

**VIRGINIA STATE CORPORATION COMMISSION
DIVISION OF UTILITY AND RAILROAD SAFETY
PIPELINE SAFETY PROGRAM METRICS**



ISSUED: 1/28/2022

FEDERAL AND STATE PARTNERSHIP IN PIPELINE SAFETY BACKGROUND:

The federal government establishes minimum pipeline safety standards under the U.S. Code of Federal Regulations (“CFR”), Title 49 "Transportation", Parts 190 - 199. The Office of Pipeline Safety (“OPS”), within the U.S. Department of Transportation Pipeline and Hazardous Materials Safety Administration (“PHMSA”), has overall regulatory responsibility for hazardous liquid and gas pipelines under its jurisdiction in the United States.

The federal pipeline safety statutes found at 49 U.S.C. § 60101 *et seq.*, require the Secretary of Transportation ("Secretary") to establish minimum federal safety standards for pipeline transportation and pipeline facilities. The Secretary is further authorized to delegate to an appropriate state agency the authority to prescribe safety standards and enforce compliance with such standards over jurisdictional pipeline facilities used for intrastate transportation.

Through certification by OPS, the Virginia State Corporation Commission (“Commission”) has been designated as the appropriate state agency for the Commonwealth of Virginia to prescribe and enforce compliance with standards for jurisdictional pipeline facilities used for intrastate transportation. The Commission’s Division of Utility and Railroad Safety (“Division”) inspects, for compliance with the pipeline safety regulations, intrastate gas and hazardous liquid pipeline operators in Virginia. Following a thorough investigation, potential non-compliances are forwarded to the Commission’s Office of General Counsel for enforcement.

In addition, the Division inspects the Commonwealth’s three municipal gas systems. Through a signed agreement with PHMSA, inspection results for these municipal gas systems are forwarded to OPS for enforcement.

Also, by signed agreement with OPS, the Division is authorized to assist PHMSA, as an interstate agent, in inspecting interstate hazardous liquid pipeline operators in Virginia. Inspection findings are reported to PHMSA, and OPS enforces any non-compliances found.

During the 2016 session, the Virginia General Assembly passed legislation (§ 56-555.2 of the Code of Virginia) that requires the Commission to seek designation by the Secretary as an interstate agent to conduct inspections of interstate natural gas facilities in the Commonwealth. Currently, through a signed time deferred agreement with OPS, the Division is authorized to inspect, as an agent of PHMSA, the construction of the Atlantic Coast Pipeline and Mountain Valley Pipeline projects. Inspections results are submitted to PHMSA’s Eastern Region Office.

STATE CORPORATION COMMISSION PIPELINE SAFETY BACKGROUND

The Commission adopted a uniform code of rules and safety regulations for the design, construction, operation and maintenance of jurisdictional natural gas transmission and distribution facilities in Virginia on February 21, 1967, which predated the federal regulations.

On August 12, 1968, the President signed the Natural Gas Pipeline Safety Act ("Pipeline Safety Act") into law. The Pipeline Safety Act authorized the federal government to oversee the safety regulation of interstate and intrastate gas pipeline facilities. The Pipeline Safety Act also gave the states an opportunity to become a partner in gas pipeline safety regulation. A grant program was authorized by the Pipeline Safety Act to encourage the states to assume responsibility for the safety of intrastate gas facilities operated by local gas distribution companies. Subsequently and through the years Parts 191, 192, 193, 195, 199 of Title 49, Code of Federal Regulations ("CFR") were federally adopted.

Similarly, through the years the Commission adopted the applicable Parts of the CFR. Ultimately, in Commission Case No. PUE-1989-00052, the Commission adopted Parts 191, 192, 193, and 199 of Title 49 of the CFR to serve as minimum gas pipeline safety standards in Virginia. The Commission is authorized to enforce the standards for natural gas facilities under § 56-257.2 B of the Code of Virginia ("Code"), which allows the Commission to impose the fines and penalties authorized therein.

In Case No. PUE-1994-00070, the Commission adopted Parts 195 and 199 of Title 49 of the CFR to serve as minimum intrastate hazardous liquids pipeline safety standards. The Commission is authorized to enforce the standards for liquid pipeline facilities under § 56-555 of the Code, which allows the Commission to impose the fines and penalties authorized therein.

The Commission's Division of Utility and Railroad Safety ("Division" or "URS") is charged with the inspections to determine compliance and the investigation of each jurisdictional operator's potential non-compliances with the safety standards. Annually, the Division conducts various inspections of records, required programs, construction, repairs, and operation/maintenance activities involving these operators.

PIPELINE SAFETY PROGRAM OVERSIGHT:

As part of its annual grant evaluation process, the Pipeline and Hazardous Materials Safety Administration (“PHMSA”) performs thorough evaluations of each state pipeline safety regulatory program. To support this evaluation, PHMSA and the National Association of Pipeline Safety Representatives (“NAPSR”) have developed a set of performance metrics. These PHMSA metrics assess each state’s pipeline safety program performance in six areas:

- Damage Prevention Program
- Inspection Activity
- Inspector Qualification
- Leak Management
- Enforcement
- Incident Investigation

The PHMSA metrics for Virginia are provided below and are also available under “Virginia State Pipeline Safety Program Performance Metrics” at:

<https://primis.phmsa.dot.gov/comm/statepages/virginia.htm>

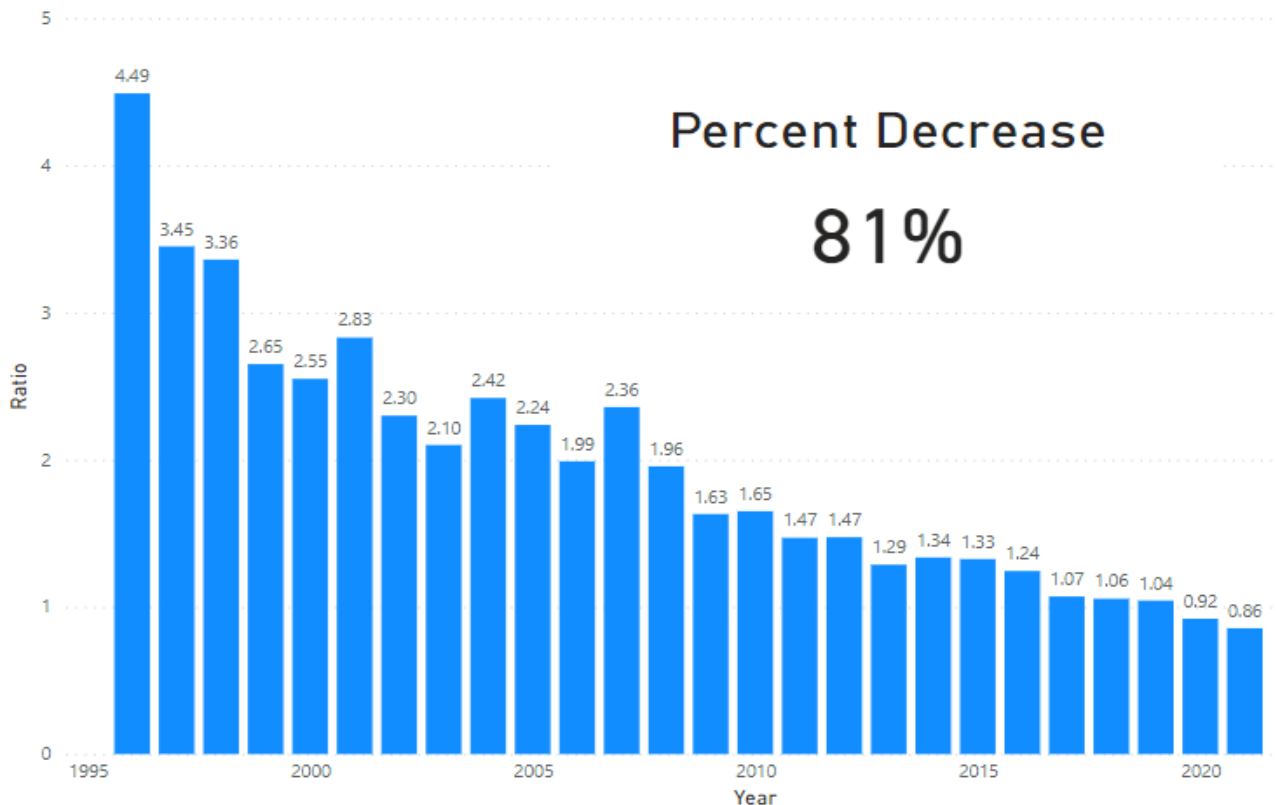
DAMAGE PREVENTION PROGRAM:

Excavation damage is the leading cause of natural gas distribution pipeline incidents, and a leading cause of other pipeline incidents nationwide. A critical step in preventing excavation damage is for the excavator to notify pipeline operators of intent to excavate at a specific location. This is normally done by the excavator calling a one-call center. The one-call center then issues a locate ticket to inform pipeline operators and other underground utility operators with facilities located near the planned excavation activity. Pipeline and other utility operators can then locate and mark the location of their pipelines and other utilities. The system in Virginia, can also facilitate communicate with the excavator as necessary to prevent damage to the pipelines and utilities.

In Virginia VA811 (<http://www.va811.com/>) is the current Commission Certified notification center. Anyone with the intent to excavate or demolish as defined by Underground Utility Damage Prevention Act (“Damage Prevention Act”) in § 56-265.15 of the Code of Virginia. The Damage Prevention Act was established in 1979. Section 56-265.30, enacted in 1995, authorized the Commission to enforce the Damage Prevention Act. For more on pipeline and underground utility damage prevention please see our Damage Prevention page.

The number of pipeline excavation damage occurrences per 1,000 locate tickets is an established benchmark within the damage prevention industry and an important indicator of damage prevention program performance. However, variations among state laws regarding locate ticket size and scope, along with the length of time a locate ticket is valid, will limit any state to state comparison of this metric. Since the Commission was authorized to enforce the Damage Prevention Act, there has been over an 81% decrease in excavation damages. Virginia continues to have one of the lowest damage rates in the Country. The metric below shows the Virginia damage ratio per 1,000 locate requests since the Commission gained enforcement in 1995 to 2021:

Gas Damages per Thousand Gas Tickets

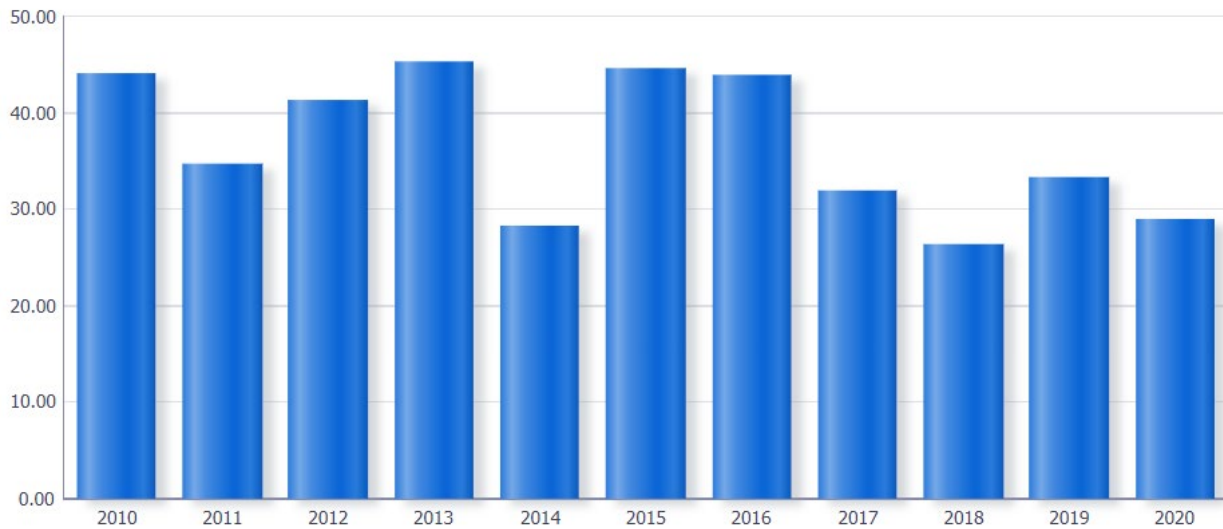


INSPECTION ACTIVITY:

State Program regulator inspection time with each pipeline operator is vital in identifying compliance issues and gaining knowledge about the condition of the operator’s systems.

PHMSA’s measurement of the level of inspection activity by the Commission is based on the number of inspection days per combined miles of distribution (including mains and service lines), gathering, and transmission lines. Measurement of the level of inspection activity spent on master meter and small liquid propane gas (LPG) system operators is shown separately, where applicable, as those operators are handled individually by each state due to various unique considerations.

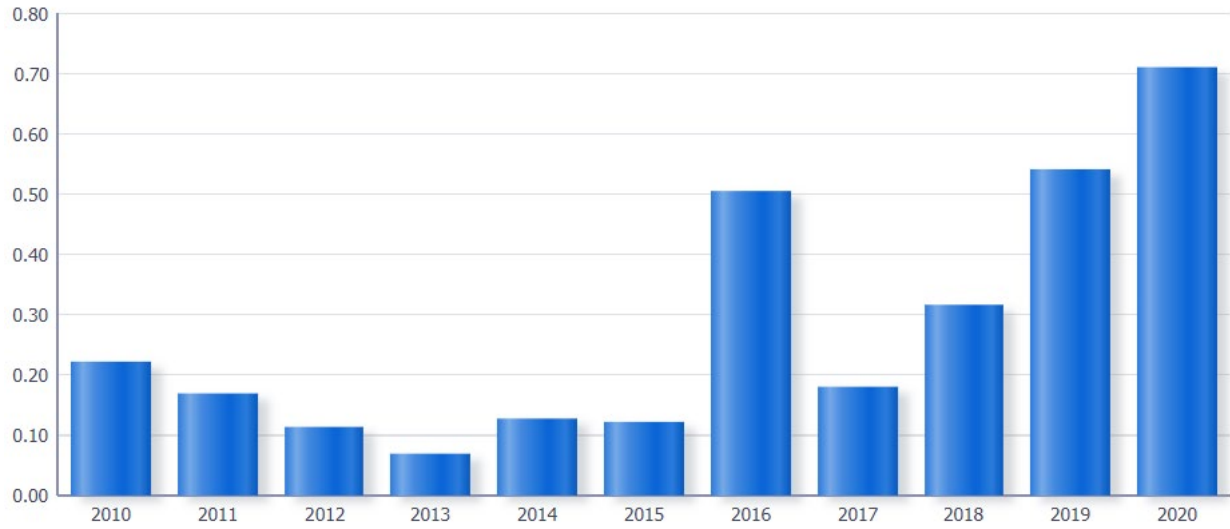
Virginia State Corporation Commission : Inspection Days per 1,000 Mile Gas Pipelines



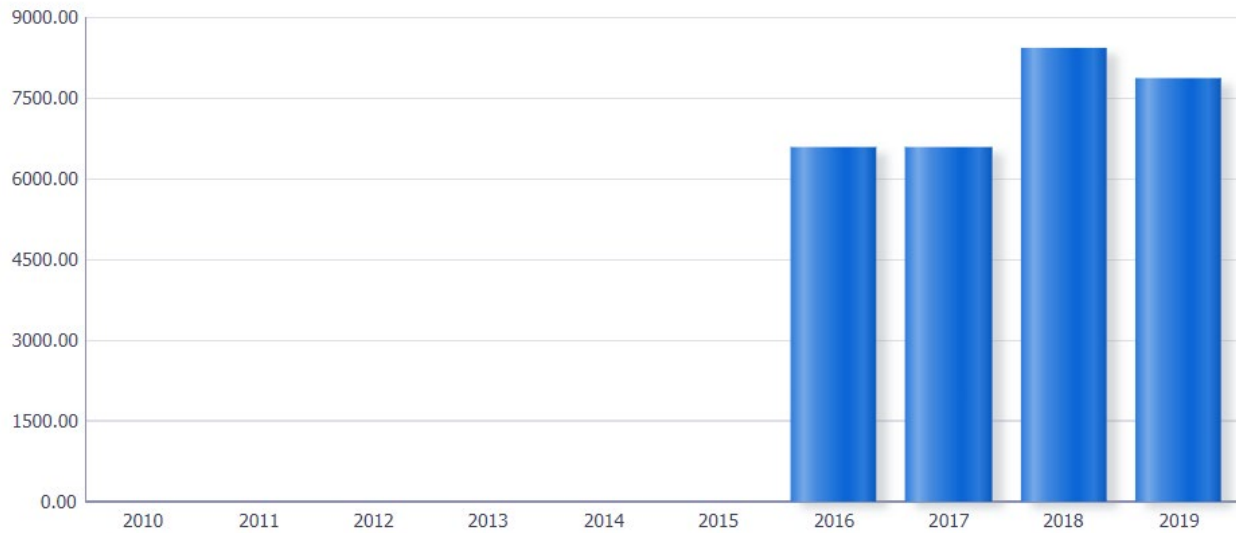
RECENT VIRGINIA INDIVIDUAL INSPECTIONS TOTALS BY YEAR

INSPECTION YEAR	NUMBER OF INSPECTIONS
2014	1,479
2015	1,556
2016	2,173
2017	2,141
2018	2,136
2019	2,177
2020	2,043
GRAND TOTAL	13,705

VIRGINIA STATE CORPORATION COMMISSION : Inspection Days Per MMO/LPG Unit



Virginia State Corporation Commission : Inspection Days per 1,000 Mile Hazardous Liquid Pipelines

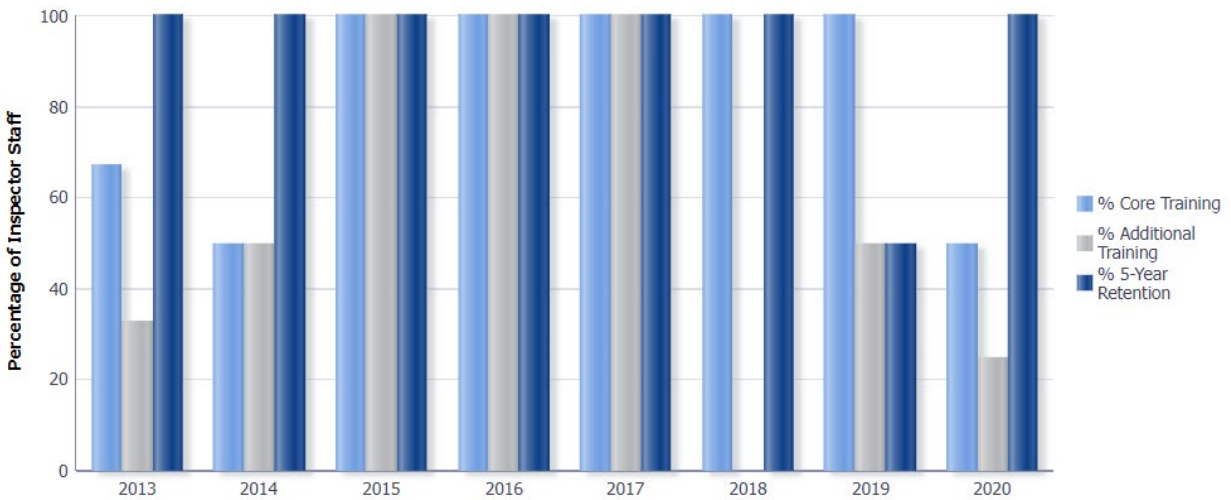


INSPECTOR QUALIFICATION:

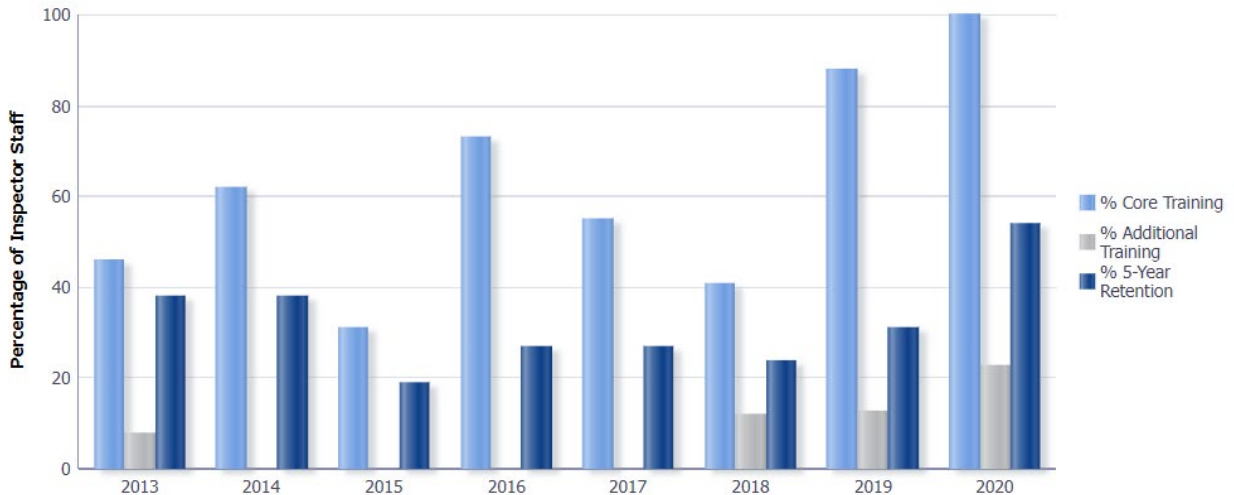
During the State Program evaluation, PHMSA looks at three separate attributes, considering the percentages of the state's pipeline safety inspection staff that have:

1. Successfully completed the core pipeline safety training program
2. Successfully completed additional training:
 - a. For hazardous liquid pipeline inspectors, successfully completed all training to qualify as a Hazardous Liquid Pipeline Integrity Management (IM) Inspector; the Control Room Management (CRM) class; and the Operator Qualification (OQ) Web-based Training (WBT)
 - b. For gas pipeline inspectors, successfully completed all training to qualify as a Gas Pipeline Integrity Management (IM) Inspector; the CRM class, the OQ WBT, and the Distribution Integrity Management Program (DIMP) class
3. Five or more years of inspection experience.

Virginia State Corporation Commission: Hazardous Liquid Pipeline Inspector Qualification



Virginia State Corporation Commission: Gas Pipeline Inspector Qualification

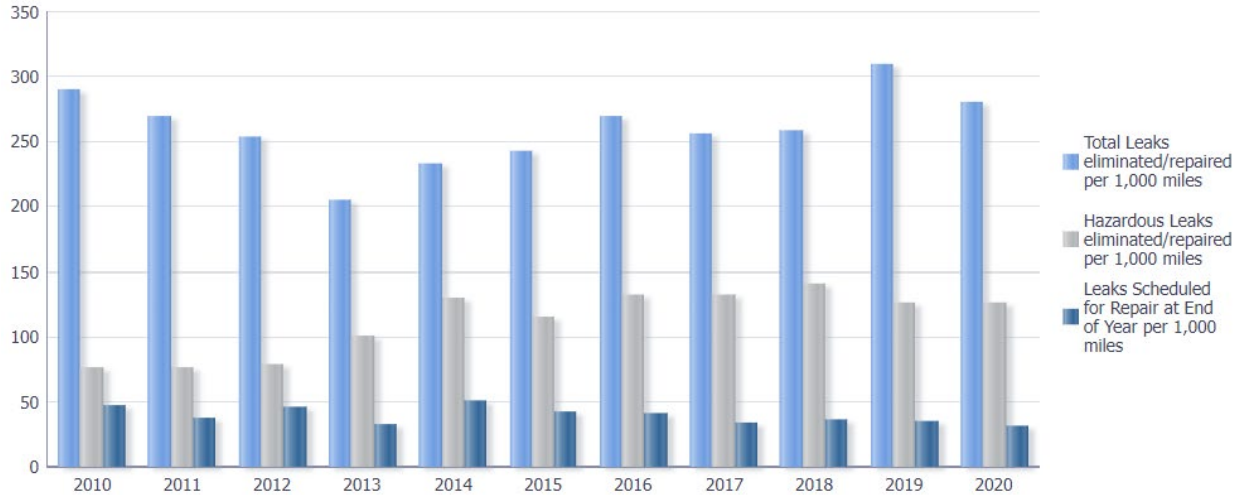


LEAK MANAGEMENT:

The leak management metric is measured by the total number of leaks repaired per mile; the total number of hazardous leaks repaired per mile; and the total leaks scheduled for repair per mile for gas distribution systems in each state, as reported to PHMSA annually. This provides an overview of the status of gas distribution pipeline systems in each state and the efforts to locate, evaluate, repair, and mitigate leaks.

Hazardous leaks represent existing or probable hazards to persons or property and require immediate repair or continuous actions until the conditions are no longer hazardous. Remaining leaks are graded dependent upon the criteria a pipeline operator discovers during their leak investigation. For instance, some leaks may be graded as non-hazardous at the time of detection, but repairs are scheduled, and the leak monitored until the repair is completed. This allows for effective leak management prioritizing leak investigations/response which may be of the greatest risk to the public.

Virginia State Corporation Commission: Gas Distribution System Leaks



To further, reduce leaks operators replace legacy pipelines which may be at a great risk to develop leaks based on material composition or other factors., The Steps to Advance Virginia’s Energy Plan (“SAVE”) Act (§56-603 of the Virginia Code) was passed in 2010. The SAVE Act allows for natural gas utilities to file for recovery of related eligible infrastructure replacement costs. Under the SAVE Act, Eligible infrastructure replacement includes natural gas utility facility replacement projects that: (i) enhance safety or reliability by reducing system integrity risks associated with customer outages, corrosion, equipment failures, material failures, or natural forces; (ii) do not increase revenues by directly connecting the infrastructure replacement to new customers; (iii) reduce or have the potential to reduce greenhouse gas emissions; (iv) are commenced on or after January 1, 2010; and (v) are not included in the natural gas utility’s rate base in its most recent rate case using the cost of service methodology set forth in § 56-235.2, or the natural gas utility’s rate base included in the rate base schedules filed with a performance-based regulation plan authorized by § 56-235.6, if the plan did not include the rate base.

The Commission's Division of Public Utility Regulation ("PUR") reviews rates and costs and enforces general regulations and service standards. SAVE filings are under PUR's purview and, when requested provides technical assistance regarding pipeline safety matters.

PUR is also charged with investigating consumer complaints regarding electric, natural gas, water and sewer utilities, and communications companies. Matters that pertain to pipeline safety are forwarded to URS for review. For more information, please see PUR's webpage at <http://www.scc.virginia.gov/pur/gas.aspx>

Currently many private gas distribution systems have SAVE infrastructure projects across the Commonwealth. These focus on replacing legacy infrastructure such as bare steel and cast iron, amongst other types. Additionally, the three municipal gas distribution operators, who are not eligible for the SAVE program also have replacement programs for legacy facility types. The efforts by all operators through SAVE and other replacement programs have dramatically reduced the mileage of legacy pipeline material types in Virginia.

Virginia Miles by Material Type- Gas Distribution

Pipe Material	Calendar Year	MAIN			SERVICES		
		Total Miles	% of Miles	# of Services	Total Miles	% of Miles	# of Services
STEEL	2020	6,151.9	27.78		2,164.4	10.93	138,432
	2019	6,239.8	28.40		2,242.4	11.48	144,516
	2018	6,298.4	28.93		2,349.0	12.17	151,329
	2017	6,340.5	29.36		2,443.7	12.77	157,397
	2016	6,412.5	29.88		2,566.2	13.39	163,260
	2015	6,487.7	30.46		2,661.9	13.95	168,707
	2014	6,524.6	30.86		2,759.0	14.55	173,444
	2013	6,572.6	31.38		2,888.0	15.37	180,136
	2012	6,693.8	32.11		3,012.5	16.06	188,000
	2011	6,779.7	32.62		3,417.0	18.38	212,210
	2010	7,017.5	34.06		3,418.9	18.71	215,998
PLASTIC	2020	15,749.9	71.13		17,282.1	87.24	1,152,035
	2019	15,475.3	70.43		16,915.1	86.63	1,135,975
	2018	15,199.6	69.81		16,573.9	85.89	1,114,157
	2017	14,962.5	69.27		16,302.3	85.21	1,095,016
	2016	14,714.7	68.56		16,184.9	84.48	1,075,511
	2015	14,446.4	67.83		15,998.8	83.84	1,056,773
	2014	14,220.7	67.26		15,770.9	83.18	1,037,738
	2013	13,925.6	66.50		15,460.1	82.25	1,016,767
	2012	13,627.8	65.37		15,289.5	81.49	1,004,240
	2011	13,382.3	64.39		14,695.9	79.04	962,373
	2010	12,881.6	62.52		14,372.5	78.64	939,521
OTHER MATERIALS	2020	3.7	0.02		55.9	0.28	4,697
	2019	3.9	0.02		57.1	0.29	4,813
	2018	3.9	0.02		54.3	0.28	4,622
	2017	4.4	0.02		56.4	0.29	4,805
	2016	4.8	0.02		61.6	0.32	5,243
	2015	5.1	0.02		64.8	0.34	5,520
	2014	5.3	0.03		66.9	0.35	5,697
	2013	5.8	0.03		76.9	0.41	6,553
	2012	5.8	0.03		84.8	0.45	7,219
	2011	11.7	0.06		84.7	0.46	7,233
	2010	1.0	0.00		83.4	0.46	7,219
IRON	2020	231.7	1.05		1.0	0.00	84
	2019	246.2	1.12		1.0	0.01	84
	2018	263.5	1.21		1.0	0.01	85
	2017	280.8	1.30		1.0	0.01	85
	2016	319.7	1.49		1.0	0.01	86
	2015	347.3	1.63		1.0	0.01	87
	2014	379.6	1.80		1.0	0.01	88
	2013	425.3	2.03		1.0	0.01	88
	2012	506.3	2.43		1.1	0.01	89
	2011	594.1	2.86		7.3	0.04	631
	2010	686.8	3.33		7.3	0.04	634
COPPER	2020	5.2	0.02		307.1	1.55	22,382
	2019	7.7	0.04		310.9	1.59	23,139
	2018	8.5	0.04		319.5	1.66	23,795
	2017	10.7	0.05		328.2	1.72	24,426
	2016	11.1	0.05		345.4	1.80	25,100
	2015	11.5	0.05		355.3	1.86	25,806
	2014	12.9	0.06		361.1	1.90	26,219
	2013	13.0	0.06		369.8	1.97	26,837
	2012	13.0	0.06		375.7	2.00	27,276

ENFORCEMENT

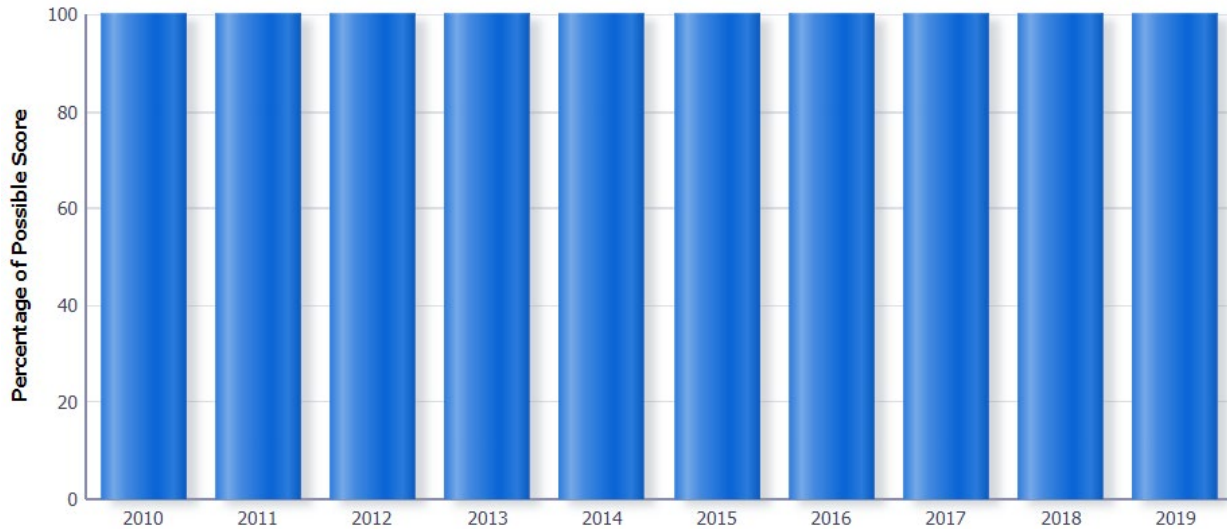
Effective state enforcement programs and processes are necessary to ensure all operators are in compliance with all applicable pipeline safety regulations. The effectiveness of the Commission's pipeline safety efforts depends on information obtained through inspections and evaluation of operator compliance. PHMSA requires each State agency to have a current written plan for its pipeline safety program.

An important aspect of the Commission's compliance program involves the gathering of the necessary evidence for documenting noncompliance. After each inspection, any findings are documented and include an account of the situations encountered during the inspection.

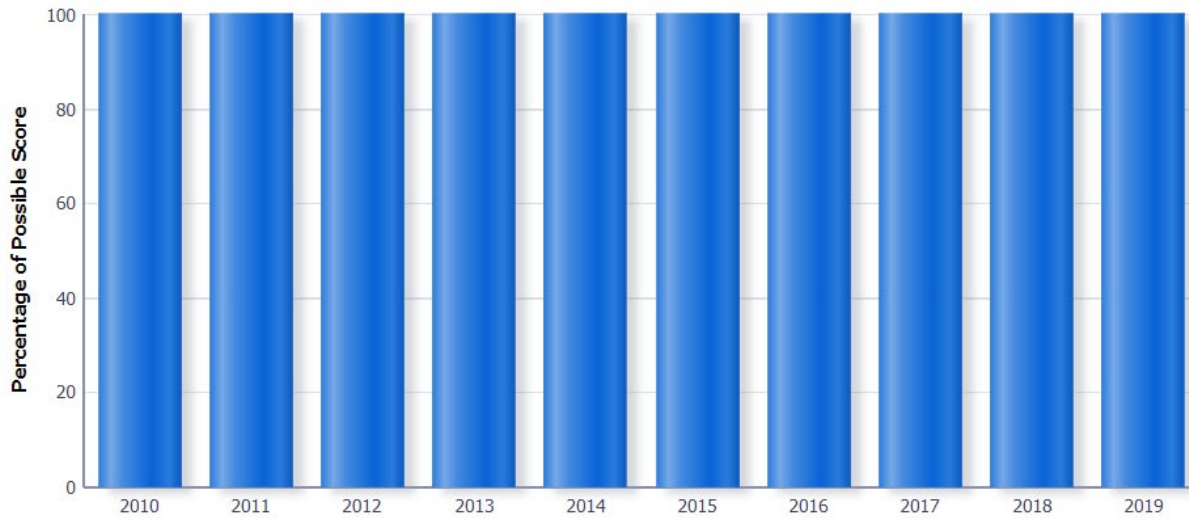
The documentation must identify and describe each regulation with which the operator is believed to be in noncompliance. Copies of relevant operator records, statements from operator personnel, photographs, calculations, and any other data pertaining to each issue of noncompliance is documented and retained. This documentation will be used throughout the investigation, enforcement, and final disposition of non-compliances.

This PHMSA metric demonstrates the effectiveness of Commission's regulatory enforcement program. It is based on PHMSA's annual evaluation of the state's enforcement program, with review of the state's records and procedures. The state's performance is measured against the percentage of possible score that the state could achieve.

Virginia State Corporation Commission: Gas Pipeline Enforcement Program Evaluation



Virginia State Corporation Commission: Hazardous Liquid Pipeline Enforcement Program Evaluation



GAS: VIRGINIA STATE CORPORATION COMMISSION

Year	Compliance Actions Taken	Number of Penalties Assessed	Dollars Assessed	Number of Penalties Collected	Dollars of Penalties Collected
2001	67	4	56,900	4	56,900
2002	14	2	57,000	2	57,000
2003	3	3	173,150	3	173,150
2004	4	4	148,800	4	148,800
2005	71	8	540,800	8	540,000
2006	11	8	491,450	8	491,450
2007	4	4	137,925	4	137,925
2008	4	4	319,750	4	319,750
2009	4	4	323,000	4	323,000
2010	10	10	1,196,600	10	1,196,600
2011	6	6	463,650	6	463,650
2012	9	9	787,675	9	787,675
2013	6	6	627,550	6	627,550
2014	7	7	741,000	7	741,000
2015	4	4	296,000	4	296,000
2016	11	11	945,000	0	945,000
2017	24	9	618,100	9	618,100
2018	46	4	10,000	50	510,100
2019	28	7	362,000	5	320,000
2020	45	8	78,000	8	78,000

HAZARDOUS LIQUID: VIRGINIA STATE CORPORATION COMMISSION

Year	Compliance Actions Taken	Number of Penalties Assessed	Dollars Assessed	Number of Penalties Collected	Dollars of Penalties Collected
2001	2				
2002	0	0	0	0	0
2003	0	0	0	0	0
2004	0	0	0	0	0
2005	0	0	0	0	0
2006	4	0	0	0	0
2007	0	0	0	0	0
2008	0	0	0	0	0
2009	1	1	14,000	1	14,000
2010	1	1	9,500	1	9,500
2011	1	1	9,500	1	9,500
2012	1	1	2,000	1	2,000
2013	1	1	2,000	1	2,000
2014	0	0	0	0	0
2015	0	0	0	0	0
2016	0	0	0	0	0
2017	1	1	4,500	1	4,500
2018	0	0	0	0	0
2019	0	0	0	0	0
2020	0	0	0	0	0

GAS: VIRGINIA STATE CORPORATION COMMISSION

Year	Number Found During Year	Number Submitted to DOT for Action	Number Corrected During Year
2001	89		52
2002	512		218
2003	145		70
2004	193	0	117
2005	1,087		160
2006	80	0	567
2007	122	2	137
2008	194	40	79
2009	109	4	144
2010	465	2	465
2011	597	36	597
2012	322	0	322
2013	83	2	83
2014	63	8	71
2015	15	15	30
2016	34	8	25
2017	68	9	39
2018	80	24	16
2019	16	9	22
2020	1	22	143

- 1- Number Found During Year: The number of new probable violations identified during the calendar year through inspections, investigations, and other means.

- 2- Number Submitted for DOT Action: The number of probable violations that are referred to PHMSA for Federal enforcement. Compliance actions may be referred to PHMSA in situations where the state pipeline safety program is not certified to take enforcement action on certain intrastate pipelines. For example, some states do not have enforcement authority of municipal pipeline systems. Furthermore, some state pipeline safety programs are authorized by PHMSA to inspect interstate pipelines on PHMSA's behalf as Interstate Agents. In these situations, any probable violations identified by Interstate Agents must be referred to PHMSA for enforcement.

- 3- Number Corrected During Year: The number of probable violations that were satisfactorily corrected during the calendar year. These could be violations identified in the current year as well as violations that were carried over from previous years. Violations are satisfactorily resolved when the operator provides evidence and satisfies the agency that the non-compliances have been properly addressed and corrected.

HAZARDOUS LIQUID: VIRGINIA STATE CORPORATION COMMISSION

Year	Number Found During Year	Number Submitted to DOT for Action	Number Corrected During Year
2001	13		
2002	4		2
2003	4		2
2004	0	0	0
2005	1		1
2006	0	0	0
2007	1	0	1
2008	0	0	0
2009	3	0	3
2010	1	0	1
2011	0	0	0
2012	1	0	1
2013	1	0	1
2014	0	0	0
2015	0	0	0
2016	0	0	0
2017	1	0	0
2018	0	0	0
2019	0	0	0
2020	0	0	0

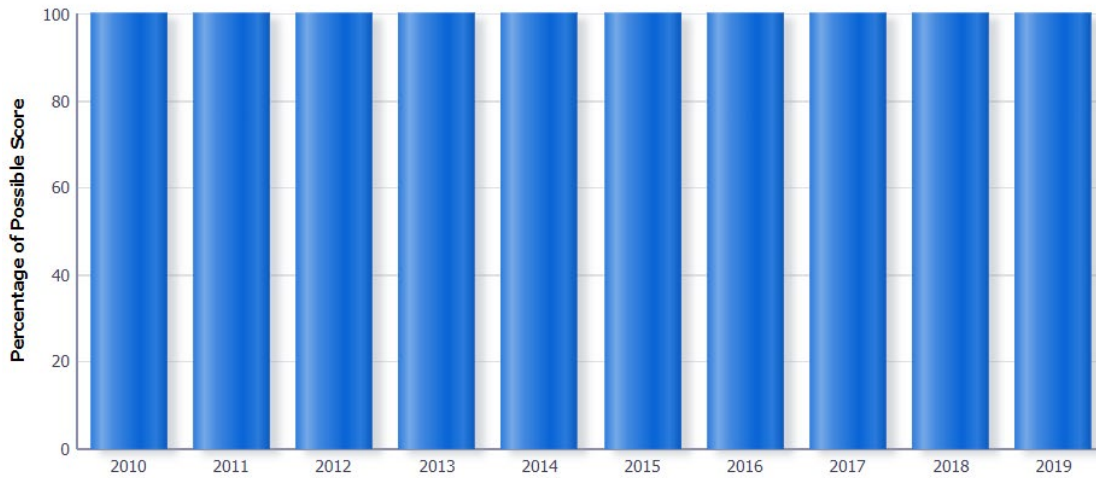
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INCIDENT INVESTIGATION

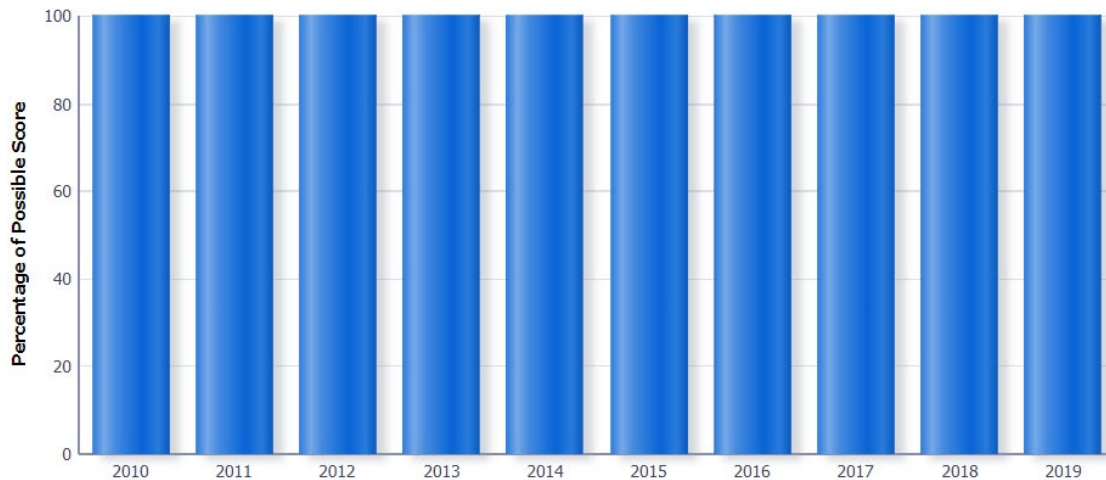
All state pipeline safety agencies are required have effective incident investigation processes and must conduct investigations of each significant or reportable incident/accident involving a jurisdictional pipeline facility. The primary objective of the Commission's incident investigation activity is to minimize the possibility of recurrence and to institute enforcement actions where noncompliance with the safety standards have occurred. Effective incident investigation processes are also necessary to ensure operators have and effectively implement emergency response procedures and make continuous improvements to their emergency response programs.

This PHMSA metric demonstrates the effectiveness of the Commission's incident investigation process. It is based on PHMSA's annual evaluation of the Commission's pipeline safety program. During that annual evaluation, amongst other things, PHMSA reviews the Commission's records and procedures. It is measured against the percentage of possible score that the state could achieve and is measured separately for hazardous liquid and natural gas pipelines. Since significant pipeline incidents are rare, state partner agencies including the Commission, may not have an incident investigation to conduct in each calendar year. In these years, evaluation of a state's incident investigation performance may be limited to evaluation of the procedures the state has in place.

Virginia State Corporation Commission: Gas Pipeline Incident Investigation Program Evaluation



Virginia State Corporation Commission: Hazardous Liquid Pipeline Incident Investigation Program Evaluation



USEFUL LINKS AND RESOURCES

1. PHMSA Virginia state metrics page, which includes metrics discussed in this document;
<https://primis.phmsa.dot.gov/comm/statepages/virginia.htm>
2. PHMSA Information on public awareness programs, which includes information on required operator outreach to the public;
<https://primis.phmsa.dot.gov/comm/PublicAwareness/PublicAwareness.htm?nocache=172>
3. PHMSA Community Liaison Services; which handles inquiries regarding pipeline safety policy and programs and interstate pipeline matters;
<https://primis.phmsa.dot.gov/comm/CATS.htm?nocache=7653>
4. National Pipeline Mapping System; is a Public Map Viewer is a web-based mapping application designed to assist the public with displaying and querying general data related to transmission lines and certain pipeline facilities;
<https://www.npms.phmsa.dot.gov/>

NOTES AND SOURCES

NOTES:

1. PHMSA began collecting data for these metrics in 2010; prior to then adequate data was not readily available.

SOURCES:

- Gas Distribution Annual Report data submitted by pipeline operators to PHMSA
- Gas Transmission Annual Report data submitted by pipeline operators to PHMSA
- Hazardous Liquid Annual Report data submitted by pipeline operators to PHMSA
- Base Grant Progress Reports, State Field Inspection Activity, submitted by each state pipeline safety agency to PHMSA
- Qualified Liquid Standard inspectors, reports from PHMSA Training and Qualification Group
- Qualified Gas Inspectors, reports from PHMSA Training and Qualification Group
- Qualified Liquid IM Inspectors plus CRM and OQ WBT Courses, reports from PHMSA Training and Qualification Group
- Qualified Gas IM Inspectors plus CRM, OQ WBT, and DIMP Courses, reports from PHMSA Training and Qualification Group
- State Program Evaluations, Parts D and E, reports from PHMSA
- <https://primis.phmsa.dot.gov/comm/statepages/virginia.htm>