

OQ Update

NGA Fall Operations Conference

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Discussion Topics

Key Topical Areas:

- **History of OQ Rule and Evolution of Training Programs**
- **Regulatory Drivers and Program Enhancements**
- **Written Plan Framework**
- **Hybrid OQ Model to Enable Operator Ownership**
- **Expanded Definition of a Covered Task**
- **AOC Analysis and Approach**
- **Training Requirements**
- **Performance Evaluations**
- **Phased Implementation Approach**

Incident Investigations concluded **human error** as contributing factor to failures

Resulted in NTSB to make specific recommendations regarding the training, testing, and qualification of pipeline employees.

1975-1986



Congress passed language requiring that personnel responsible for the operation and maintenance of pipelines be tested for qualification and be certified to operate and maintain those pipelines.

**Pipeline Safety Act
1992**



1987

DOT issue disused a notice inviting public comment on the need for additional regulation and a certification program for personnel who design, construct, operate and maintain gas or hazardous liquid pipelines.



1999

**CFR 192 Subpart N
Operator Qualification**

DOT's rule making process was contentious and complex but ultimately led to a consensus based final rule in August 1999. with the completion of initial qualification of pipeline personnel in 2002.



Evolution of Training Programs

Historically, gas industry training programs were designed to take a “journeyman” approach to personnel skill development. These programs worked well at that point in time when the natural gas industry growth was flat and the demand for new qualified resources was low as it took time to develop employee competency.

The **Operator Qualification Rule** also impacted our training and competency culture. The Rule attempted to standardize minimum competency requirements rather than dictate comprehensive training programs which were, presumably, in place and long standing for most LDC’s. This focus **may have unintentionally overemphasized testing and deemphasized training.**

More recently, we are seeing a reinvestment in training programs and facilities by both LDCs and the contractor community.

Given the inherent operational risk with energy delivery systems, our standards around training and qualification need to be best in class in order to perform work on these systems



Industry Trends Impacting the Workforce

Two factors have resulted in significant workforce expansion for the natural gas industry:

- 1. Over the past 10 – 15 years the natural gas industry has experienced unprecedented gas system expansion to meet demand**
- 2. Expansion of replacement programs to accelerate the replacement of leak prone pipe of the nation's aging gas system infrastructure.**

At the same time, the aging workforce is decreasing the availability of knowledgeable and skilled workers.

State Regulatory Drivers

Regulatory Drivers

- ***“Operator Ownership” of OQ Programs***
 - Emphasis on ensuring program alignment with Operator’s procedures/requirements/expectations
- ***“Competency” of Personnel:***
 - Training prerequisites for covered tasks/roles
 - Expanded use of performance evaluations in the qualification process
 - Expanded scope/definition of a covered task (e.g., does it impact the safety or integrity of the pipeline?)
 - Assessment of abnormal operating conditions (100% pass rate on AOC questions)



OQ Program Enhancements

Evolving OQ Framework to Enhance “Operational Ownership” and “Competency”

- **Written Plan Framework**
- **Hybrid Approach to OQ**
- **Integrating Training into Qualification Structure**
- **Expanded Use of Performance Evaluations**
- **AOC Assessment Methodology**



Operator Ownership

OQ Written Plan

Operational Ownership Starts with the OQ Written Plan

OQ Written Plan is evolving to a **Common OQ Framework** for NGA membership. Each operator will tailor the plan to address company and state-specific requirements.

Company-Specific Requirements for Consideration:

- Compliance with State regulatory requirements
- Training requirements and documentation of training
- New / Additional Covered Tasks
- Company-Specific Covered Tasks
- “Hybrid” tasks (integrating NGA and company specific evaluations)
- Span of Control Requirements and documenting when utilized
- Management of Change Processes
- Program Effectiveness
- Specialty contractor OQ acceptance



Operator Qualification Compliance Program *Written Plan*

 Northeast
GAS ASSOCIATION

Copyright 2000

July 30, 2003 Rev. A
October 20, 2003 Rev. B
June 9, 2005 Rev. C
May 23, 2006 Rev. D
August 1, 2007 Rev. E
September 3, 2008 Rev. F
September 9, 2010 Rev. G
October 5, 2011 Rev. H
March 15, 2013 Rev. I
May 27, 2015 Rev. J
September 20, 2016 Rev. K
May 1, 2018 Rev. L

“Hybrid” OQ Model to enable Operational Ownership

Hybrid OQ Model

The Hybrid OQ Model provides Operators with functionality that encourages and facilitates OQ *Operational Ownership* by enabling Operators to develop and integrate organization-specific qualifications that align to their procedures, processes, equipment, and materials of construction.

The Hybrid model allows Operators to leverage NGA core OQ components (i.e., general knowledge written evaluations and/or performance evaluations) to the fullest extent practical and provides flexibility for Operators to incorporate company-specific qualification requirements, as needed.

This Hybrid approach enables Operators to efficiently tailor the NGA OQ framework to a fit-for-purpose Operator-specific OQ program. The underlying learning management system capabilities that enable the Hybrid OQ model approach has been developed by Industrial Training Services, Inc. (ITS) in cooperation with NGA membership.

“Hybrid” OQ Model Illustrations



LDC Defined Task List (examples)

- Example 1: LDC Covered Task(s)
 - LDC Specified Training
 - LDC Specific Evaluation(s)
- Example 2: LDC *Hybrid* Covered Task(s)
 - LDC Specified Training
 - NGA Online Evaluation(s)
 - NGA Performance Evaluation(s)
- Example 3: LDC *Hybrid* Covered Task(s)
 - LDC Specified Training
 - Core Knowledge/Skill Training
 - Supplemental LDC Specific Training
 - NGA Online Evaluation(s)
 - LDC Performance Evaluation(s)

KEY:

BLUE = common core

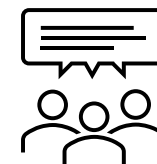
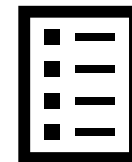
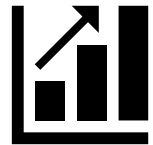
GREEN = LDC Specific

Operators to define their own Task structure and qualification requirements

NY Definition of a Covered Task

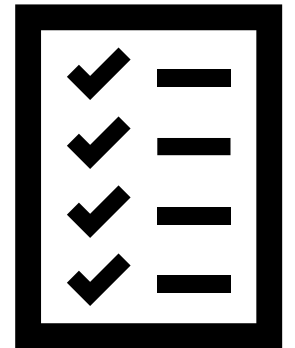
- Revised definition of a Covered Task will expand scope of OQ
 - Creating more tasks with necessary training and assessments

- Examples include:
 - Smart Pigging / In-Line Inspections
 - ECDA Techniques
 - Pumping Drips/Pipes
 - Gas Camera Operations
 - Installing Catalytic Heaters
 - Installing Heat Tracing to Prevent Freeze-ups
 - Catching Gas on the Fly
 - Relights
 - Blow Down Gas Recovery Methods
 - Etc.



AOC Assessments

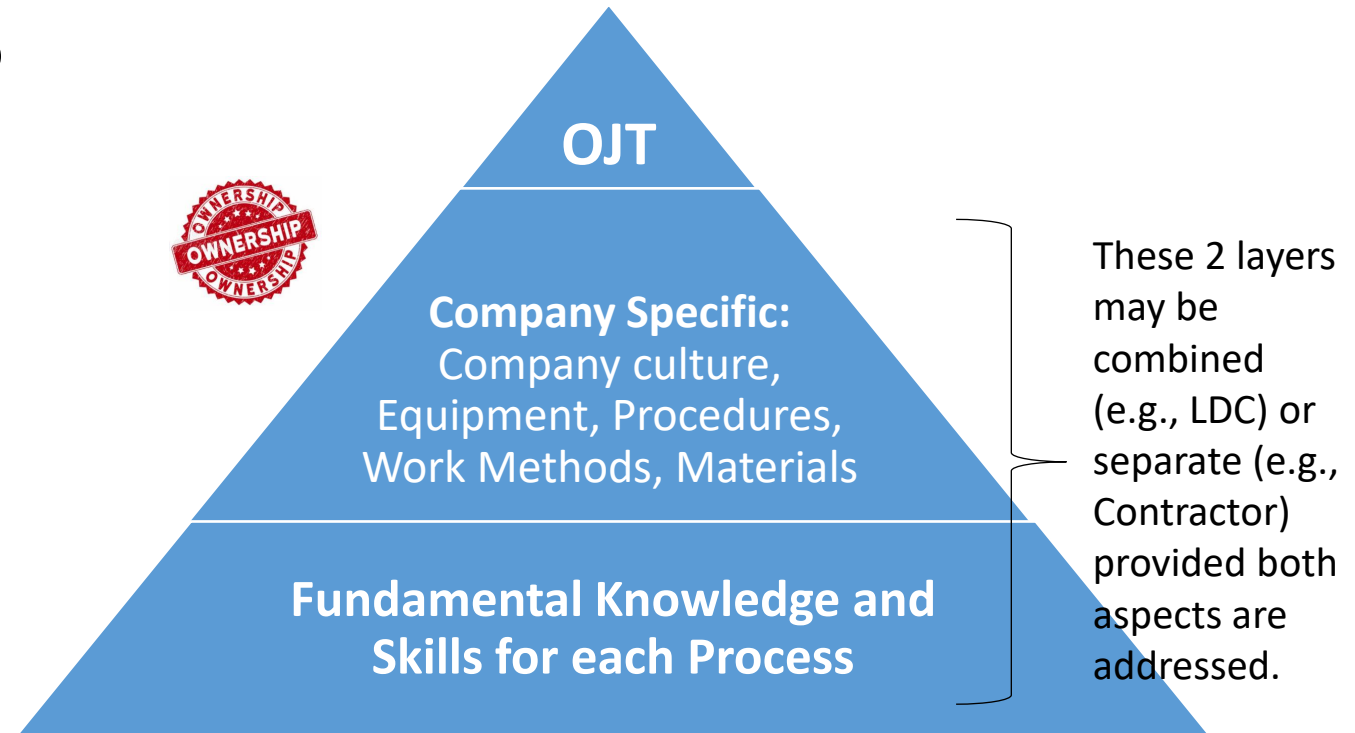
- Definition of an AOC – per 192.803 and 16 CRR-NY 255.3
- Refreshed look at Task-Specific and General Knowledge AOCs
 - Task-Specific AOCs – reviewed and updated list of AOCs; assessed primarily within PE's; assessed with WE's if necessary (at 100% pass rate).
 - General Knowledge AOCs – many general AOCs moved to task specific AOCs; remaining general AOCs to be assessed on WE (beta test pending).
 - Substandard conditions – conditions which don't meet the definition of an AOC, will remain on the knowledge assessment but will not have a 100% pass rate requirement. Examples: Weak link breaks or obstructed bore hole during HDD.



Operator Ownership

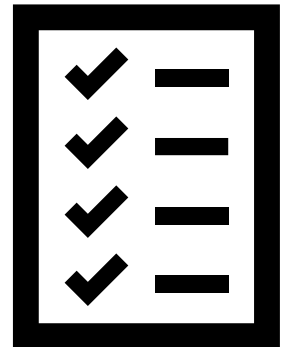
Layered Approach to Training

- ☑ Fundamentals: Basis for knowledge, skill and ability to perform a given process including recognizing and reacting to AOCs (typically instructor-led with hands-on)
- ☑ Company-specific: LDC procedures, work methods, equipment, materials of construction, culture and expectations
- ☑ Apprentice Programs, OJT



Expanded Use of Performance Evaluations to demonstrate Competency

- Evaluation Method – Vast majority of tasks will have a traditional performance evaluation.
 - Exceptions include visual assessment tasks which can be simulated with pictures and tasks that are truly knowledge based (e.g., Uprating).
- Format – More interactive evaluations including scripted questions to assess task knowledge and recognition/response to AOCs.
 - Combined KSA Assessments – some tasks will require only one assessment covering knowledge, skill, ability, and AOCs.
- Specificity – Applicable performance evaluations will be specific to equipment and materials of construction, based on fundamental process/design differences in operation or installation (e.g., tapping/stopping, mechanical fittings, etc.).



Comprehensive Development Process for Performance Evaluations

Planning

- PE Development Steering Committee

Initial Draft

- Consultant - Strawman PE developed
- SME Teams - Review and Edit

Second Draft

- Operators & Contractors - Beta Test to gain real-world feedback from students, trainers, and evaluators
- SME Teams - Incorporate feedback and address AOC questions

Finalize PE

- Operators – Review for alignment with Company requirements
- Operators – Tailor/Hybrid as needed

Example Performance Evaluation Format



INSTRUCTIONS TO PARTICIPANT:

You are installing a service at 242 Jones Street, Anytown, USA. In the process you must install a Permasert 2.0 fitting onto the pipe.

You will be asked questions during the evaluation. You may also be required to verbally explain certain steps of the task as it is being performed. Take a moment to think about the questions and then respond.

PERFORMANCE STEPS:

Ask: How do you know you have the correct fitting?

Response guidance:

Observe: Cut pipe end square

Observe: Clean pipe

Observe: Inspect pipe for defects

Observe: Chamfer pipe

Ask: After chamfering the pipe you realize you used the original Permasert chamfer tool. What would you do?

Response guidance:

Observe: Mark stab depth (chamfer tool / stab depth)

Observe: Stab pipe into fitting until it bottoms out

Observe: Stab mark within manufacturer's instructions

Ask: After stabbing the pipe into the fitting you see your stab mark does not meet the manufacturer's procedure. What would you do?

Response guidance:

Observe: Pressure / Leak test (verbal)

Ask: While performing your pressure / leak test you notice continuous bubbles in the soap. What would you do?

Response guidance:



Phased Implementation Approach

Phase #	Description	Covered Tasks	# Qualifications	# PE's	Target PE Availability Date
1	Corrosion	1, 2, 3, 4, 5, 6, 7/13, 8, 10, 11/12/17, 14, 15, 16	25	21	Q4 2022
	Written Plan				Q1 2023
2	Pressure Control & Odorization	38, 48, 59/60, 61, 62, 63, 64, 65, 66, 67, 68, 69	18	8	Q1 2023
3	Leak	18, 20, 88	10	5	Q1 2023
4	Transmission	9, 25, 26/27, 34B, 84B	8	8	Q2 2023
5	Compressor Stations & LP Air Facilities	55, 56, 57, 58, 70P, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83	17	16	Q2 2023
6	Distribution	19, 21, 22, 23/24, 28, 29/30, 31, 32/33, 34A, 36, 39, 40, 41/42, 44/54, 47, 53, 71, 84A	37	18	Q3 2023
7	Tapping/Stopping/Pipe Joining	35, 37, 49, 50/51/52	46	45	Q3 2023
8	Metering	45, 72, 85, 86/87	7	TBD	Q4 2023
9	General AOCs	70	1	1	Q4 2023
10	Newly Identified Covered Tasks	TBD	TBD	TBD	Q4 2023

Notes:

- Written Plan to be consistent with NY requirements, inclusive of phased implementation plan and dates.
- Master list of covered tasks to be included with the release of the Written Plan.
- Ongoing Written Plan updates are expected as part of the phase in approach, inclusive of detailed task sheet updates, and incorporation of continuous improvement enhancements that are realized during implementation.
- Operators to determine phased implementation dates allowing time to assess and tailor performance evaluations to align to company requirements.



Discussion

Questions?