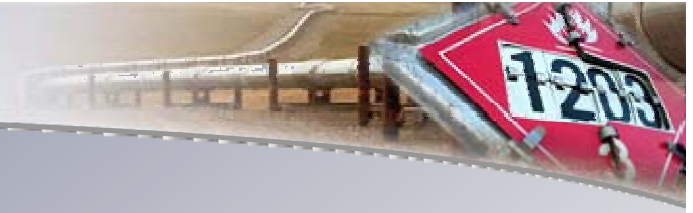
- 1. History and Special Permit Experience**
- 2. Rulemaking**
- 3. Next Steps**



MAOP Rule Overview

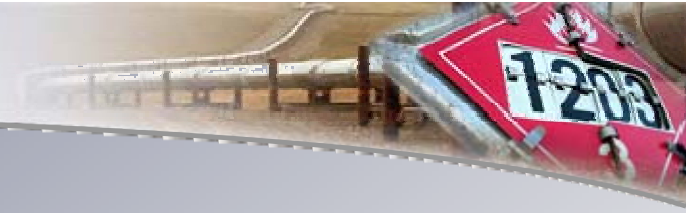
1. History

- **Public Meeting, March 21, 2006**
- **Developed the life cycle management approach**
- **Special Permits, July 2006**
 - **Alliance**
 - **Maritimes and Northeast**
 - **Rockies Express**



Provisions for Life Cycle Management

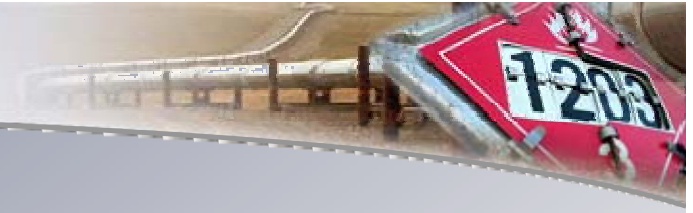
- Mill Hydrostatic Test
- Pipe Coating
- Field Coating
- Coatings for Trenchless Installation
- Bends Quality
- Fittings
- Design Factors
- Temperature Control
- Overpressure Protection Control
- Construction Plans and Schedule
- Welding Procedures
- Depth of Cover
- Construction Quality
- Construction OQ Program
- Interference Currents Control
- Test Level
- Assessment of Test Failures
- Supervisory Control and Data Acquisition (SCADA) System
- Mainline Valve Control
- Pipeline Inspection
- Internal Corrosion
- Gas Quality Monitoring
- Cathodic Protection
- Interference Current Surveys
- Corrosion Surveys
- Initial Close Interval Survey (CIS) - Initial
- DCVG Surveys
- Pipeline Markers
- Monitoring of Ground Movement
- Initial ILI
- Future ILI
- Verification of Reassessment Interval
- Direct Assessment Plan
- Damage Prevention Program
- Anomaly Evaluation and
- Condition Reporting
- Annual Reporting



MAOP Rule Overview

2. Rulemaking

- **NPRM Published, March 12, 2008**
- **Advisory Meeting, June 10, 2008**
- **Final Rule Initially published October 17, 2008**
- **New Sections: 112, 328, 620**
- **Revised Sections: 7, 611, 619**



MAOP Rule Overview

§192.112 Additional design requirements for steel pipe using alternative maximum allowable operating pressure

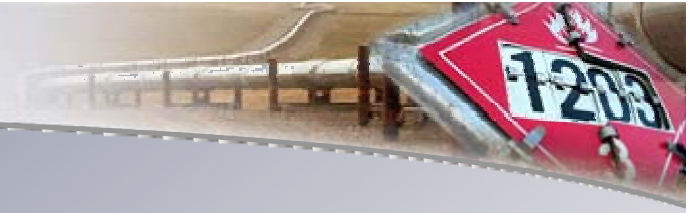
a) General standards for steel pipe, plate/coil quality control

- Findings – Yield and tensile strengths may be variable in some X-70, X-80 grades of pipe due to variable rolling temp. and cooling rate controls.
- API – Working with API and Industry to improve standards.
- PHMSA Advisory Bulletin

b) Fracture control – defined to arrest within 5 or 8 pipe joints.

c) Coating quality assurance and operating temp. controls ensures quality coatings for the life of the pipeline.

d) Shielded coatings are not allowed, such as shrink sleeves.



MAOP Rule Overview

§192.328 Additional construction requirements for steel pipe using alternative maximum allowable operating pressure

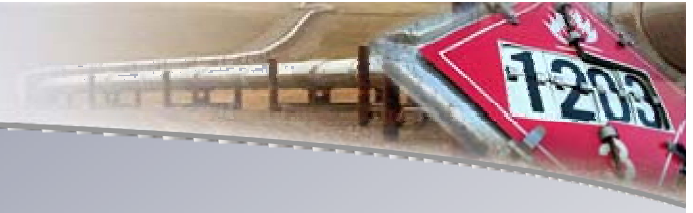
- a) Quality assurance – Construction and inspection personnel need additional training. Construction OQ Plan will be required.**
- b) Girth welds – Many cracked welds after hydrotests demonstrate problems following welding procedures including pre-heating, rods used, and proper location of repairs. Also problems with stresses during lowering operations.**
- c) Hydro testing – Found girth weld problems and low yield strength pipe through running deformation tools. Geometry tools will not identify expanded pipe in cases of low yield strength.**
- d) DCVG Surveys – Found coating and pipe damage due to improper pipe burial activities.**



MAOP Rule Overview

§192.620 Alternative maximum allowable operating pressure for steel pipelines

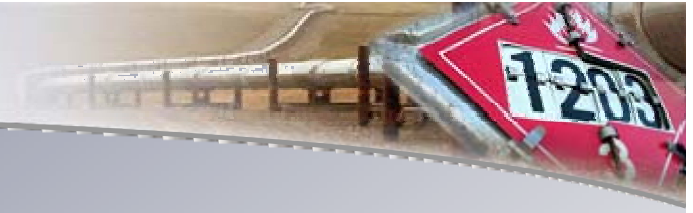
- a) 80% Class 1
- b) 67% Class 2
- c) 56% Class 3
- d) No Class 4 deviations allowed



MAOP Rule Overview

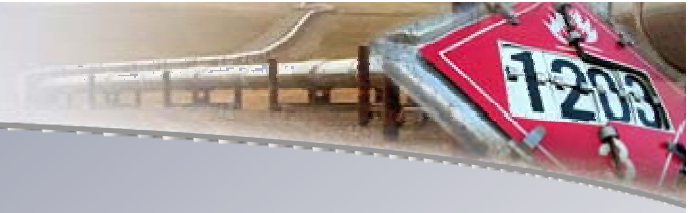
§192.620 Alternative maximum allowable operating pressure for steel pipelines

- d) What additional operation and maintenance requirements apply to operation at the alternative maximum allowable operating pressure?
- 1) Right of Way management plan including pipeline reburial for loss of depth coverage and includes monthly patrolling.
 - 2) Controlling internal corrosion through separators at all inlets, gas quality monitoring, and pigging program to remove liquids.
 - 3) Controlling external corrosion control through both ILI runs (MFL and Geometry) and CIS surveys.
 - 4) Making repairs based on more stringent criteria than required by Integrity Management Rule.



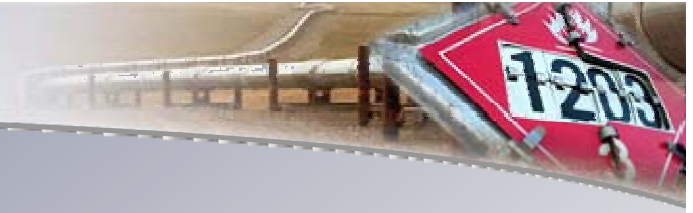
Current Regulations Compared to MAOP Final Rule

| SUBJECT | CURRENT REGULATIONS | FINAL RULE |
|----------------------------------|--------------------------------|--|
| Materials | Non Prescriptive | Prescriptive for pipe |
| Hydrotest - Mill | 90%, 10 sec | 95%, 10 sec |
| Hydrotest - Pre in service | 1.1/1.25/1.5 | 1.25/1.5 |
| Coating Type | General Requirement | Non shielding |
| Coating Temperature | No Limit | 120 degF; > allowed if testing performed |
| Cathodic Protection Verification | Non Prescriptive | Close Interval Survey |
| Coating Integrity Verification | Non Prescriptive | Direct Current Voltage Gradient |
| In Line Inspection | Not required | Required, at least 7 year interval |
| One Class Bump | Allowed (Up to 72% SMYS) | Allowed per revised 192.611 |
| Patrolling | Based on Class Location | Once per month |
| Threat Assessment | Follow IMP Guidelines | Follow IMP Guidelines |
| Right of Way Management Plan | General Requirement | Plan reqd in addition to other measures |
| Anomaly assessment and repair | Non Prescriptive outside HCA's | Prescriptive guidelines based on stress level and class bump |



MAOP Final Rule Comparison to Special Permits

- Certification by senior company executive
- Operator qualification for construction
- Right-of-way management plan
- Limited to “One Class Bump”
- Operator notification to PHMSA prior to construction initiation and operating above 72% SMYS



Thanks!

Questions?

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