

# Lessons Learned Natural Gas Incidents

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# Presentation Outline

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- **NTSB Investigations**
- **PHMSA Incident Reports**
- **State Violations**
- **Process for Reviewing Lessons Learned**
- **PSMS**
- **What Can NGA Do?**
- **Thank you!**

# Building Explosion and Fire Silver Spring, Maryland August 10, 2016

7 residents died, 65 residents were transported to the hospital, and 3 firefighters were treated and released



# Building Explosion and Fire Silver Spring, Maryland August 10, 2016



the explosion was the failure of an indoor mercury service regulator with an unconnected vent line that allowed natural gas into the meter room where it accumulated and ignited from an unknown ignition source. Contributing to the accident was the location of the mercury service regulators where leak detection by odor was not readily available.

Without a requirement that technicians verify the connection of vent lines for indoor service regulators, such vent lines could inadvertently be left open following service work

Washington Gas Light Company relied on unvalidated information to determine the location and condition of mercury service regulators

# Building Explosion and Fire Silver Spring, Maryland August 10, 2016



Had service regulators been located outside, the explosion would not have occurred because gas would have vented to the atmosphere and dissipated.

The use of gas odorants alone does not effectively mitigate the risk of death and injuries caused by gas system leaks, such as the undetected leak that occurred at the Flower Branch apartment complex.

Had methane detectors been installed, an alarm would have alerted residents to a gas release reducing the potential and consequences of a natural gas explosion

# UGI Utilities Natural Gas-Fueled Explosion Millersville, Pennsylvania July 2, 2017



The explosion killed one person and injured three others, destroyed the residence and significantly damaged six neighboring homes, one of which was subsequently condemned



# UGI Utilities Natural Gas-Fueled Explosion Millersville, Pennsylvania July 2, 2017



NTSB determined the probable cause was an improperly installed mechanical tapping tee that leaked and allowed gas to migrate into the house where it ignited.

## UGI Implemented:

1. Remediated or replaced all known mechanical tee
2. undertook several training initiatives to emphasize the incident command system
3. updated its training to improve the skill set of its employees when responding to an emergency
4. contracted DuPont Sustainable Solutions (DSS) to assess the UGI safety culture
5. Updated its response procedures to include "safety perimeter" criteria

# Third-party Damage by Sure Shot Communications to Ameren Natural Gas Distribution System Canton, Illinois



On November 16, 2016, a natural gas-fueled explosion occurred at a two-level commercial building located in Canton, Illinois. One Ameren employee was killed and 11 people were injured, including two Ameren employees.





# Third-party Damage by Sure Shot Communications to Ameren Natural Gas Distribution System Canton, Illinois



Sure Shot Communications was performing directional drilling adjacent to the building to install conduit for fiber optic cable.

Sure Shot did not excavate the utility crossing location before starting the drilling work, as required by Illinois statute

The crew leader told NTSB investigators that the owner of Sure Shot instructed him not to excavate under the concrete slab to avoid replacing the relatively new concrete sidewalk

The Sure Shot employees, the Ameren field technicians, and Ameren dispatch center personnel did not call 911 to report the gas leak prior to the explosion

# Third-party Damage by Sure Shot Communications to Ameren Natural Gas Distribution System Canton, Illinois



Ameren employees responding to the damage report were on scene for about 1.5 hours before the explosion. The employees recorded gas readings were taken from the outside perimeter of the Opera House Professional Center building; however, they did not take any readings from inside the building despite Ameren having received both indoor and outdoor odor complaints.

Contributing to the severity of the accident was the failure of Sure Shot and Ameren to evacuate the area.

# PHMSA Incident Report



## Do You Know What Happened?

OPERATOR	CITY	STATE	LOCAL DATE AND TIME	YEAR	INCIDENT RESULTED	COMMODITY RELEASED TYPE	GAS RELEASED	FATALITY IND
CONSOLIDATED EDISON CO OF NEW YORK	NEW YORK	NY	1/4/2019 14:25	2019	UNINTENTIONAL R	NATURAL GAS	10765	NO
NEW JERSEY NATURAL GAS CO	WALL	NJ	4/2/2019 11:32	2019	UNINTENTIONAL R	NATURAL GAS	13	NO
UGI UTILITIES, INC	DENVER	PA	4/5/2019 14:27	2019	UNINTENTIONAL R	NATURAL GAS	0	NO
COLUMBIA GAS OF MASSACHUSETTS	WESTBOROUGH	MA	1/11/2018 23:15	2018	UNINTENTIONAL R	OTHER GAS	+	0 NO
COLUMBIA GAS OF MASSACHUSETTS	WESTBOROUGH	MA	9/13/2018 16:18	2018	REASONS OTHER T		0	YES
COLUMBIA GAS OF PENNSYLVANIA	CANONSBURG	PA	10/3/2018 2:18	2018	UNINTENTIONAL R	NATURAL GAS	140	NO
CONSOLIDATED EDISON CO OF NEW YORK	NEW YORK	NY	11/25/2018 18:17	2018	UNINTENTIONAL R	NATURAL GAS	6	NO
KEYSPAN ENERGY DELIVERY - NY CITY	WALTHAM	MA	1/20/2018 8:15	2018	UNINTENTIONAL R	NATURAL GAS	35	NO
KEYSPAN ENERGY DELIVERY - NY CITY	WALTHAM	MA	5/14/2018 15:53	2018	REASONS OTHER T		0	NO
NEW JERSEY NATURAL GAS CO	WALL	NJ	1/16/2018 11:04	2018	UNINTENTIONAL R	NATURAL GAS	68	NO
NIAGARA MOHAWK POWER CORP	WALTHAM	MA	1/19/2018 5:53	2018	UNINTENTIONAL R	NATURAL GAS	4863	NO
NIAGARA MOHAWK POWER CORP	SYRACUSE	NY	2/14/2018 14:15	2018	UNINTENTIONAL R	NATURAL GAS	64	NO
PUBLIC SERVICE ELECTRIC & GAS CO	NEWARK	NJ	11/24/2018 16:30	2018	UNINTENTIONAL R	NATURAL GAS	10	NO
UGI CENTRAL PENN GAS, INC	DENVER	PA	8/9/2018 11:08	2018	UNINTENTIONAL R	NATURAL GAS	15992	NO
BOSTON GAS CO	WALTHAM	MA	12/31/2017 18:20	2017	UNINTENTIONAL R	NATURAL GAS	31963	NO
KEYSPAN ENERGY DELIVERY - NY CITY	WALTHAM	MA	4/1/2017 17:17	2017	UNINTENTIONAL R	NATURAL GAS	250	NO
NIAGARA MOHAWK POWER CORP	WALTHAM	MA	3/29/2017 19:59	2017	UNINTENTIONAL R	NATURAL GAS	19000	NO

# State Pipeline Safety Division Violations



## Do You Know What Happened?

Date	Company	Violation	Penalty	State
6/12/2018	National Grid	Niagara failed to inspect each component that is	\$46,700	RI
7/1/2019	Vermont Gas Systems	The VGS Locator met with the contractor on site	\$2,250	VT
5/31/2019	Maine Natural Gas	Violation of 49 C.F.R. § 192.605(a)). Failure to p	\$50,000	ME
4/24/2019	Liberty Energy Utilities	Violation of 49 CFR § 192.1007 (c) Non-compliar	\$30,000	NH
2/20/2019	Yankee Gas Company(Eversource)	Violation of 49 CFR § 192.273(b) by failing to foll	\$50,000	CT
2/6/2019	Southern Connecticut Gas Company	Violation of 49 CFR 192.605(a) by failing to have	\$50,000	CT
3/14/2018	Columbia Gas of Massachusetts	Violation of 49 CFR 192.13(c), 192.201(a)(2)(i),	\$75,000	MA
1/31/2018	Connecticut Natural Gas Corporation	Violation of 49 CFR 192.603(b), 192.619(a)(1), 1	\$1,500,000	CT
12/30/2016	Unitil	Failure to conduct leak surveys of a service line.	\$5,000	ME
10/17/2016	National Fuel Gas Supply Corp	NFG failed to determine whether each pipeline th	\$2,056,380	PA
2017	Summit Natural Gas of Maine	Failure to expose an existing underground facility	\$150,000	ME

## Lessons Learned

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How does your company review recent industry incidents?

Is there a formal process?

LDCs, Transmission, Contractors and Consultants?

## Lessons Learned

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### Pipeline Safety Management System?

The Voluntary Information Sharing Working Group reviewed examples from Commercial Aviation SMS established under the FAA, Process Industries including Chemical and Petroleum Refining within Process Safety Management under the Occupational Safety and Health Administration (OSHA), and the Offshore Exploration and Production Industry under the Center for Offshore Safety, among others. Each of these had well-established processes for learning from incidents, including near misses, and systematically sharing the information throughout an operator's organization.

# Lessons Learned

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What Can NGA Do Beyond the PSMS Effort?

**THANK YOU!**





**THANK YOU!**

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