

Pipeline Safety

Topics of Discussion

2023

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Seminar Housekeeping

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

Presentations

- Public version of all presentations will be available on KCC website.
- Link listed on the agenda and on the center of your table.

KCC Pipeline Safety Training Opportunities

- **Kansas Municipal Utilities training center.**
- **Barton County Community College.**
- **KCC Coordinated Municipal/small utility training (anyone can attend)**
 - **Focus on emergency response and generic tasks.**
 - **Typically 80 attendees; 30 operators**
 - **Vacant....**
 - **Chanute**
 - **Sawyer**
 - **McLouth**
 - **Moundridge**

KCC Pipeline Safety Training Opportunities

- **Pipeline Safety Newsletter.**
- **Other training opportunities/seminars**
 - **Trade Association Meeting**
 - **City Councils?**
 - **Excavator awareness meetings**

www.kcc.ks.gov

- **2011-2022 Presentations also available.**
- **Other presentations available from past years, but not on website.**

www.kcc.ks.gov

- **Click on Pipeline Safety tab**
- **Pipeline Safety Forms**
- [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.....**

PHMSA Notices Published in the Federal Register

- <https://www.phmsa.dot.gov/regulations/federal-register-documents>
- **Contains all official statements from PHMSA**
 - Rulemakings
 - Meeting schedules
 - Safety Advisories

Recent Advisory Bulletins

- **ADB-19-01: Damage to Pipeline Facilities Caused by Flooding, River Scour, and River Channel Migration**
- **Actions to take to ensure the integrity of pipelines in the event of flooding, river scour, and river channel migration.**
- **Bulletin provides 15 considerations:**
 - **Can pipeline withstand risks of anticipated flood conditions?**
 - **Are facilities accessible that would be needed to isolate the water crossing?**
 - **After flooding determine if pipeline is exposed or undermined.**

Recent Advisory Bulletins

- **ADB-20-02: Overpressure Protection on Low-Pressure Natural Gas Distribution Systems**
- **possibility of failure due to an overpressurization on low-pressure distribution systems.**
- **Consider requirements of Distribution Integrity Management.**
 - **Identify and assess risks on their distribution lines,**
 - **Remediate conditions that present a potential threat**
 - **Monitor program effectiveness**

Recent Advisory Bulletins

- **ADB-22-01: Potential for Damage to Pipeline Facilities Caused by Earth Movement and Other Geological Hazards**
- **Potential for damage to pipeline facilities caused by earth movement in variable, steep, and rugged terrain and terrain with varied or changing subsurface geological conditions.**
- **Owners and operators should consider monitoring geological and environmental conditions, including changing weather patterns, in proximity to their facilities.**

PHMSA Explanation of Concepts: Staff Manuals and Instructions Enforcement Guidance

- <http://www.phmsa.dot.gov/foia/e-reading-room>
- <https://www.phmsa.dot.gov/pipeline/enforcement/enforcement-program-0>

American Public Gas Assn. Security & Integrity Foundation APGA-SIF

- www.apgasif.org
 - SHRIMP Program for Distribution Integrity Management
 - Drug and Alcohol Program
 - Operations and Maintenance Procedures
 - Operator Qualification Training and Evaluations

Discussion of Current Topics Related to Pipeline Safety Regulations

GOALS

- *Discuss questions derived from Staff field observations related to regulation.*
- *Receive input from operators.*
- *Official interpretations will be issued in writing.*
- *Vetted through operators and PHMSA.*

Discussion of 192.603 and 192.615 Municipal System Changes in Personnel

- **Kansas has 51 municipal systems**
- **Typically, one main person is the operator**
- **In 2023, twelve systems have had personnel changes.**
- **Most municipals use 911 as their emergency contact number.**

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

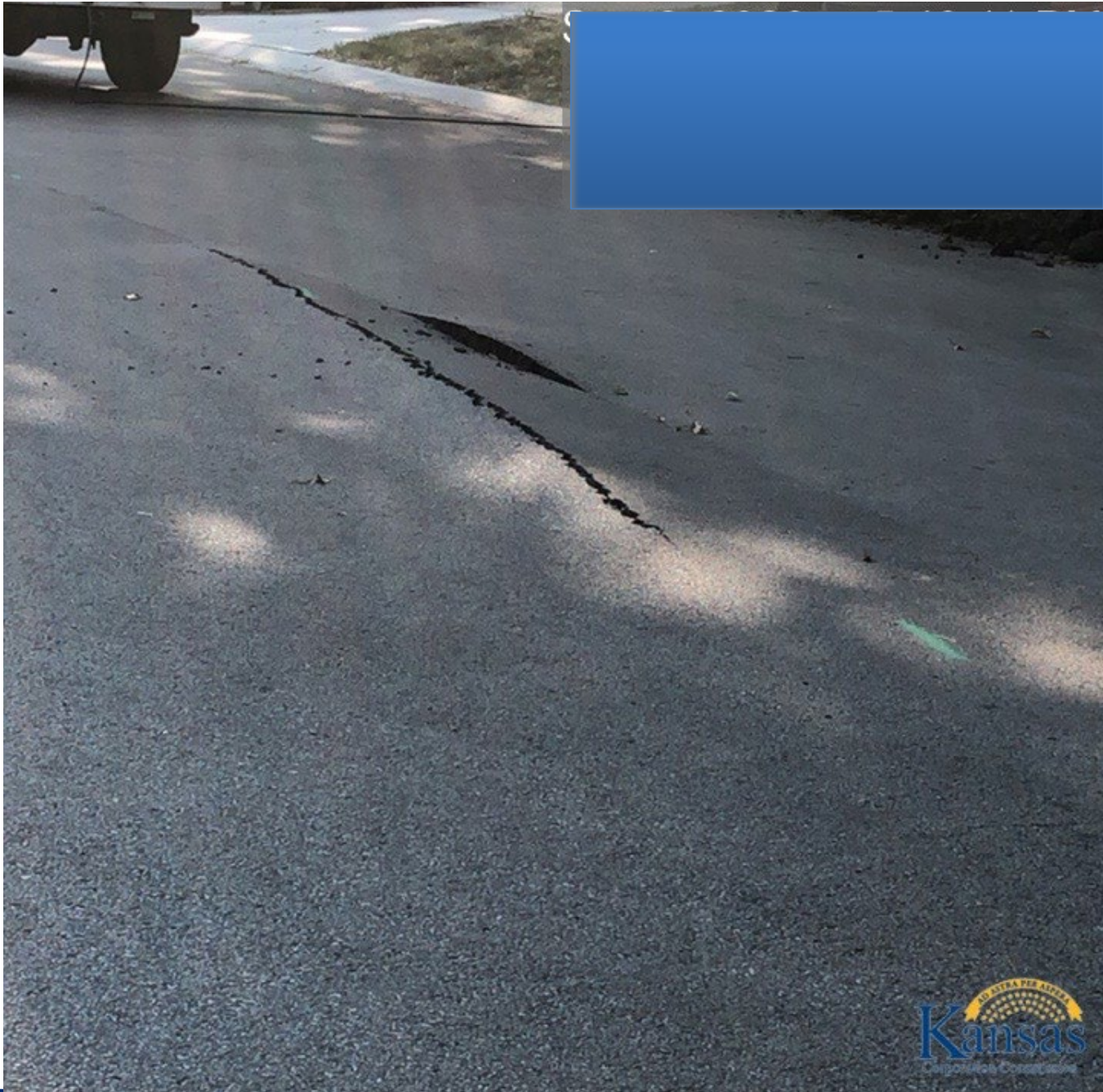
- **Barhole for gas concentrations in soil between piping and structure foundation.**
- **Check sewers for gas concentration.**

“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.**

“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...**



11/30/2023

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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.**

Renewable Natural Gas (RNG)

- **Biogas collected from landfills and cattle operations.**
- **If placed in pipeline, can be priced as high as \$100/MMBtu in carbon credit offsets.**
- **Short transmission lines subject to pipeline safety regulations.**
- **Other alternative is trucking and connecting to a pipeline system.**





DANGER

No
Smoking





Renewable Natural Gas (RNG)

- Where does pipeline safety jurisdiction begin?
- When is the gas in transportation?
- Got a procedure?

Farm Tap Wick Odorizers

- Federal Code: “must conduct periodic sampling”; “must introduce odorant without wide variations in odor level.
- KAR changes to 192.625:
- (f) ..Proper concentration of odorant shall be ensured by conducting periodic sampling of combustible gases as follows:
 - (1) Conduct monthly odorometer sampling of combustible gases at selected points in the system; and
 - (2) Conduct sniff tests during each service call where access to a source of gas in the ambient air is readily available.





11/30/2023

Corporation Commission



Farm Tap Wick Odorizers

- Conducting monthly sampling:
- Impractical for individual odorizers
- Difficult to get access to odorometer test point.
- Need to insure odorizer is working
 - Not empty;
 - Not completely full

Farm Tap Wick Odorizers

- Possible solutions
 - Change out odorizers annually.
 - Weigh before and after change out
 - Record gas usage and calculate lbs./mmcf used
- Seminar “interpretation” from 1997
 - Odor test 5% of taps each month
- 3% per month is roughly once every three years.
- How much odor is used still needs to be determined
- Proper approach is to request a waiver to regulation.

Notice of Proposed Rulemaking

Patrolling frequency for transmission systems

192.705

Class	Current Law other than hwy crossings	NPRM
Class 1, 2	1/year	12 times/yr
Class 3	2 times/year	12 times/yr
Class 4	4 times/year	12 times/yr

Notice of Proposed Rulemaking

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Leak Survey frequency for transmission systems 192.706

Class	Current Law	NPRM for pipe in HCAs
Class 1, 2	1/year	2 times/yr
Class 3	2 times/yr if no odor	2 times/yr
Class 4	4 times/yr if no odor	4 times/yr

- Extends leak surveys to gas gathering.
- Must use leak detection equipment meeting advanced leak detection performance standard 192.763
- No changes to requirements outside of HCAs

Notice of Proposed Rulemaking

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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

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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

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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; <u><10 cfh</u>

Notice of Proposed Rulemaking

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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

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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

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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.

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