Determining if Your Onshore Gathering Line is Regulated – *New* Gas Gathering Rule

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Anita Cuevas
Manager - Pipeline Integrity Programs
DCP Midstream

Agenda

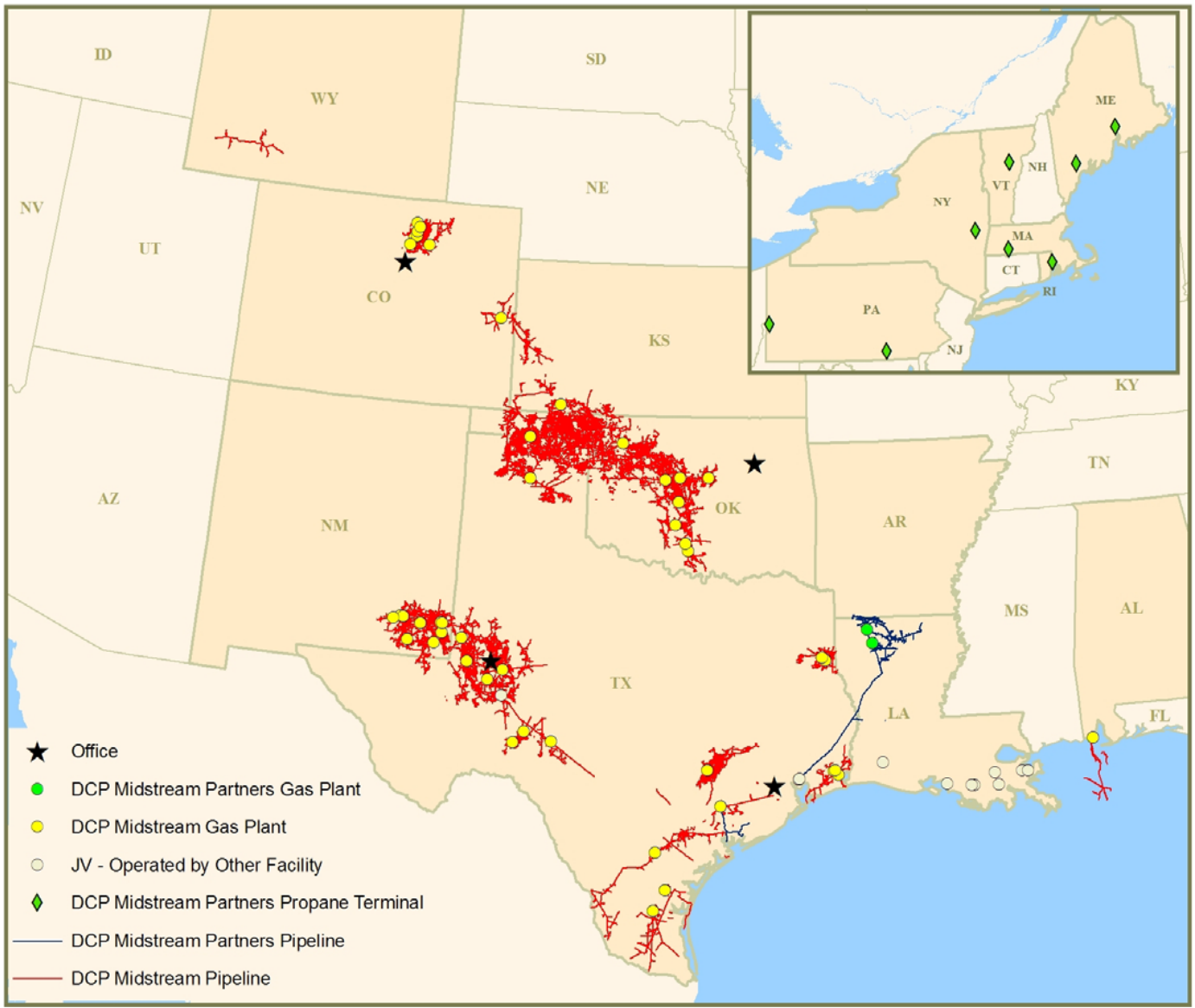
- History of Gathering Rule
- Basics of *New* Gathering Rule
- How to Determine if Gathering Line is Regulated
- Implementation Challenges
- Next Steps

Who Is DCP Midstream?

DCP Midstream

- Formerly *Duke Energy Field Services* the Company was renamed on January 1, 2007 to align with DCP Midstream Partners.
- DCP Midstream is a 50-50 joint venture between Spectra Energy and ConocoPhillips.
- Lead the midstream segment as one of the nation's largest natural gas gatherers and processors, the largest natural gas liquids (NGLs) producer and one of the largest NGL marketers in the U.S.
- Gathers/processes in 9 states, gather raw natural gas through ~56,000 miles of pipe and process gas through 52 plants

DCP Midstream Operated with DCP Midstream Partners



Introduction to Pipeline Compliance

- Pipeline and Hazardous Materials Safety Administration (PHMSA) regulates hazardous liquid and gas pipelines
- Two codes (DOT 49 CFR Part 192 and 195) dictate how pipelines must be designed, operated, and maintained for safety

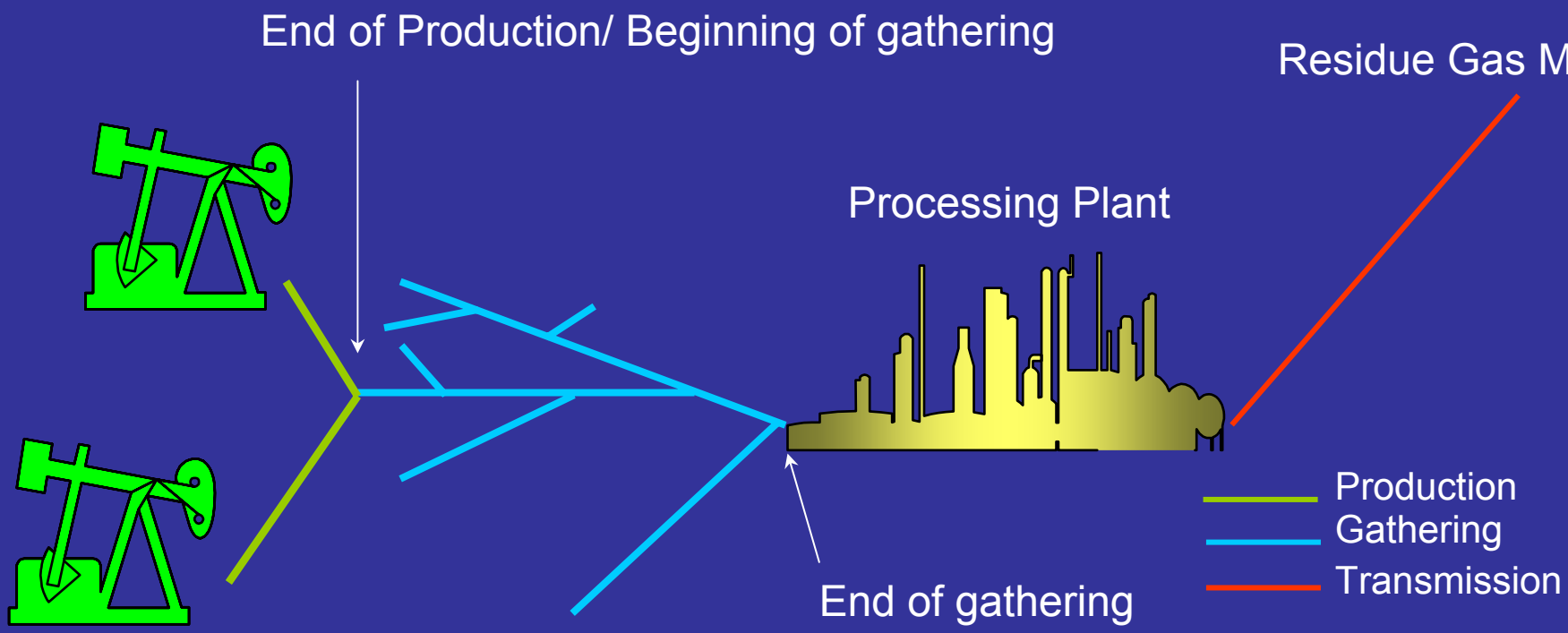
History of Gathering Definition

- The definition of "***gas gathering***" has been the subject of much discussion for over 30 years.
  - Circular Definitions existed: Gathering begins at the end of production, gathering ends at the beginning of transmission, and transmission begins at the end of gathering.
- PHMSA's safety standards did not apply to onshore gathering lines in rural locations
- Onshore gathering lines in non-rural locations had to meet the same requirements as transmission lines.

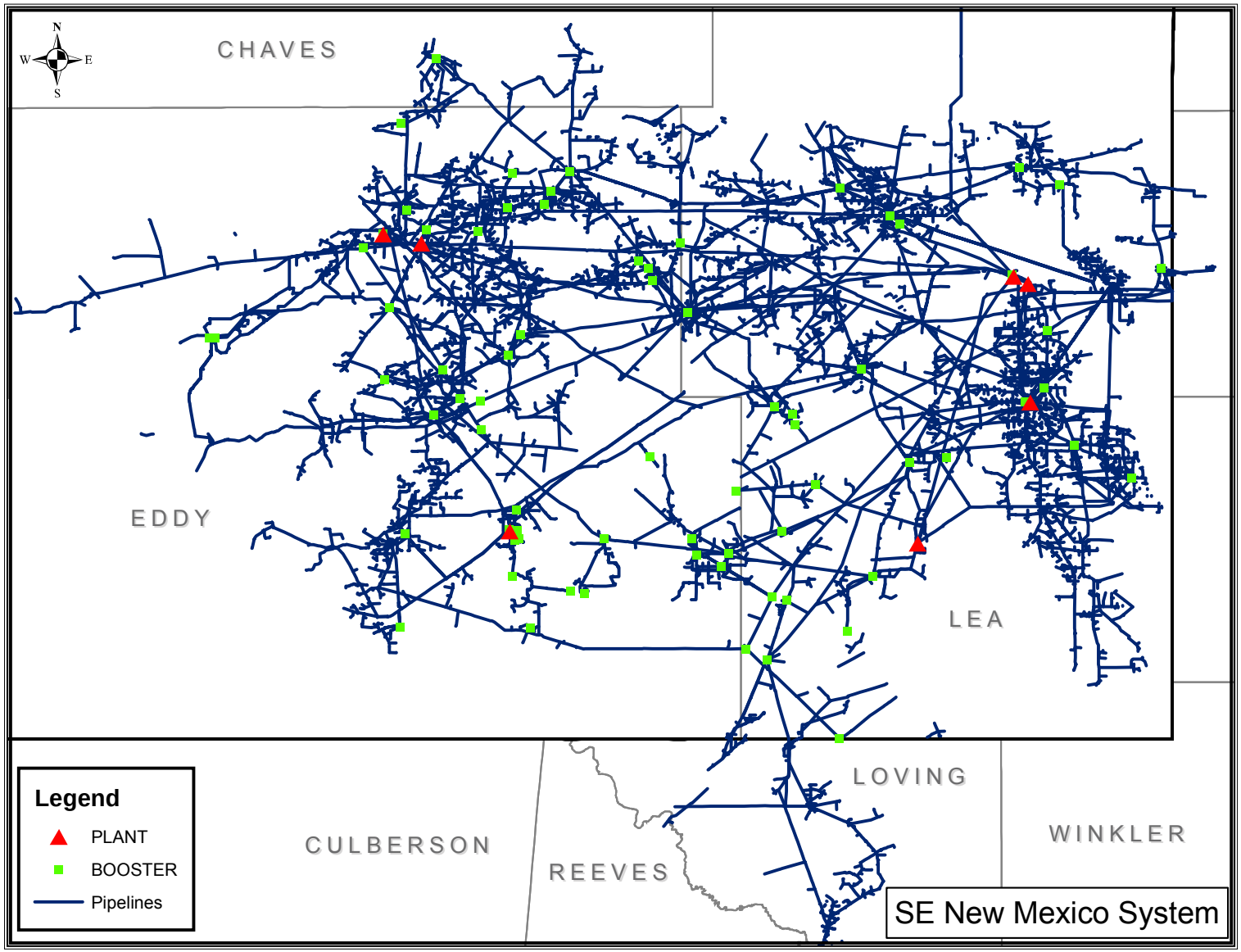
New Gas Gathering Definition

- March 15, 2006 PHMSA promulgated new onshore gas gathering definition
  - Vacuum lines are exempt, but all other gathering lines (including rural) must be evaluated
- Uses **Industry standard,** API RP-80 “Guidelines for the Definition of Onshore Gas Gathering Lines" (1st edition, April 2000)
- Became **effective** on April 14, 2006
- Allows Operators to focus resources to protect public safety

Simplistic Explanation of New Definition



Gathering Systems are Complex



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What Has Changed?

Old way

Gathering lines were subject to 192 if

- the line was located within the limits of an incorporated or unincorporated city town, or village
- the line was located in a designated residential or commercial area such as a subdivision, business, shopping area, or community development

What Has Changed?…..
Risk Based Public Safety Focus

New way

Gathering lines subject to 192 will be determined by Class location and Type

- Operators will evaluate pipelines using class location definitions. (look for populated areas where there is risk to the public)

Is it Regulated?

- All gathering lines in class 2, 3, and 4 areas will be regulated.
- Determining what regulations apply will depend on the Type (A or B).
- Type is a risk identifier and is based on hoop stress as a percent of SMYS for steel, and MAOP for non-steel pipelines.

Class Locations §192.5

An area extending 220 yards (660 feet) on either side of the centerline of the pipeline and continuous for 1 mile where:

- Class 1 – 10 or fewer buildings intended for human occupancy
- Class 2 – more than 10 but fewer than 46 buildings

Class Locations §192.5 (cont)

- Class 3 – 46 or more buildings, or where the pipeline lies within 100 yds of either a building or a small, well-defined outside area (such as a playground, recreation area, outdoor theater, or other place of public assembly) that is occupied by 20 or more persons on at least 5 days a week for 10 weeks in any 12-month period.
- Class 4 – buildings with four or more stories above ground are prevalent.

Regulated Gathering Lines – Type A

- ≥ 20% SMYS for steel lines; or
- Above 125 psig for non-metallic lines
- And Class 2, 3, or 4 under §192.5

Regulated Gathering Lines – Type B

- < 20% SMYS for steel lines; or ≤ 125 psig for non-metallic lines
- And Class 3, or 4 under §192.5,
- Or if Class 2, meets dwelling density using 1 of 3 methods:
  a) Class 2 under §192.5
  b) Area extending 150 ft on either side of pipeline for continuous 1 mile containing 11 to 45 dwellings
  c) Area extending 150 ft on either side of centerline for continuous 1000 ft containing 5 or more dwellings

Determining Hoop Stress as % of SMYS

- Barlow's Formula is the common method for determining hoop stress in the wall of a pipe.

Hoop Stress = PD / 2t

- Solving for Pressure and using the yield strength for the pipe results in a formula that looks a lot like the §192 design formula.

P = 2t * S / D

- This will give you the pressure that results in 100% Hoop Stress or the pressure at 100% SMYS. Dividing your MAOP by this pressure will give you the maximum % SMYS that the pipeline is operated at.

Example Calculation

- 4 inch pipeline (OD = 4.5), wall thickness 0.188 (t = 0.188), MAOP = 720 psi, SMYS = 52,000 psi (X-52)
- 100% SMYS Pressure =

  52,000 * 2(0.188 in) / 4.5 = 4345 psi
- Hoop Stress as a % of SMYS =

  720 psi / 4345 psi = 17%
- Since 17% is less than 20% criteria, this line is Type B

How to determine if Class 2 is Type B

< 20% SMYS for steel lines; or ≤ 125 psig for non-metallic lines

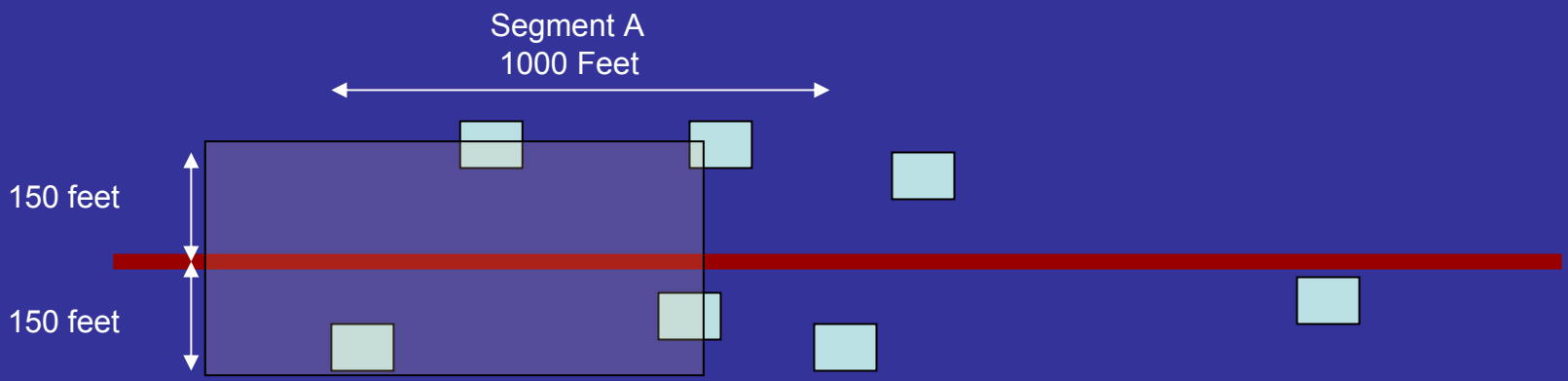
AND if Class 2 meets dwelling density using any 1 of these 3 methods:

a) Class 2 under §192.5

b) Area extending 150 ft on either side of pipeline for continuous 1 mile containing 11 to 45 dwellings

c) Area extending 150 ft on either side of centerline for continuous 1000 ft containing 5 or more dwellings

Type B Method (c) Application



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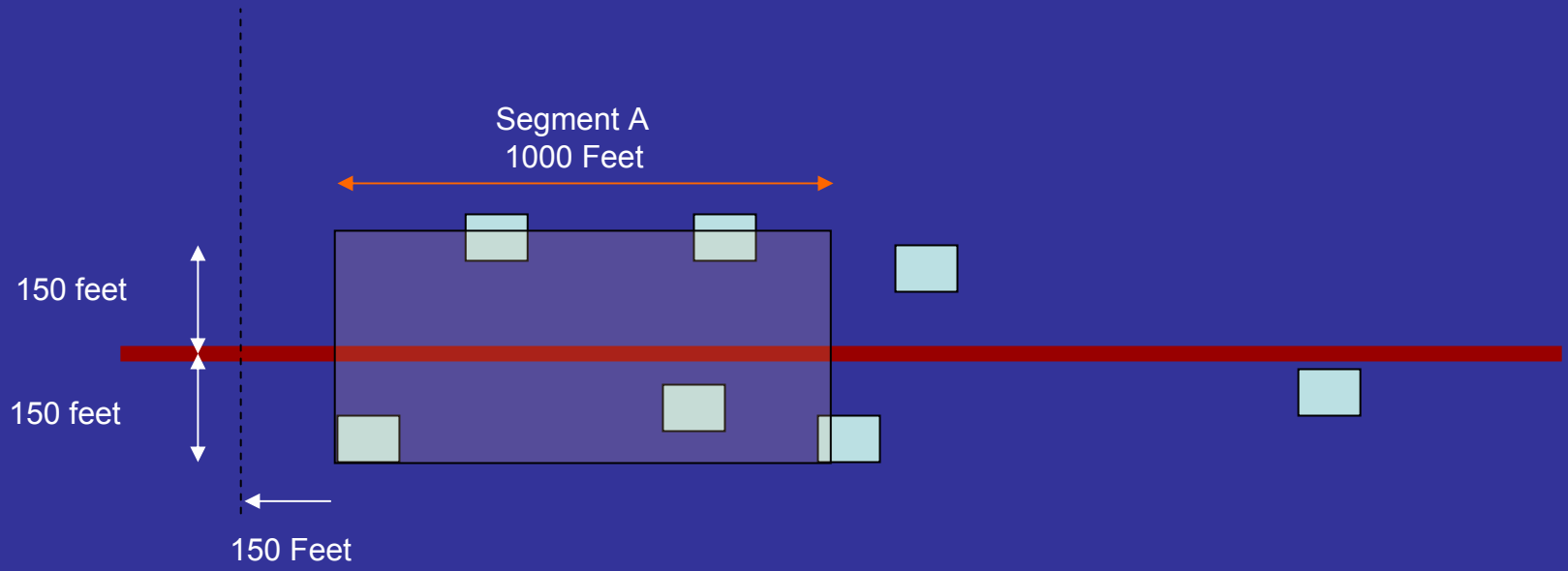

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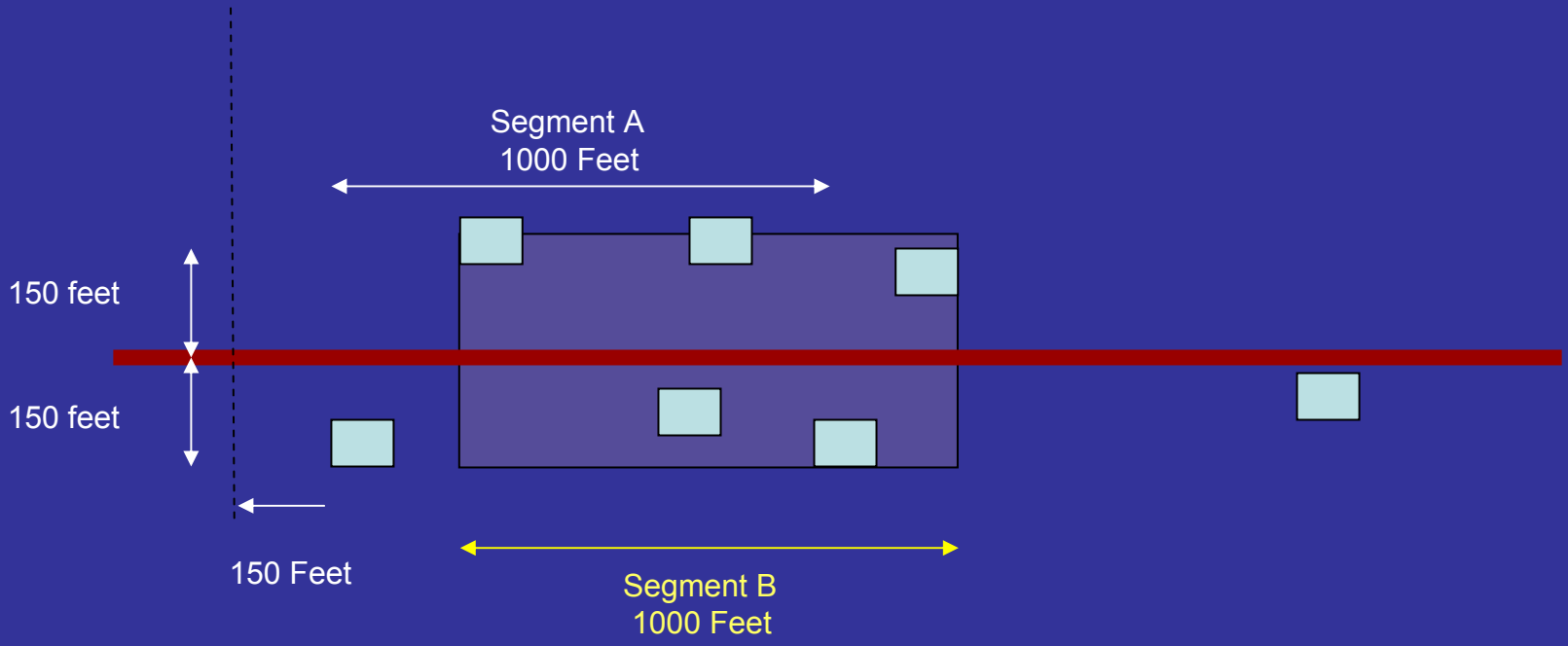

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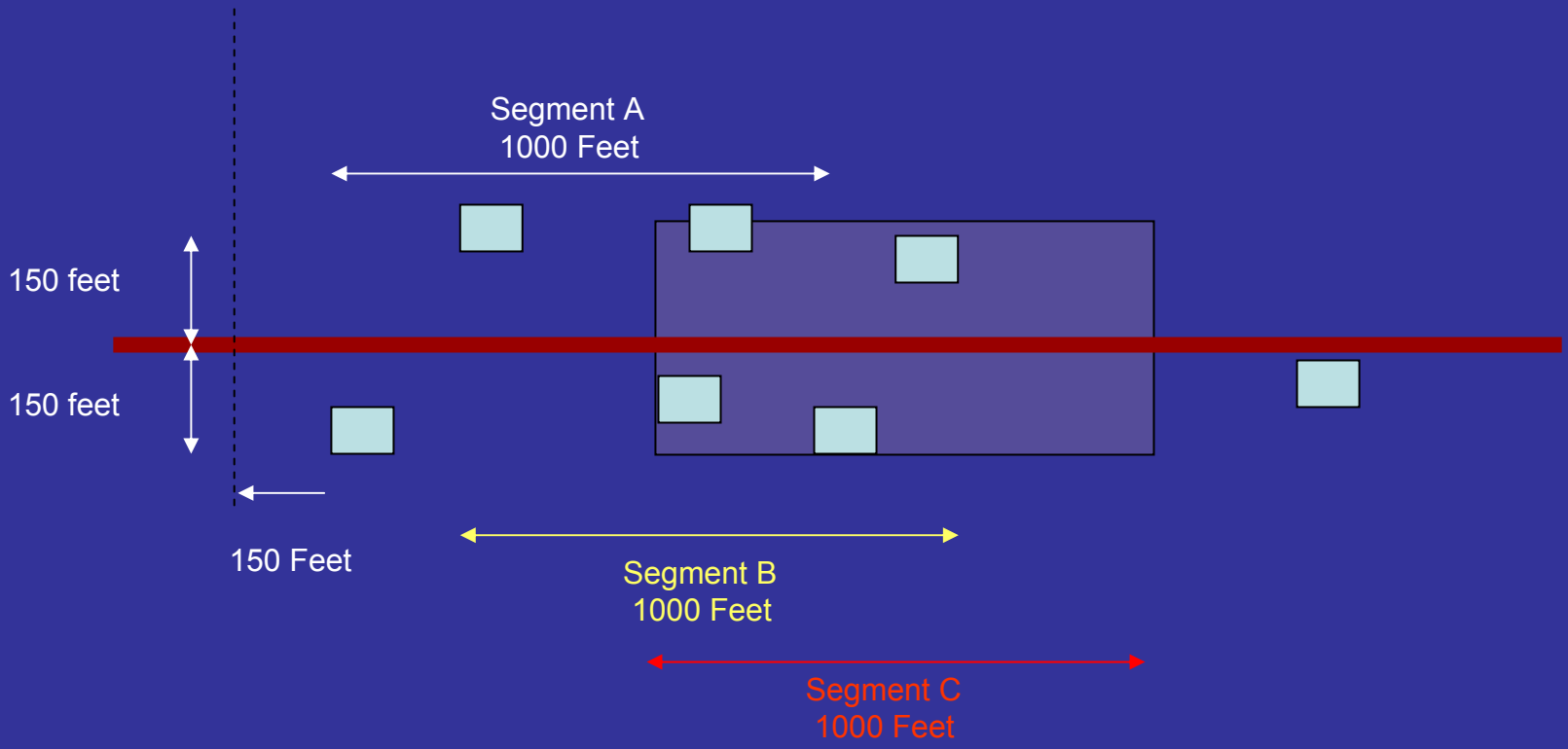

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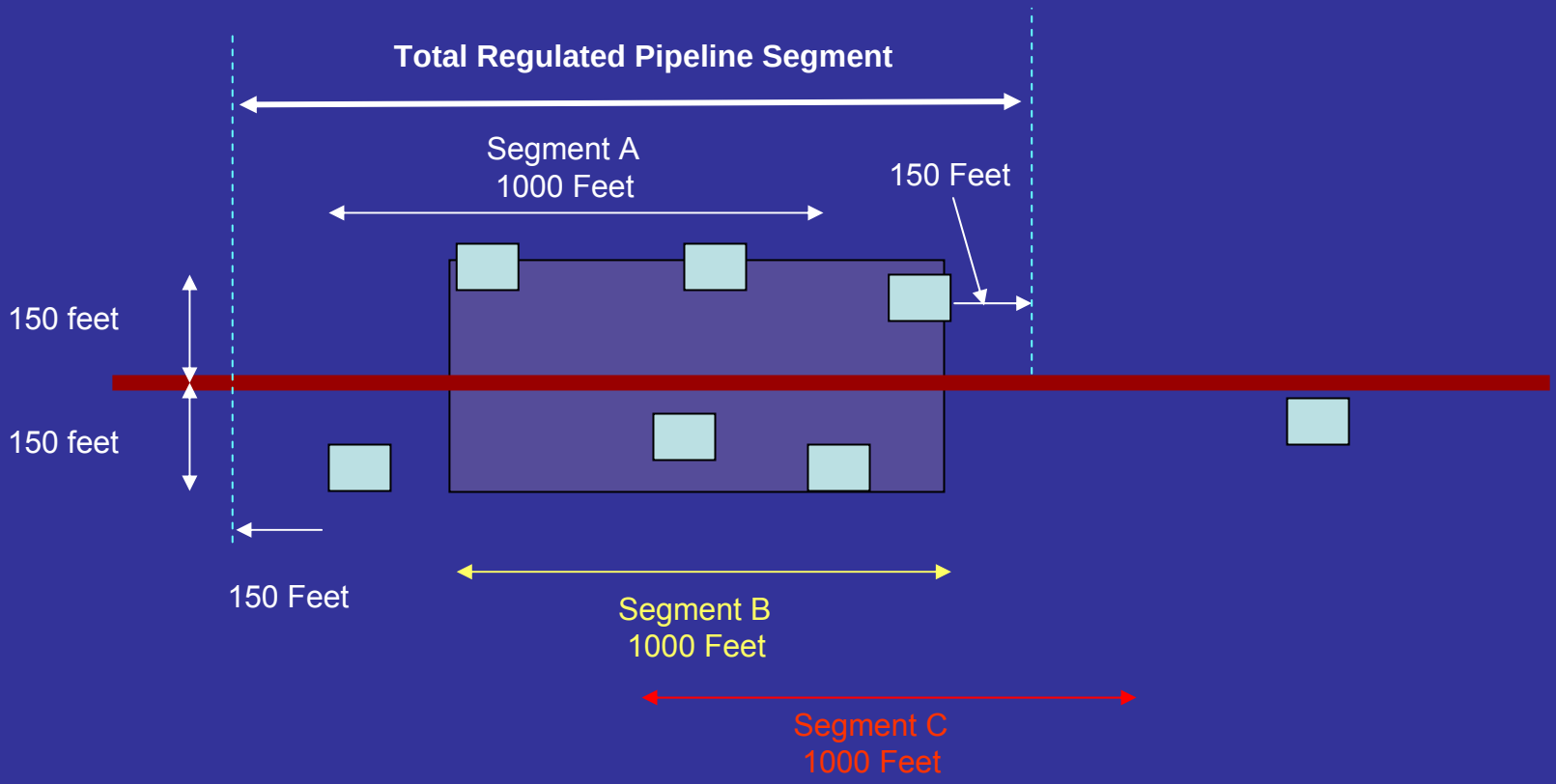


Type A -What Regulations Apply?

- All 192 except §192.150 (passage of internal inspection device) and Subpart O (Integrity Management)
- Class 3 and 4 pipelines must comply with OQ
- Class 2 pipelines may demonstrate compliance with OQ by describing the process used by the operator to determine qualification of the persons performing the O&M tasks.

Type B - What Regulations Apply?

- If a line is new, replaced, relocated, or otherwise changed, the design, installation, construction, initial inspection, and initial test must be in accordance with Part 192;
- Corrosion control according to Subpart I
- Damage prevention program under §192.614
- MAOP established under §192.619
- Line markers according to §192.707
- Public education established under §192.616

Other Considerations

- New rule applies to onshore gas gathering
- Vacuum systems are exempt from the new regulation although some state rules may still regulate vacuum lines

Other Considerations (cont.)

- New rule allows operators to apply DOT classification to pipelines regardless of FERC status.
  - Lines can be regulated by FERC and still not be regulated by DOT
  - Lines can be FERC transmission and DOT gathering

Use Caution: some states may still have more requirements for compliance.

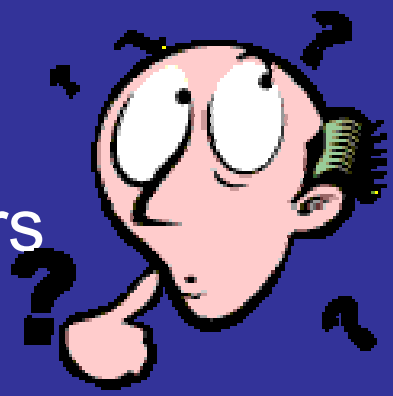
Challenges

What hurdles are companies facing when determining what gathering lines are regulated?

Compliance Deadlines

Carry out a damage prevention program under Sec. 192.614.	**October 15, 2007**
Establish MAOP under Sec. 192.619	**October 15, 2007**
Install and maintain line markers under Sec. 192.707.	**April 15, 2008**
Establish a public education program under Sec. 192.616	**April 15, 2008**
Control corrosion according to Subpart I requirements for transmission lines.	**April 15, 2009**
Other provisions of this part as required by paragraph (c) of this section for Type A lines.	**April 15, 2009**

Train Employees on new definitions and requirements



- *Time* is biggest challenge for Operators to *train* employees on new rule and *implement* effectively by 10/15/07
- New approach: *eliminating city boundaries* to define regulated pipelines
- Learn *new terms and class location definitions*
  - Type A and Type B
  - New *limited DOT requirements* for low risk pipelines

Establish MAOP under §192.619 by October 15, 2007

How, if have missing construction or hydrostatic test records?

- Can use 5 year previous operating history
- Perform UT on pipe to determine wall thickness
- Can default to using minimum grade on missing pipe parameters; Look at default = 24000 for grade

Meeting October 15, 2007 deadline with unknown pipeline data

Determining Type A or Type B

- Accept worst case for now
- *Default to Type A* to meet compliance
- Continue to refine to Type B as time passes

Meeting October 15, 2007 deadline with unknown pipeline data

Determining Type A or Type B

- Use default = 24000 for grade
- Compare MAOP to max calculated MAOP for Type B consideration

For 3.5" OD: wall	0.125	0.141	0.156	0.188	0.216	0.250
100% SMYS	1,714	1,934	2,139	2,578	2,962	3,429
20% SMYS	343	387	428	516	592	686

Mapping Challenges

- Carry out a damage prevention program under §192.614 by October 15, 2007
  - Maps of pipelines exist?
  - Accuracy of maps?
- Modifying software and mapping systems to align with new rule and definitions
  - include Type A and B
  - Method for class location (Type B, Class 2 regulated, Class 2 not regulated options)

Limited Resources

- Companies have downsized and are doing more with less
- Acquisitions, Divestitures, and shuffling to greener pastures are leaving companies short handed
- Limited timeframe to take advantage of lower risk options (Type B , Type B Method 2(c)); refine regulated segments as time goes by

Other Challenges

- Inconsistent federal and state rules pull Operators two different directions; inadvertent non-compliance possible
- Some states are pushing to regulate production and other lower risk areas
- Operators need to work with States to remove Class 1 gathering from state regulated status
- Operators need to work with States with the process of reclassifying transmission to gathering

Next Steps

- Identify Class Locations
- Perform Calculations to determine type
- Document & Retain Paperwork used to categorize Type & Class Location
- Update PODS/GIS
- Update Permits

Conclusion

A risk based public safety approach to regulating gas gathering pipelines is the best way of protecting the public and the environment while effectively managing resources.