

Eversource's QA/QC Program



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Agenda

- ***The Business Case for Enhanced QA/QC***
- Current QA/QC Program
- Performance Reporting and Results
- Conclusion

Quality Overview

- Quality management is insuring procedures, processes, technology and people work effectively to achieve excellence in safety, compliance, reliability and productivity.
- QA/QC programs perform random, post audits and re-dig inspections highlighting where gaps or risks to the business exist.
- Objectives
 - Review Construction with respect to Federal/State codes, Construction Standards, Safety Policies and Operator Qualifications.
 - Take corrective action when required.
 - Re-direct focus on proper procedures.
 - Modify current procedures/training.
 - Promote the addition of new procedures/training.

By inspecting and taking corrective action when deficiencies are identified, the quality of operations and systems are improved.

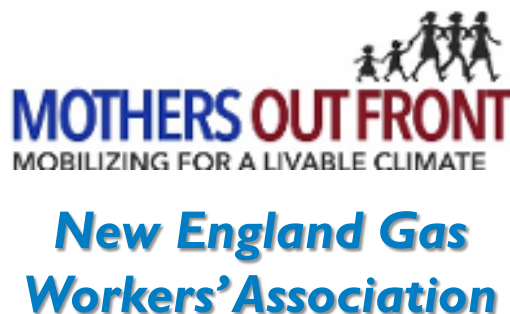
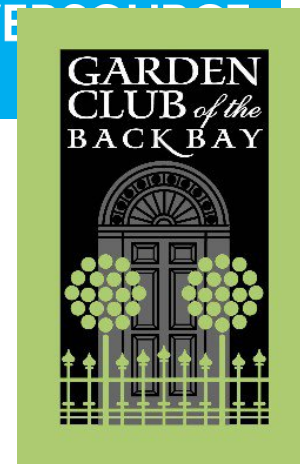
Why do we care about pipeline safety and quality?

- Public Safety / Employee Safety / Contractor Safety – the responsibility to transport a volatile product.
- Increased construction activity that must be completed according to all applicable standards.
- Recent major incidents are causing LDCs to continue to examine and improve safety and quality practices.
- Additional media, legislative, regulatory and 3rd party focus on methane emissions and the number and age of leaks.
- Company and Regulatory Position = Zero Tolerance
- Customer Position = Zero Tolerance
- Increased oversight inside and outside industry

We have the responsibility to ensure a safe and reliable gas delivery system to the public.

More Interveners with Regulations

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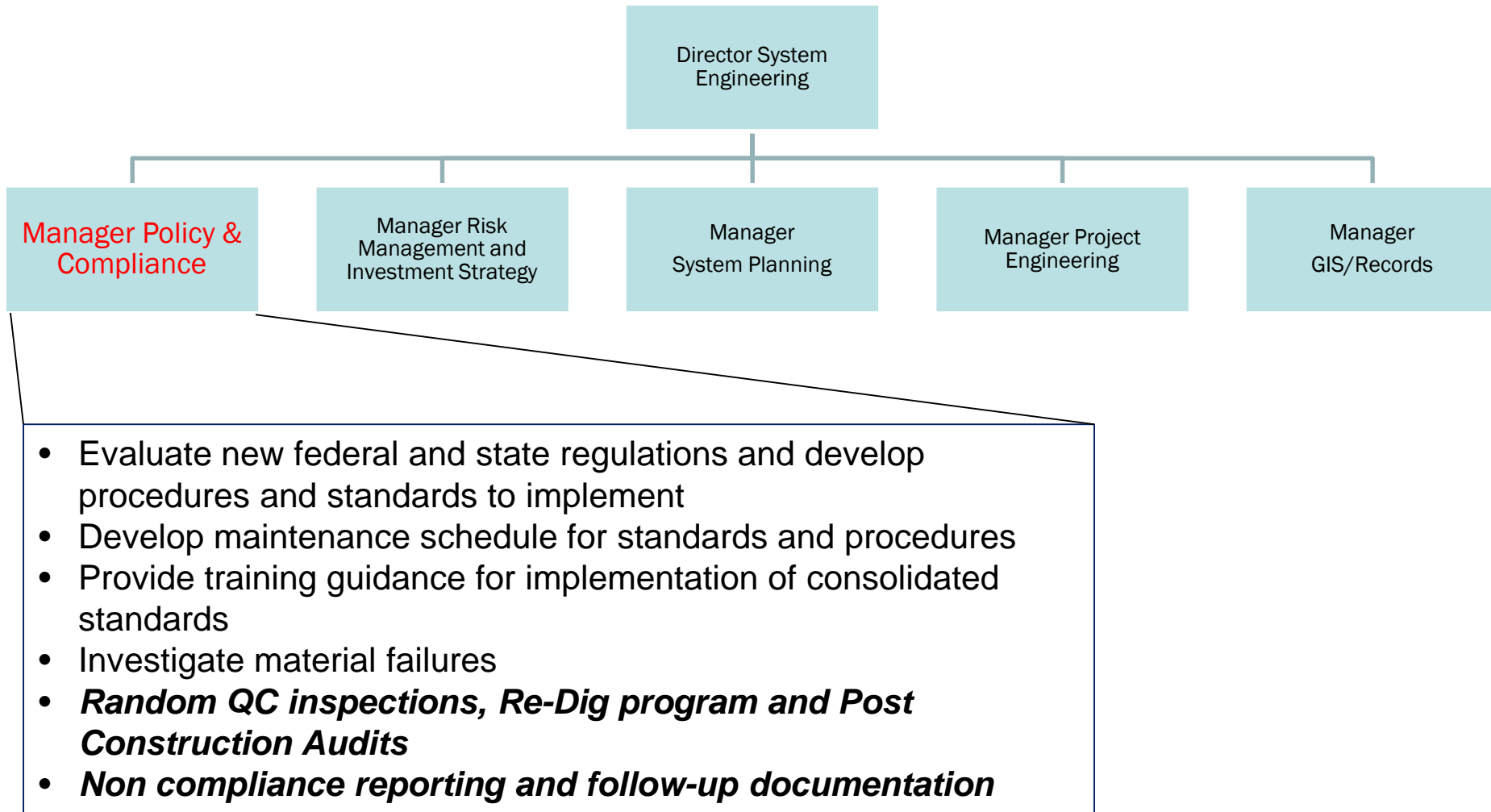


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Gas System Engineering

Key Functions



Quality Responsibility

■ Seven Levels of QA/QC

- 1st Level – Proper training and qualification of Standards, Procedures, Policy and Regulatory Codes for employees
- 2nd Level – Individual and Crew Performance – “Do it Right the First Time”
- 3rd Level - Oversight within Contractor Group (e.g., Managers, Supervisors, QA/QC Inspectors)
- 4th Level – Oversight within ES Construction Group (e.g., Managers, Construction Supervisors, Construction Inspectors)
- 5th Level – “Live” Random inspection from QA/QC group (e.g. QA/QC inspectors)
- 6th Level – “Post” Construction Re-Digs and Post Audits
- 7th Level - Personnel outside the company (e.g. system failures, customer complaints, DPU/GPSU NOPVs, municipal complaints)



Need to identify and correct issues before it gets to level 7

Who is responsible for Quality? - Everyone

Electronic Documentation Process



- Auditors utilize electronic tablets in the field to capture detailed audit information, including photos
- Each day, the audit data is uploaded and saved to a central database.
- QA/QC utilizes the central database to provide reports to management on a weekly, monthly, annual basis.
- Report on trends/issues
- 2017 QA/QC Audit Quantities
 - ✓ Random Audits (778)
 - ✓ Mark-out Audits (76)
 - ✓ Re-dig Audits (118)
 - ✓ Post Audits (409)

Eversource
Connecticut

QA Daily Audit Form

Overview	
Date	April 10, 2017
Start time	4:39 PM 41.95246/-72.89943
State	Connecticut
Region	Central
Town	Middletown
Address	42 Fountain Ave
Supervisor	See comment
Manager	See comment
Contractor	Henkels and McCoy
Foreman	Vitale
Comment	Pete Chapman/Rob Pantalone
QA/QC company	Eversource QA QC
QA/QC auditor	Martin Summers

Preparation	
Permit requirement fulfilled	Yes
Description of work	Service
Scan OQ card	Y/N
OQ records	Yes
Work order number	8 M 720301
Tailboard documented	Yes
Gas facilities marked per OM 193	Yes
Other facilities marked per OM 193	Yes

CBYD	
CBYD ticket number	Yes
Excavating in accordance with state regulations	Yes

Random Audits

- Random Audits are focused activities occurring on the job and are broken up into sub-activities to ensure observations are directed toward exactly what is being done in the field.
- Risk-based approach (higher frequency for new contractors, high NCO rate, higher risk activities).
- Observations include Safety and Quality installation related items.
- Non-compliant observations are immediately addressed in the field. This may include but is not limited to:
 - Immediate correction, Tailgate training, Suspension/Disqualification of OQ task.

All employees have the authority to shut down any job at any time if there is any question around safety or compliance.

Post Audits

During a post audit, the focus is to review services that were recently installed or replaced for compliance with company procedures and external regulations.

Check for
regulator vent
clearance.



Does EFV have
tag
accompanying it?



Post Audits



Is curb valve
readily
accessible?

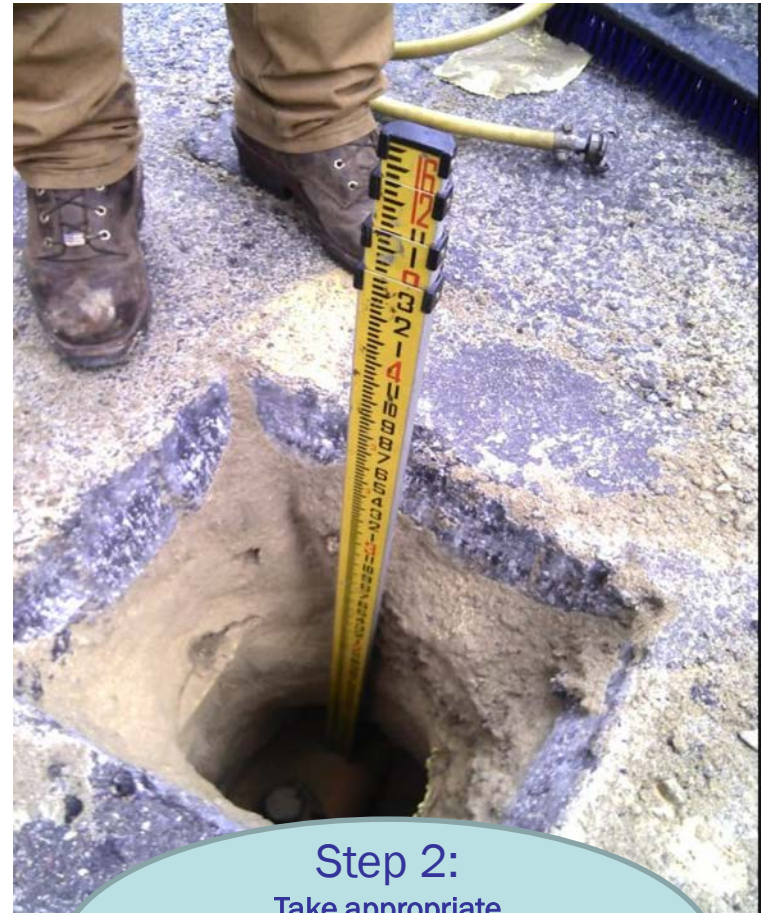


Perform soap test
to determine if
there are any
leaks.

Document ALL audit steps and NCOs!

Re-Dig Audits

Step 1:
Cut hole in the
pavement over recently
installed gas main.



Step 2:
Take appropriate
measurements, check for leaks
and verify that gas main was
installed in compliance with
regulations.



Step 3:
Backfill material is screened to
ensure backfill compliance



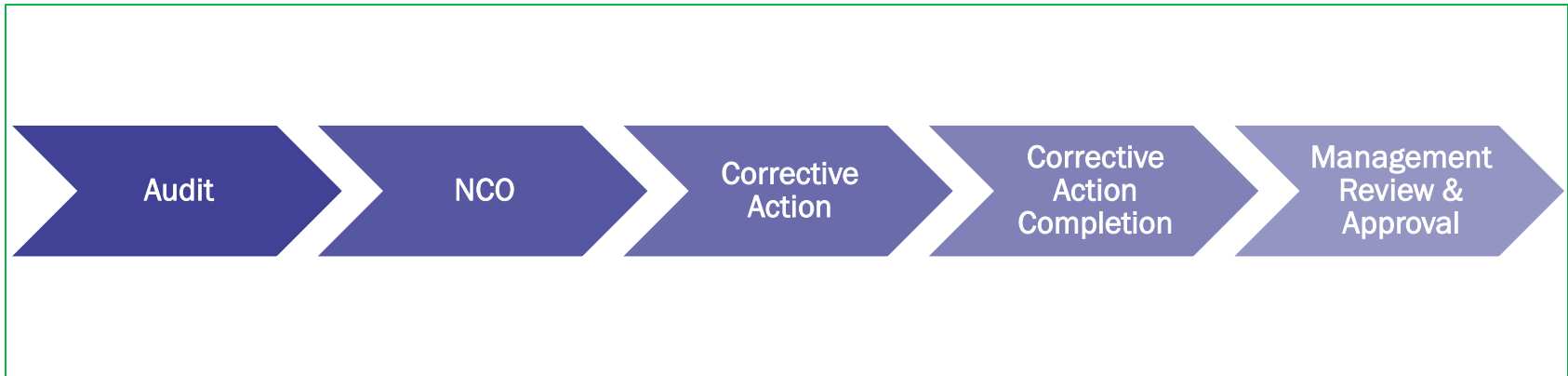
Step 4:
Backfill is tamped using
a POGO Air tool and a
DCP tool is used to
measure compaction

Re-Dig Audits



Step 5:
Compact and pave. After this
is complete, move onto next
section of main/ tee.

QA/QC Corrective Action Process



- **Non Compliant Observations**

- A Non Compliant Observation (otherwise known as an NCO) is a product and/or process that fails to meet the requirements specified by company procedures or standards and state and federal codes.

- **Corrective Action Plan**

- A Corrective Action Plan is a documented plan used to track the corrective actions which are implemented in order to eliminate the non-compliant observation and prevent re-occurrence.

Additional QA/QC Initiatives

- Bi-weekly QA/QC Conference Calls with Operations
 - Highlight trends and discuss compliance issues
- Quality Bulletins (Quarterly)
 - Identify issue(s) or trends and discuss in detail
- Quarterly meetings with PURA
 - QA/QC, Construction, Engineering
 - Review of the previous quarter - transparent discussion regarding QA/QC findings
- Rapid Assessments of AWCs
 - Review training records, calibration of equipment, recordkeeping in accordance with OM procedures

Gas Construction - Contractor Oversight

QA/QC and
Construction
Supervisor Audits

Monthly
Contractor
Meetings

Supervisor
Training

Annual
Contractor
Kickoff Meetings

Team effort – collaboration with all organizations helps drive quality forward.

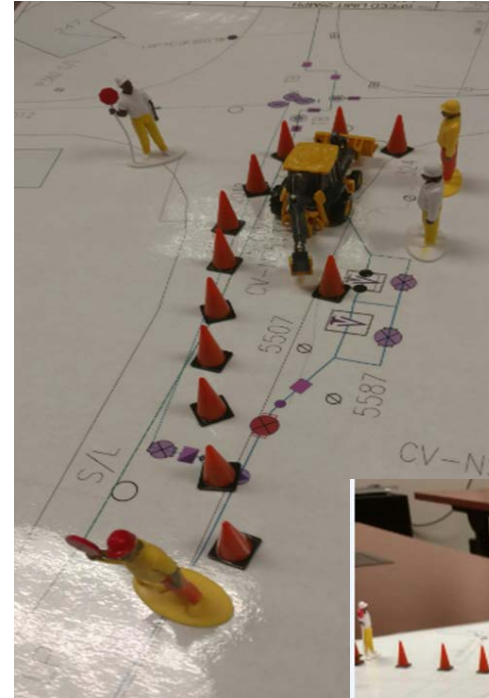
Monthly Contractor Meetings

- Eversource and Contractor employees meet on a monthly basis to discuss the following:
 - Depth of Knowledge Topic, Damage Prevention, QA/QC and other gas industry trends/ issues.
 - Contractor management and Quality Specialist employees attend.
 - Roundtable open discussion regarding issues and resolution.



Supervisor Training

- Gas Construction & QA/QC worked with Training Department to develop 2-day Supervisor Training for Construction Supervisors and QA/QC Specialists.
- The training course reviews the following topics:
 - Safety
 - Quality
 - Damage Prevention
 - Previous Violations



Annual Contractor Kickoff Meetings

- Annual Contractor Kickoff Meetings - all hands meetings held with each Contractor Company at the beginning of construction season
- Eversource Gas Construction holds these meetings to outline expectations, provide insight and discuss the following topics in detail:
 1. Construction
 2. Safety
 3. Damage Prevention
 4. **QA/QC**
 5. Sales Fulfillment

Annual Contractor Kickoff Meetings

QA-QC Scope

- Individualized performance reporting
- Previous year's highlights of areas improved
- Previous year's NCO trends
- What is expected moving forward
- Post audit NCO elimination

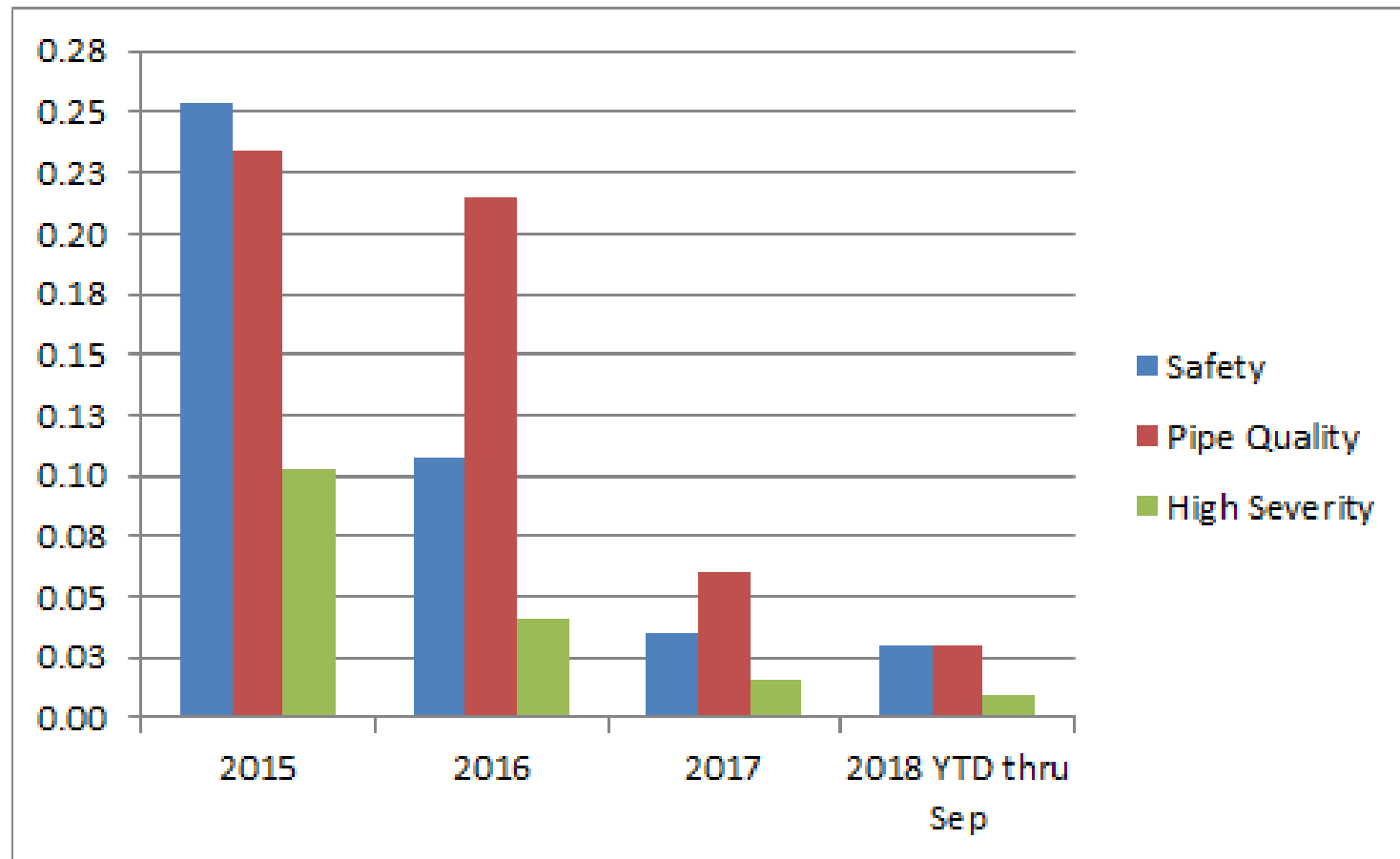


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Historical Data – NCO Rate

Non-compliant Observation Rate calculated by dividing the total number of non-compliant observations by the total audits.



Includes all QA/QC Random, Re-dig and Post Audits

QA/QC Update – NCO Detail

Date	QA/QC	Address	Town	NCO	Comments
8/10	Matt Lebel	High School Ln	Darien	PPE	Operator wasn't wearing seat belt and no glasses while operating machinery with window down
8/16	Matt Lebel	95 Lake St	Vernon	High Severity - Police/Flaggers	Job packet called for Flagger, but no Police or flagger were present on site during the construction operation
8/23	Matt Lebel	41 5th Ave	New London	Wheel Chocks	No wheel chocks on vehicle. Safety Manual 2.5.8
8/29	Matt Lebel	1404 West Main St	Waterbury	PPE	The operator was not wearing hearing protection while operating mechanical hand tools. Safety Manual Sec 3.4 & OSHA 1910.95
8/10	Martin Summers	N Wall St	Meriden	High Severity - Pipe Fusion	Improper fusion procedures followed for electrofusion coupling. Stab marks missing, and pipe not inserted to marks on the other side

QA/QC High Severity NCO Reporting

High Severity Observations		2nd Qrt 2016	2nd Qrt 2017	2nd Qrt 2018
Category	Non-Compliant Observation (NCO)			
Excavation	Shoring or 2/4/5	1	0	1
	CBYD/Dig Safe ticket and/or outside of delineation area	2	0	2
Pipe Quality	Pipe Joining	10	1	2
	Proper OQ or (lack of) Span of Control	2	0	0
	Proper Fusion Equipment	6	1	1
	Expired / non-calibrated tools and equipment	0	1	0
Safety	PPE - FR Clothing and Supplied Air	0	0	0
	Work zone protection - Flagger/Police	6	1	0
	Total	27	4	6

QA/QC High Severity Corrective Actions

2018 YTD High Severity Corrective Actions		Action Taken					
		OQ Suspended	Personnel Action	Stand down/Co ached	Repair / Replace	Install Correcte d	Open
Pipe Quality	6		1	3	1	1	3
Shoring 2/4/5 Rule	1						1
Operator Qualifications							
Excavation	1						1
PPE - FR/SAR	2		1	1			1
Total	10	0	2	4	1	1	6

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Benefits and Enhancements



- Ensure a safe system with no incidents
- Improved awareness and depth of knowledge regarding installation standards
- Transparent communication with contractors regarding continuous improvement
- Decrease in total number and cost of violations from regulators
- Increased management oversight of internal and external crews to improve safety and reduce incidents
- Eversource training now includes training to management on QA/QC inspection process to help identify and mitigate risks
- Improved relationships with state regulators

Any Questions?

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