



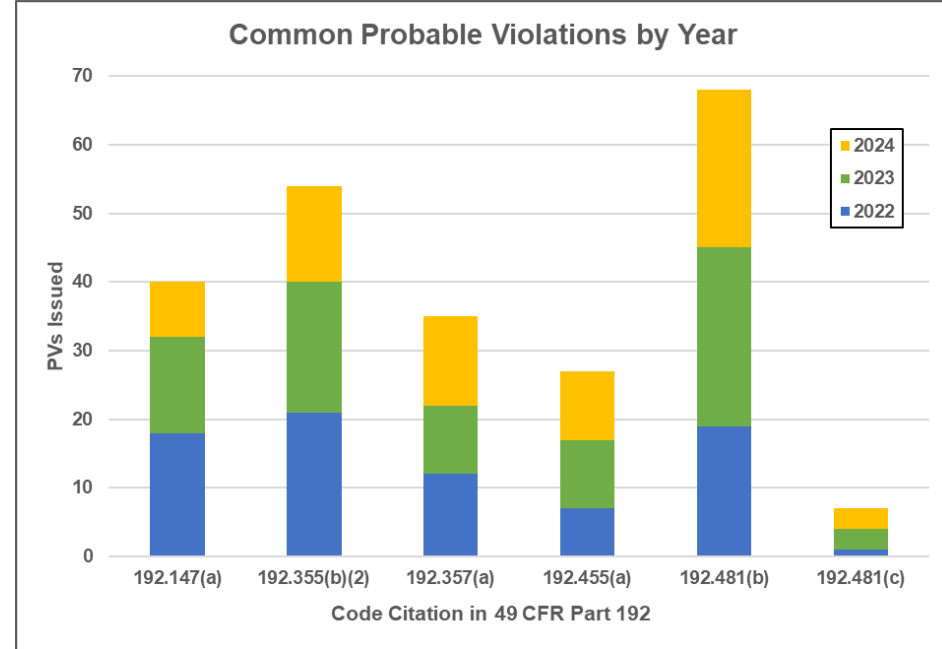
Iowa Utilities Commission

2025 Pipeline Safety Conference

IUC Gas Inspector Presentation

Outline

1. Introductions
2. Safety Moment
3. Preparation for Inspections
4. Common Probable Violations (PVs)
 - a. 49 CFR 192.147(a)
 - b. 49 CFR 192.355(b)(2)
 - c. 49 CFR 192.357(a)
 - d. 49 CFR 192.455(a)
 - e. 49 CFR 192.481(b)
 - f. 49 CFR 192.481(c)
5. Responses to Inspection Reports
6. Questions



Safety Moment

Gas Inspection Safety

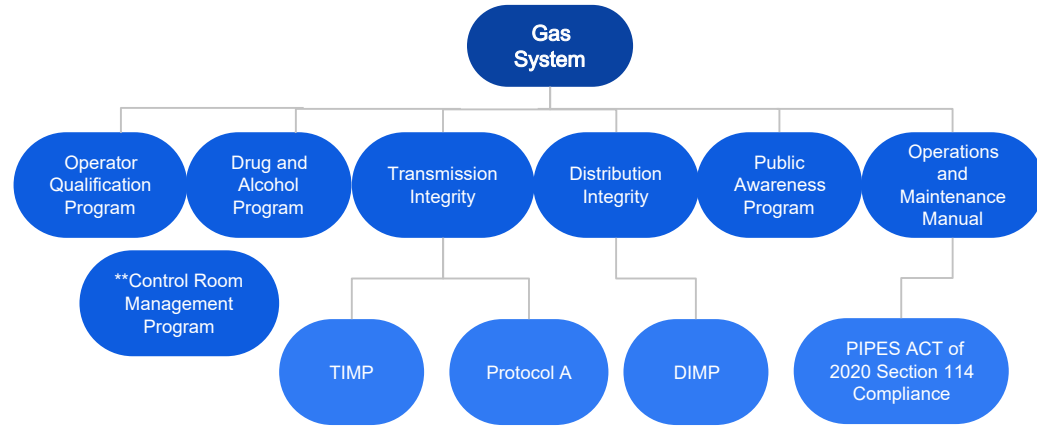
- Minimize vehicles in the inspection “convoy”
- Be mindful of traffic when stopping at TBS/DRS or any facilities along busy roadways
- Practice situational awareness - be aware of your surroundings
- Hi-Vis vests and other PPE



Preparation for Inspections

Before the inspection begins...

- ☑ Review the program(s) to be inspected
- ☑ Ask for the question set, if needed
- ☑ Get the right people in the room - knowledgeable about the system and program(s) to answer questions
- ☑ Have records, procedures, O&M, OQ, One Call responses, or program materials readily available for review



Common Probable Violations (PVs)

Common PV - 49 CFR 192.147(a)

“Short Bolts”

§192.147 Flanges and Flange Accessories.

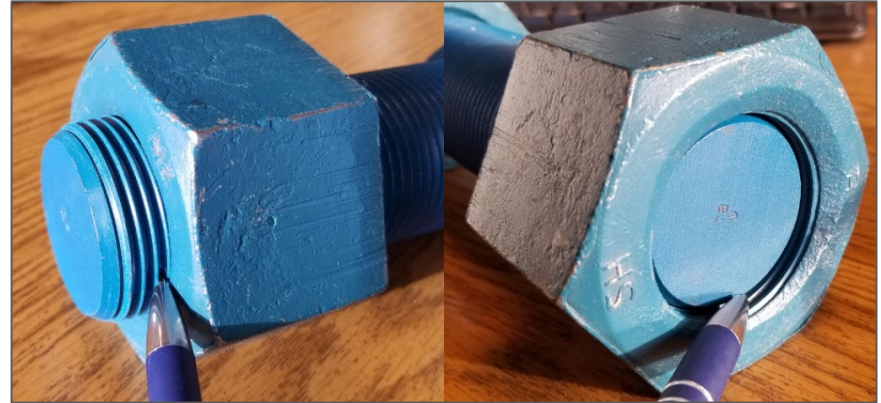
- (a) Each flange or flange accessory (other than cast iron) must meet the minimum requirements of ASME/ANSI B16.5, ANSI/MSS SP-44, or the equivalent.



Example of short bolts identified in 2024 inspection

Common PV - 49 CFR 192.147(a)

- Why do short bolts matter? For pipeline components to function *as designed*, they must be installed *as designed*.
- Stud bolt length requirements are dictated by standards incorporated by reference
- Typically two threads showing past the hex nut for tapered threads
- Refer to O&M or manufacturers' specifications



Common PV - 49 CFR 192.147(a)

Before and After...



Common PV - 49 CFR 192.147(a)

Before and After...



Common PV - 49 CFR 192.355(b)(2)

“Vent Location”

§192.355 Customer meters and regulators: Protection from damage

- (b) Service regulator vents and relief vents must terminate outdoors, and the outdoor terminal must -
 - (2) Be located at a place where gas from the vent can escape freely into the atmosphere and away from any opening into the building



Example of vent near window

Common PV - 49 CFR 192.355(b)(2)

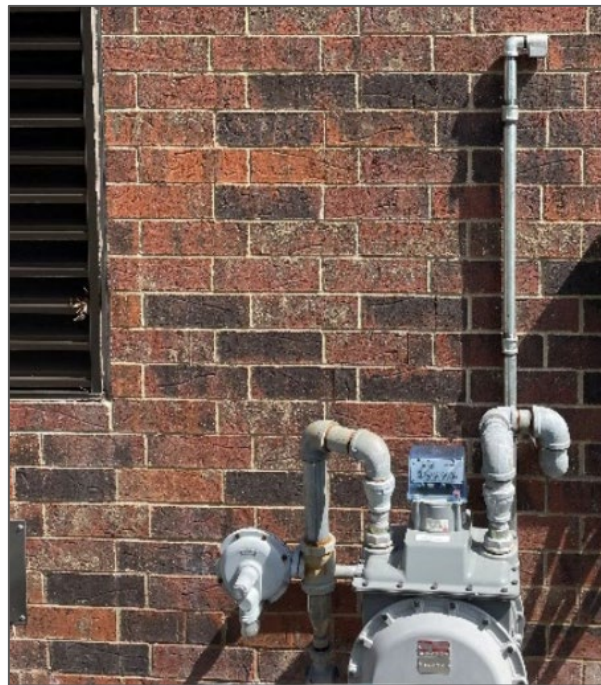
- What's wrong with a vent by a building opening?
 - If relief activates, the gas may vent into or accumulate inside the structure, creating a hazardous environment
 - Refer to O&M for acceptable distance from building opening - typically 3 feet
- “Escape freely into the atmosphere”?
 - If gas becomes trapped or contained, it may cause an accumulation of gas above the lower explosive limit (LEL)
 - Decks and other structures may prevent gas from venting freely away from buildings



If this relief opens, can the gas vent freely to atmosphere?

Common PV - 49 CFR 192.355(b)(2)

Before and After...



Common PV - 49 CFR 192.355(b)(2)

Before and After...



Common PV - 49 CFR 192.357(a)

“Stressed Pipe”

§192.357 Customer meters and regulators: Installation

- (a) Each meter and each regulator must be installed so as to minimize anticipated stresses upon the connecting pipe and the meter.



Example of stressed meter piping

Common PV - 49 CFR 192.357(a)

- What's wrong with stressed pipe?
 - Additional strain on metal piping can degrade strength over time
 - Uneven wear
 - Additional stress and strain on fittings, increased potential for leaks or other issues
- Culprits
 - Ground movement
 - Vibrations
 - Time
 - Lacking pipe supports



Example of stressed meter piping

Common PV - 49 CFR 192.357(a)

Before and After...



Common PV - 49 CFR 192.357(a)

Before and After...



Common PV - 49 CFR 192.455(a)

“Buried Crimp”

§192.455 External corrosion control: Buried or submerged pipelines installed after July 31, 1971

- (a) With limited exceptions, each buried or submerged pipeline installed after July 31, 1971, must be protected against external corrosion, including the following
 - (1) ...external protective coating
 - (2) ...cathodic protection system installed and placed in operation within one year after completion of construction



Example of buried anodeless riser crimp identified in 2024 inspection

Common PV - 49 CFR 192.455(a)

- What's wrong with a buried crimp?
 - For anodeless risers, the steel portion directly above the crimp is buried and is **not** properly protected against external corrosion
- Creation of an isolated segment that would require cathodic protection
- Culprits: landscaping, accumulation of debris in protective sleeves, buried over time



Example of buried crimp identified in 2024 inspection

Common PV - 49 CFR 192.455(a)

Before and After...



Common PV - 49 CFR 192.455(a)

Before and After...



Common PV - 49 CFR 192.455(a)

Before and After...



Common PV - 49 CFR 192.455(a)

Before and After...

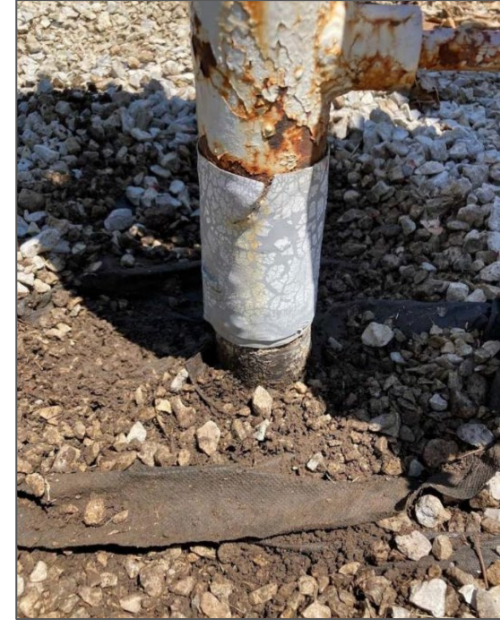


Common PV - 49 CFR 192.481(b)

“Coating and Wrap Issues”

§192.481 Atmospheric corrosion control:
Monitoring.

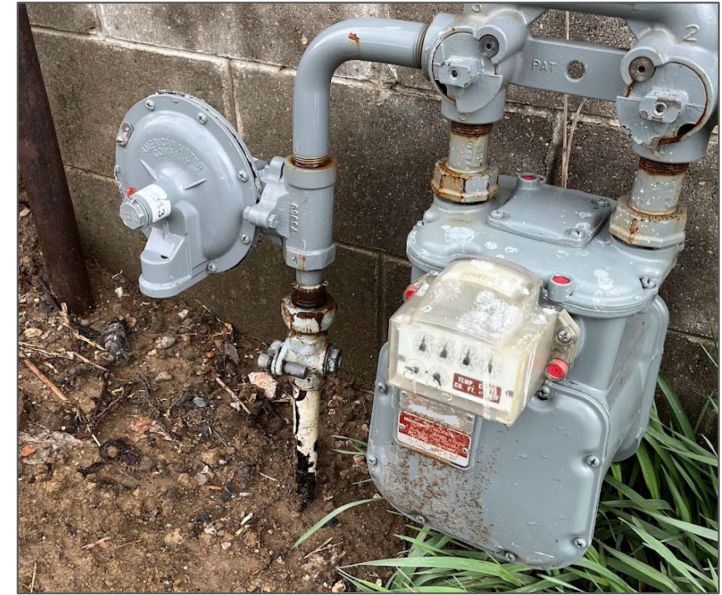
- (b) During inspections the operator must give particular attention to pipe at ***soil-to-air interfaces***, under thermal insulation, ***under disbonded coatings***, at pipe supports, in splash zones, at deck penetrations, and in spans over water.



Example of damaged wrap at soil-to-air interface

Common PV - 49 CFR 192.481(b)

- What's wrong with a bad wrap or coating?
 - Not protecting bare steel from elements that lead to atmospheric corrosion
 - Could allow moisture to become trapped or to pool, creating a corrosion cell and ultimately metal loss if not remediated
- Culprits: Manufacturer coating peeling or chipping, general wear and tear over time, external damage, UV degradation



Example of damaged coating identified in 2024 inspection

Common PV - 49 CFR 192.481(b)

Before and After...



Common PV - 49 CFR 192.481(b)

Before and After...



Common PV - 49 CFR 192.481(b)

“Atmospheric Corrosion Inspections”

§192.481 Atmospheric corrosion control: Monitoring.

(b) During inspections, give particular attention to pipe at soil-to-air interfaces, ***under thermal insulation, under disbonded coatings, at pipe supports, in splash zones, at deck penetrations, and in spans over water.***



Example of Pipe Support

Common PV - 49 CFR 192.481(b)

During Atmospheric Corrosion inspections or surveys, pay attention to...

- **Soil-to-Air Interface:**
 - Moisture/electrolytes from soil contribute to corrosion cell
- **Thermal Insulation and Disbonded Coatings:**
 - Moisture accumulates against pipe wall and cannot dissipate, creating corrosion cell
- **Pipe Supports:**
 - Potentially dissimilar metals
 - Point of contact can create corrosion cell
- **Spans Over Water:**
 - Bridge supports can cause issues similar to other pipe supports



Inspect Under Insulation

Common PV - 49 CFR 192.481(b)



Bridge Support



Disbonded Coating

Common PV - 49 CFR 192.481(b)



Inspect Soil-to-Air Interface?



Inspect Soil-to-Air Interface?

Common PV - 49 CFR 192.481(b)

Before and After...



Common PV - 49 CFR 192.481(b)

Before and After...



Common PV - 49 CFR 192.481(c)

“Active Corrosion”

§192.481 Atmospheric corrosion control: Monitoring.

(c) If atmospheric corrosion is found during an inspection, the operator must provide protection against the corrosion as required by §192.479.



Metal Loss on Service Valve

Common PV - 49 CFR 192.481(c)

- Atmospheric Corrosion Issues:
 - Metal loss, like pitting, impacts integrity of pipeline or pipeline component
 - If metal loss is significant, MAOP may need to be lowered
- Culprits:
 - Dissimilar metals (pipe supports, for example)
 - Soil-to-air interface
 - Moisture accumulation under insulation, wraps
 - Pressure cut creating temperature drop and condensation
 - Time

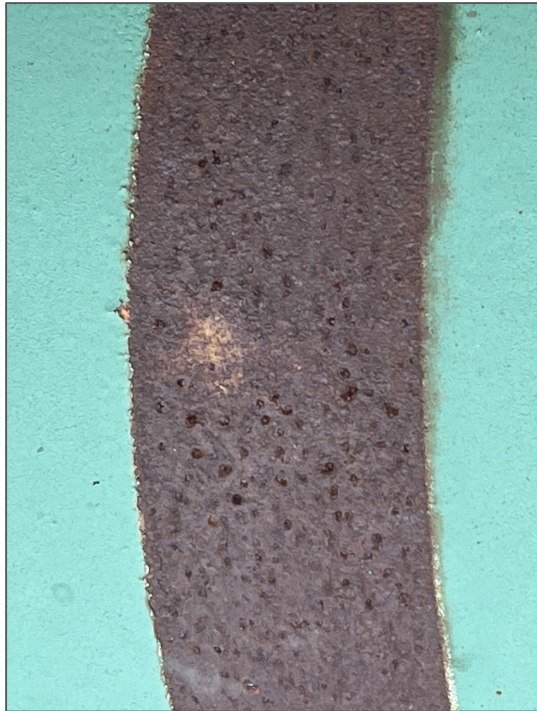


Example of atmospheric corrosion at meter set

Common PV - 49 CFR 192.481(c)



Common PV - 49 CFR 192.481(c)



Common PV - 49 CFR 192.481(c)

Before and After...



Common PV - 49 CFR 192.481(c)

Before and After...



Preventive Maintenance

- Look for issues during your regular inspections
 - Atmospheric corrosion survey
 - Business District surveys
 - Patrols
- Keep things in good condition - paint, wraps and coating, etc.
- Utilize forms and other tools in O&M
- Corrosive atmospheres
 - Know where they are from previous inspections
 - Do extra inspections if needed

Responses to IUC Inspection Reports

Responses to Inspection Reports

IUC: Inspection Report and Notice Letter

- Filed in EFS - email to Service List (Inspector can assist)
- Details of inspection findings
- Probable Violations
- Advisories
- Requirement to respond in EFS within 30 days of date of letter

IUC Customer Service
515-725-7300

Operator: Inspection Response

- File in EFS within 30 days of Notice Letter
- Address **each** Probable Violation or Advisory separately, with a label
- Photos or other evidence of compliance
- Plans to become compliant, with reasonable timeline
- If responding to a unit inspection, include unit name in filing title

IUC: Follow-up Report

- Each outstanding Probable Violation or Advisory addressed
- Cleared - no further action needed
- Cannot be Cleared - pending further documentation or demonstration of compliance, etc.

Responses to Inspection Reports

What is a “Reasonable” Timeline to Address Issues?

- Field Issue: Typically within one construction season
- Records Issue: Dictated by record frequency
 - Example: Annual emergency valve maintenance and operation
- Communicate, in detail, if there are extenuating circumstances

Responses to Inspection Reports

Components of a GREAT Operator Response

AT 30 DAYS...	INCLUDES...	EXAMPLE
Probable Violation or Advisory has been resolved or addressed	• Description of how each probable violation or advisory was addressed • Clear photo or record showing the work done to achieve compliance	<i>PV 192.147(a):</i> Strickland Natural Gas replaced the flange bolts at DRS #2 on May 1, 2024, as shown in the attached photo.
Additional time is needed to correct issue	• Plan of Action: Description of <i>what</i> work is planned to address the issue • Anticipated <i>date</i> for when work will be complete • Follow-up with filing	<i>PV 192.615(a)(2):</i> Strickland has scheduled a liaison meeting with local officials and emergency responders for April 1, 2025. Documentation will be filed in EFS within 30 days of the meeting.

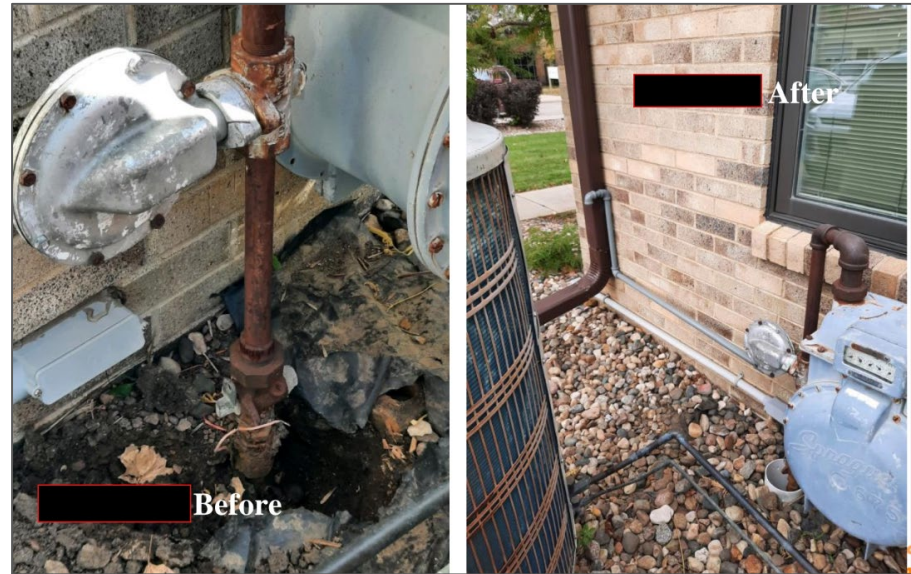
Responses to Inspection Reports

Documentation should be clear and/or legible



Responses to Inspection Reports

Documentation should be clear and/or legible - before and after



Responses to Inspection Reports

Documentation and records should be legible

Utility Name

VALVE INSPECTION & MAINTENANCE LOG

Valve No. 3

DATE	FLEX	LUBE AMOUNT	BY
11/4/14	1/8 Turn		
7/17/15	1/8 Turn	Couple pumps	
7/13/16	1/8 Turn		
7/20/17	1/8 Turn	Couple pumps	

Responses to Inspection Reports

Responses with more questions than answers:

Remote vent added to [REDACTED]



What is the material of vent piping?

Is the diameter sufficient to support full relief capacity?

Difficult to see the interconnect between the regulator vent and the piping to extend the relief away from the window and deck.

Responses to Inspection Reports

Responses with more questions than answers:

192.481(a) - Atmospheric Corrosion Monitoring

Atmospheric Corrosion Surveys will be completed as required by OQ personnel.

When will the surveys be completed?

What's this address?

What does this comment say?

MUNICIPAL GAS SYSTEM
CORROSION SURVEY
DATE STARTED: 1/1 DATE FINISHED: 1/1 FORM: 730
PAGE: 1 OF PAGE: 1

LOCATION	PS	ADHESIVE INSULATOR	TYPE OF LINE PE CM CI	COMMENTS
17-28-10	-0.846	-1.496		
6-15-11	-0.630	-1.314	✓	AL
6-1-12	-0.985	-1.528	✓	AL
6-1-13	-0.779	-1.580	✓	AL
6-1-14	-0.972	-1.497	✓	AL
6-9-15	-1.236	-1.486	✓	AL
6-9-16	-1.282	-1.496	✓	AL
6-9-17	-1.292	-1.384	✓	AL
6-26-18	-1.291	-1.396	✓	AL
6-2-19	-1.286	-1.456	✓	AL
8-4-20	-1.849	-1.480	✓	AL
8-4-21	-1.066	-1.468	✓	AL
8-4-22	-1.172	-1.472	✓	AL
3-25-24	-1.277	-1.562	✓	AL

PS = PIPE TO SOIL READING PE = PLASTIC CM = COATED WRAPPED STEEL CI = CAST IRON

Comments: After survey on line including leaks. Please do not disturb PS survey station. Survey team has been notified and alerted.

Responses to Inspection Reports

Responses with more questions than answers:

Coating is still damaged?



Responses to Inspection Reports

Responses with more questions than answers:



Was the soil-to-air interface wrapped?

Gas Program Resources

- Resources
 - GTI Energy
 - IAMU
 - IUC
 - Paradigm
 - USDI
- Ultimately, the **gas operator** is responsible for the operation, maintenance, and understanding of its gas system in accordance with Part 192

Questions?



Contact Information



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