Pipeline Safety
Topics of Discussion
2024

Paul Owings, Chief Engineer

Kansas
Corporation Commission

Seminar Housekeeping

- Handouts (at registration table)
  - Note-taking material
  - Contact List for Inspectors
  - Feedback Survey
  - Certificates available for those that request them

Agenda

- KCC Staff Introduction and Contact Information
- Pipeline Safety Resources
- Kansas's Pipeline Safety Program
- Rule Making and Regulation Update
- Common Regulatory Questions

KCC Pipeline Safety Staff

Jon Bolinder
Pipeline Safety Supervisor
785.633.6223

Marcus Jauregui
Pipeline Safety Inspector II
785 633 6227

Lyle Powers
Pipeline Safety Inspector II
785.250.3475

Luke Hertlein
Pipeline Safety Inspector I
913.522.0648

Chris McCurry
Pipeline Safety Inspector I
785.600.1889

Wade Schumacher
Pipeline Safety Inspector I
785.231.9908

Aaron Rak
Damage Prevention
Special Investigator I
Overland Park | 785.633.6224

Josh Williams
Damage Prevention
Special Investigator I
Wichita | 316.337.6244

Vacant
Damage Prevention
Special Investigator II

Suzanne Balandran
Public Service Administrator
3286

How to contact us?

- paul.owings@ks.gov
- kccpipelinesafety@ks.gov
- kcc.utilitydamage@ks.gov
- Kcc.safetyresponse@ks.gov

Pipeline Safety Resources

- Click on Natural Gas/Pipeline thumbnail
- Click the Gas Pipeline Safety Forms Quick Link

www.kcc.ks.gov

Presentations

- Public version of all presentations will be available on KCC website.
- 2010-2023 Presentations also available.

KCC Pipeline Safety Training Opportunities

- Pipeline Safety Newsletter.
- Pipeline Safety Seminar
- KCC Coordinated Municipal/small utility training (anyone can attend)
  - Focus on emergency response and generic tasks.
  - Typically 80 attendees; 30 operators
    - Vacant….
    - Chanute
    - Argonia
    - McLouth
    - Moundridge

Audit Resources

- Form 1 Pressure test records
- Form 2 Leak investigation and repair
- Form 3 Leak data
- Form 4 Leak summary
- Form 5 P.E. Joining qualification test
- Form 6 Cathodic protection- pipe to soil readings
- Form 7 Monthly odorometer tests
- Form 8 Casing reports
- And more…..

Other Pipeline Safety Training Opportunities

- Kansas Municipal Utilities training center.
- Barton County Community College.
- Trade Association Meeting
- Excavator awareness meetings

Kansas's Pipeline Safety Program

- Pipeline safety regulation in the USA.
- State and federal relationship.
- Kansas's programs history.
- Kansas's programs responsibilities.

Federal Regulation of Pipelines

- Pipelines are regulated by U.S. Department of Transportation.
- The specific office is the Pipeline and Hazardous Materials Safety Administration (PHMSA)
- PHMSA has two parts – the Office of Pipeline Safety, and the Office of Hazardous Materials Safety
- Delegation of Responsibility: US DOT (Secretary of Transportation) -> PHMSA -> States

Who is PHMSA?

U. S. Department of Transportation (DOT)

- **OST** — Office of the Secretary of Transportation
- **OIG** — Office of the Inspector General
- **FAA** — Federal Aviation Administration
- **FHWA** — Federal Highway Administration
- **FMCSA** — Federal Motor Carrier Safety Administration
- **FRA** — Federal Railroad Administration
- **FTA** — Federal Transit Administration
- **MARAD** — Maritime Administration
- **NHTSA** — National Highway Traffic Safety Administration
- **SLSDC** — Saint Lawrence Seaway Development Corporation
- **STB** — Surface Transportation Board
- **PHMSA** — Pipeline and Hazardous Materials Safety Administration
  - Office of Pipeline Safety
  - Office of Hazardous Materials Safety

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

"To protect people and the environment by advancing the safe transportation of energy and other hazardous materials that are essential to our daily lives."

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The Federal – State Partnership

- PHMSA may grant the authority to inspect and enforce the Pipeline Safety Regulations to individual states for intrastate pipelines
- States may have gas or hazardous liquid pipeline programs, or both
- Some states are “interstate agents” – i.e. they can perform field inspections on interstate pipelines. Enforcement authority for interstate pipelines remains with PHMSA.
- States must enforce the minimum Federal standards; and may have laws that are more stringent.

Kansas's Pipeline Safety Program

- Agency: Kansas Corporation Commission (KCC)
  - Utilities Division
- Program summary:
  - Pipeline safety program.
  - Underground storage program.
  - Damage prevention program.
- The Commission has enforcement authority.

State Pipeline Safety Programs Roles and Responsibilities

- Inspection and oversight of regulated pipelines
- Enforcement of pipeline safety regulations
- Investigation of pipeline accidents and incidents
- Education of the public on pipelines and pipeline safety

Rule making and regulation update.

- PHMSA Rule Making
- Regulation Update

PHMSA Rule Making

- Federal rulemaking process steps/goals:
  - Inform the public
  - Review economic impact of proposed rules
  - PHMSA receives and answers all public comments
  - Review by Gas Pipeline Advisory Committee / Haz Liquid Advisory Committee
    - Advisory committees (GPAC/LPAC) have representatives from industry, regulators, and the general public.
  - Office of Management and Budget (OMB) must review most regulations before they become final
  - Congress routinely calls on PHMSA to provide updates on the status of rulemakings and mandates

State Penalty Limit Changes

- K.S.A. 66-1,151 was amended in the 2024 session.
- Civil penalties were increased as follows:
  - $200,000 max per day a violation exists.
  - $2,000,000 max for any related serious of violations.

Common Regulatory Questions

- Discussion questions derived from Staff field observations.
- Provide insight on current topics.

Discussion of 192.603 and 192.615 Municipal System Changes in Personnel

- 192.603 (b): Each operator shall establish a written operating and maintenance plan… This plan and future revisions shall be submitted to the gas pipeline safety section of the commission.
- 192.605(a): Each operator shall prepare and follow a manual of written procedures for conducting operations and maintenance activities and for emergency response.
  - Usually, we look for updates each year.

Discussion of 192.603 and 192.615 Municipal System Changes in Personnel

- 192.615 Each operator shall establish written procedures to minimize the hazard resulting from a gas pipeline emergency. At a minimum, the procedures must provide for the following:
  - (2) Establishing and maintaining adequate means of communication with appropriate fire, police, …
- The day the sole contact of a gas system changes, the communications link is no longer adequate.

Discussion of 192.603 and 192.615 Municipal System Changes in Personnel

- If 911 used as emergency contact
  - Changes of personnel must be communicated to emergency dispatch as soon as possible.
  - Kansas PSAP Contact List can be found at:
  - https://www.kansas911.org › psap-contact-list
- Notify KCC Staff within one month of changes.
- Recommend that new personnel meet with Local Emergency Planning Coordinator to discuss their role in working with new operator.

Pressure Regulation provided by Supplier

- Several 2023 transmission pipeline projects have included work on pressure regulator stations serving distribution systems.
- Changing flow patterns during bypass operations or temporary regulator installation can result in debris affecting regulators.

Pressure Regulation provided by Supplier

- Operator should be aware of upstream work being performed at a town border station,
- Stay in contact with transmission pipeline operator;
- Monitor pressures on your system while the work is being done.
- If the supplier monitors low side pressure with SCADA, have them call you if it increases or
- Get access to low side SCADA to monitor pressure being delivered to your system.

Pressure Regulation provided by Supplier

- 192.603 Kansas addition:
- (d) Each operator shall have regulator and relief valve test, maintenance and capacity calculation records in its possession … if the supplier's relief valve capacity is utilized to provide protection for the operator's system.

“Fire First” Safety Evaluations

- Definition: Structure fire that is initiated by a source unrelated to gas but eventually compromises the gas piping as the fire spreads through the structure.
- Operator must conduct tests to ensure that gas was not involved in initiating the fire.
  - Cannot assume gas was not involved.
- Odor checks with calibrated odorometer.
- Pressure lockup on service regulator if possible.
- Leak survey perimeter to ensure gas migration from main or service line is not occurring

“Fire First” Safety Evaluations

- Barhole for gas concentrations in soil between piping and structure foundation.
- Check sewers for gas concentration.

“Fire First” Safety Evaluations

- 192.615: …. At a minimum, the procedures must provide for the following:
  - (3) Prompt and effective response to a notice of each type of emergency, including …gas detected inside or near a building.

Incident Investigations and Lessons Learned

Incident and Accident Reporting

- Operators must give notice to the National Response Center at 1-800-424-8802 within one hour of confirmed discovery.
- Gas Pipelines incident definition. See 49 CFR 191.3
- Note State requirements may be more stringent than PHMSA requirements.
- Hazardous Liquid Pipelines have Accidents. See 49 CFR 195.50

Who is involved in Incident/Accident Investigations?

- State investigators may become involved in an investigation. Purpose:
  - Independent documentation of facts
  - Determine if code violations caused or contributed to the incident
  - Develop recommendations to prevent future recurrences
- PHMSA has an Accident Investigation Division (AID)
  - Interstate investigations and other areas where States do not have jurisdiction.
  - May participate in State lead investigations as observers.
- National Transportation Safety Board (NTSB)
  - Reports directly to Congress
  - Has authority to investigate any transportation accident
  - NTSB investigation assesses both operator and State/PHMSA actions

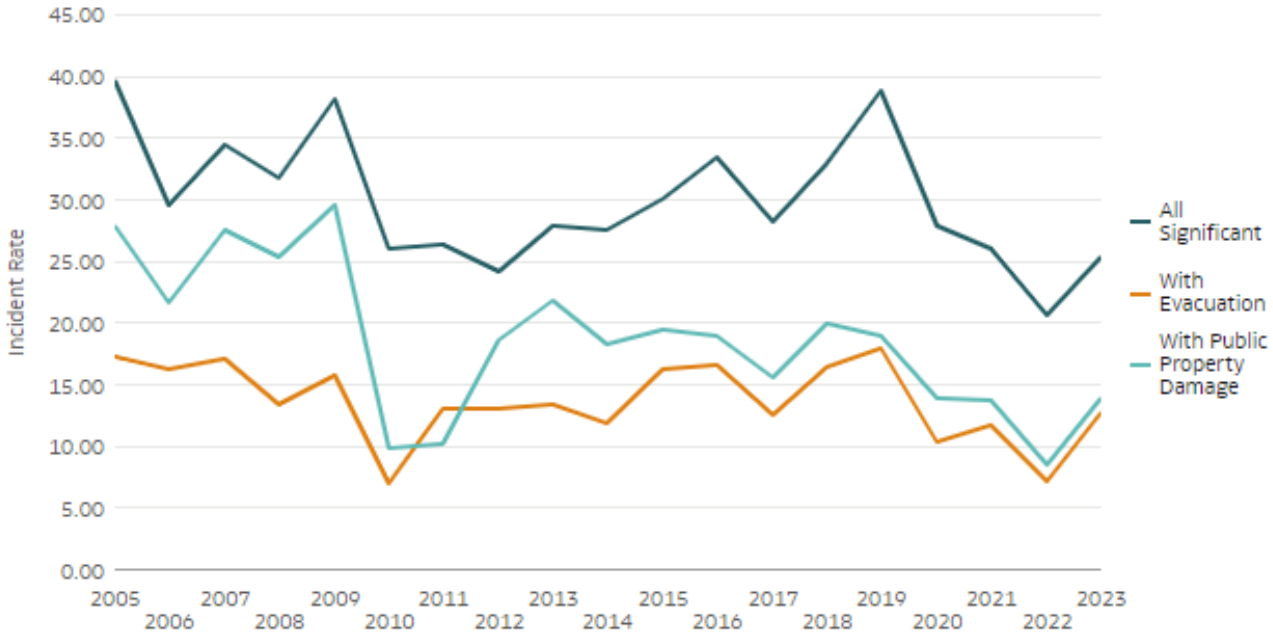
Incident and Accident National Trends

Kansas Incidents

- One incident in 2023 and none in 2024

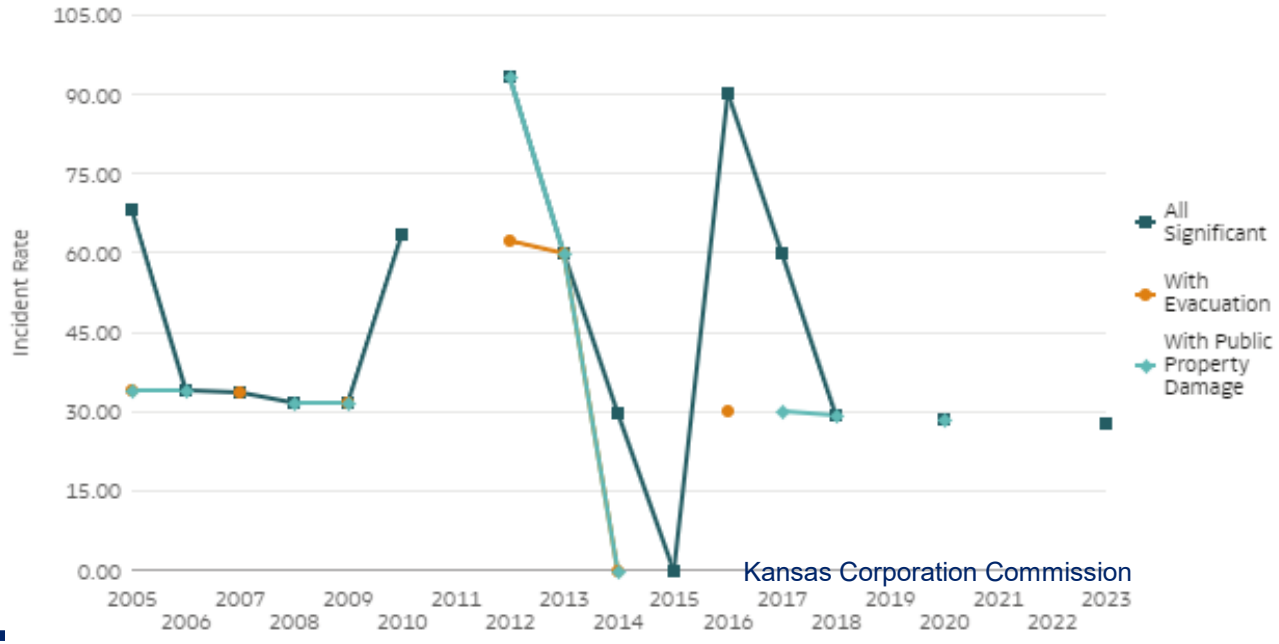
Significant Incident Rate

- Gas distribution incidents per million Miles.
- Incidents involving fatality, or an injury requiring overnight, in-patient hospitalization, or $50,000 in total cost.



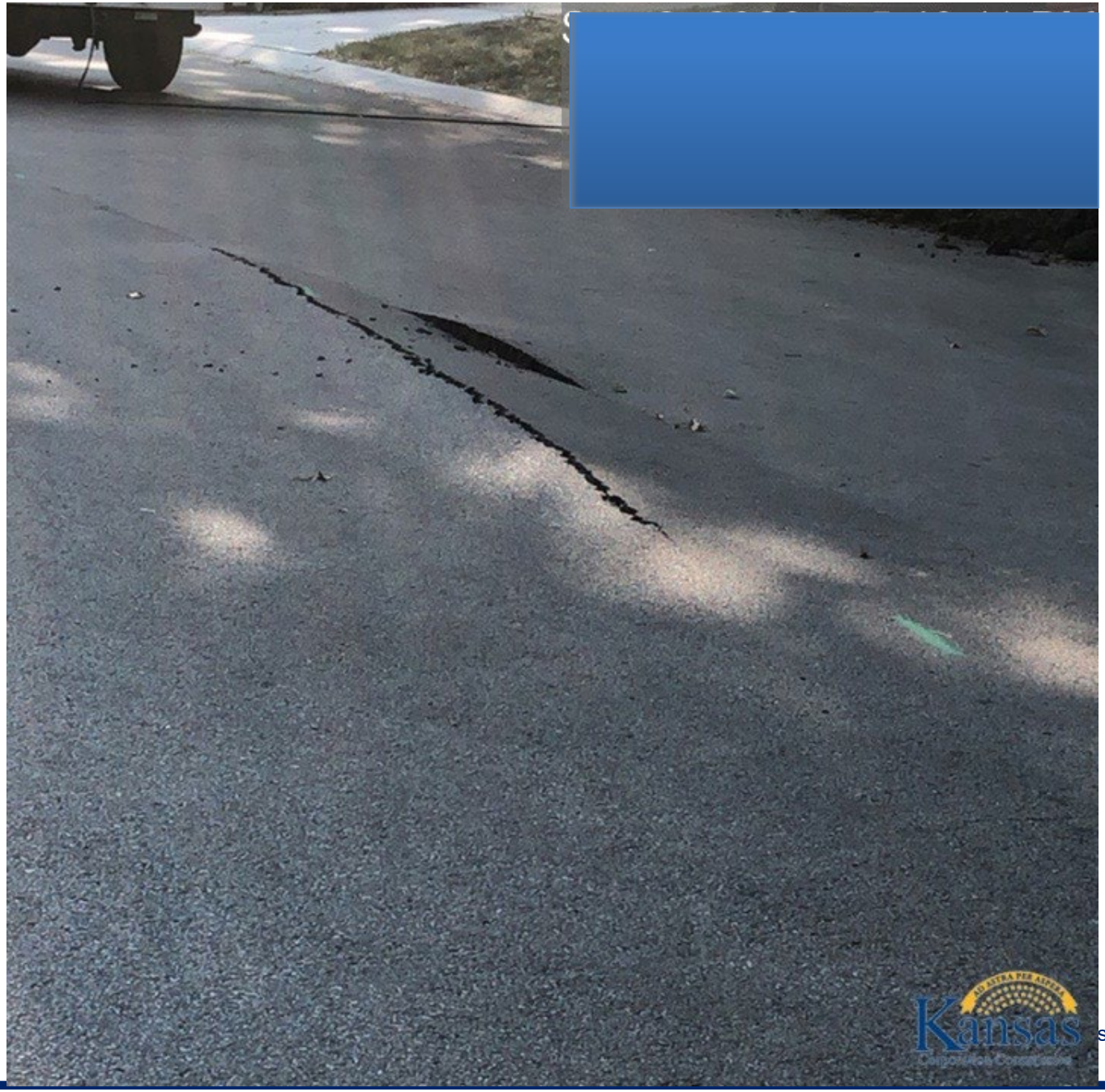
National

Kansas



“Responding to Dig-Ins

- 192.615: …minimize the hazard resulting from a gas pipeline emergency. At a minimum, the procedures must provide for the following:
  - (6) Emergency shutdown and pressure reduction in any section of the operator's pipeline system necessary to minimize hazards to life or property.
- 192.751: Each operator shall take steps to minimize the danger of accidental ignition of gas in any area when a hazardous amount of gas is being vented into open air…



Dig-In timeline

- **Gas Damage reported to 9-1-1 at 15:36**
- **Gas shut off at 19:30**
- **Gas vented from 55 psi 4”pipeline under pavement for four hours.**

“Responding to Dig-Ins

- Remote squeeze off of pipeline eliminates risk of working in a hazardous atmosphere.
- Procedure should consider checking for depth of line before beginning to dig remote hole.
  - Line more than 5 feet deep may require shoring, takes more time to shut off blowing gas.
- Consider using available valves to shut off gas supply.
- Many gas leaks initiated by third party excavation escalate to incidents because of “slow” emergency response.

Notice of Proposed Rulemaking

Strengthen leak survey and patrolling requirements in distribution system business districts

Material type	KAR	NPRM
All types pipe	1/year	1/year

Notice of Proposed Rulemaking

Leak survey mains outside of business districts

Material type	KAR	NPRM
Unprotected steel, urban area	1/year	1/year
Unprotected steel, rural area	1 time/3 years	1/year
Protected bare steel	1 time/3 years	1 time/3 years
PVC	1 time/3 years	1/year
Deteriorating anode CP	1 time/3 years	1/year
Historic plastic	1 time/5 years	1/year
Protected coated steel and PE	1 time/5 years	1 time/3 years

Notice of Proposed Rulemaking

Leak survey svc lines and yard lines outside of business districts 192.723

Material type	KAR	NPRM (svc only)	
Unprotected steel	1/year	1/year	
PVC	1 year	1/year	
copper	1 time/year	1/year	
Protected bare steel	1 time/3 years	1 time/3 years	
Protected coated steel and PE	1 time/5 years	1 time/3 years	
Deteriorating anode CP		1/year	
Historic plastic		1/year	

Notice of Proposed Rulemaking

Leak Classification Definitions Kansas regs. in 192.703; NPRM in 192.760

	KAR Definition	
Class 1 Leak	Hazardous requiring continuous action to make safe; at bldg. wall; blowing	Same as GPTC; very similar to Kansas except KS has specific % gas listed
Class 2 leak	2% gas under hard surface; 4% gas in substructure	1.8% gas under hard surface; 3.6% gas in substructure
Class 3	Nonhazardous; unlikely to migrate	Nonhazardous; unlikely to migrate; **<10 cfh**

Notice of Proposed Rulemaking

Leak Repair Action
Class 1 Leak

KAR Action	NPRM Action
continuous action to make safe (192.703)	Immediate and continuous action to mitigate hazard
Replaced, repaired or removed from service in 5 days.	Downgrade to lower class not allowed
Classify within 2 hours of notification	Must promptly repair; demonstrate not an environmental hazard.

Notice of Proposed Rulemaking

Leak Repair Action
Class 2 Leak

KAR Action	NPRM Action
Repair within 6 months	Repair within 6 months or shorter
Monitor weekly when ground frozen	Re-evaluate every 30 days
	Prioritize repair schedule based on safety risk.
	Define which class 2 leaks must be repaired in 30 days.
	Consider environmental changes that affect venting

Notice of Proposed Rulemaking

Leak Repair Action
Class 3 Leak

KAR Action	NPRM Action
Recheck every 6 months	Recheck every 6 months
Repair or replace in 30 months	Repair or replace in 24 months
	If pipe to be replaced, may monitor for 5 years
	Any leaks existing before rule is final must be repaired in 3 years.

Notice of Proposed Rulemaking

other required actions

- Post repair inspection within 14 days
- Maintain records of leak evaluation and repair for 5 years.
- Establish an Advanced Leak Detection Program
  - Leak detection equipment; leak detection procedures; leak survey frequencies; program evaluation
  - Define what weather conditions are suitable for the leak detection equipment.
  - Minimum sensitivity of 5 ppm or less within 5 feet of pipeline
  - More frequent surveys during challenging conditions
  - Evaluate effectiveness of ADLP annually.

Notice of Proposed Rulemaking

Safety of Gas Distribution Systems
Comments due by November 6, 2023

- Regulator stations serving low pressure systems required to have 2 methods of overpressure protection.
  - Minimize risk of overpressure protection failures
  - Remote monitoring of gas pressure near the location of the overpressure protection devices.
- Have procedure to respond and correct overpressure conditions.
- Subject matter expert review and certify modifications to pressure regulator stations.
- Keep traceable, verifiable, and complete records of pressure control equipment
  - Must develop records if none are available.

Notice of Proposed Rulemaking

Safety of Gas Distribution Systems
Comments due by November 6, 2023

- A documented evaluation of any construction projects that could cause an overpressurization.
- If overpressurization may occur because of construction project:
  - One qualified person at site during construction activity;
  - Monitor gas pressure
  - Promptly shut off flow if overpressurization occurs.
- Modify DIMP to include risks associated with low pressure systems.
  - Document evaluation for low probability events and submit copy to regulator.

KCC Pipeline Safety Staff

emails

- paul.owings@ks.gov
- kccpipelinesafety@ks.gov
- kcc.utilitydamage@ks.gov
- Kcc.safetyresponse@ks.gov

Paul Owings
Chief Engineer
paul.owings@ks.gov
785-271-3141

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