

PIPELINE PERSONNEL QUALIFICATION

ASME B31Q Update

Historical Perspective

- **1999**: PHMSA published Operator Qualification (OQ) rule
- **2002**: NTSB labeled Operator Qualification as “unsatisfactory”
- **2003**: PHMSA issued 13 areas they considered as gaps in the rule
- **2003**: Four public meetings held to address the 13 issues
- **2003**: ASME B31Q Project Team formed to develop a technically sound, holistic, consensus standard for the qualification of pipeline personnel
- **2005**: PHMSA amended OQ rule to address training, on-the-job performance and reporting significant plan changes
- **2006**: ASME published the first edition of B31Q
- **2019**: ASME expects to publish the fifth edition of B31Q

Standards vs. Regulations

Keeping Things in Perspective

- International standards
- No jurisdictional bounds
- Regulators can adopt all or part of a standard

Underlying Principles of ASME B31Q

- Scope covers tasks that impact the safety or integrity of the pipeline
- Technically based
- Prescriptive and Performance options
 - Performance options should have higher expectations on processes
 - Limited number of simple processes for each technical issue with freedom to develop operator's own methods

Underlying Principles of ASME B31Q

- Clear – should be clear and concise
- Durable – adequate for multiple cycles
- Complete – answers all known technical issues
- Sound – technically sound foundation
- Use existing rule where practical
- Not a regulatory document

ASME B31Q Benefits

- Standardized task list
- Standardized requalification frequencies
- Identifies key qualification components
- Rationales are embedded in document
- Acknowledged by PHMSA
 - B31Q addresses the OQ non-compliance issues found to date.

Changes from 2006 to 2010

- Editorial refinement
- New technology
- Long-term degradation of distinctive physical abilities
- Jobs vs. Tasks – no change, already included
- Qualification exemptions clarified
- New construction clarified
- New tasks
 - 1631 & 1641 (Launching & Receiving Pigs)
 - 1651 & 1661 (Purging)

Changes from 2010 to 2014

- Rewrote every covered task guidance information to enhance the task and add clarity for perspective and performance language

Integrated Task List Components

Task 1291 Locate Underground Pipelines	L	G	D	Difficulty	Importance	Interval	Method	Span of Control
	X	X	X	3	3	3 YRS.	P&W/O	1:1

Task Guidance:

This task includes locating underground pipelines utilizing maps, records, and locating equipment. It also includes placing temporary markers or markings.

- 1) Identify requirements
- 2) Select method for locating
- 3) Perform test equipment check
- 4) Visually inspect locate area
- 5) Locate pipelines and place temporary marker(s)
- 6) Recognize & react to AOCs
- 7) If required, complete documentation

Enhanced Task Guidance Example

Task 0771 Joining of Plastic Pipe: Sidewall Heat Fusion

Current Criteria	Proposed Criteria
Identify requirements	Select task procedure(s) and appropriate equipment
Perform joining equipment check	Perform joining equipment check <ul style="list-style-type: none">❖ Select proper sized heat adapter that is free of defects and contamination❖ Proper iron selection❖ Ensure fusion machine is in good working condition

Enhanced Task Guidance Example

Task 0771 Joining of Plastic Pipe: Sidewall Heat Fusion

Current Criteria	Proposed Criteria
Select fitting and clean pipe fitting	Select fitting and prepare pipe surface <ul style="list-style-type: none">❖ Select the correct fitting and prepare pipe and fitting for fusion❖ Ensure pipe and pipe fittings free from contamination
Set-up heat fusion equipment	Set-up heat fusion equipment <ul style="list-style-type: none">❖ Place fusion machine on pipe❖ Place bolster plate under pipe❖ Properly secure the machine to the pipe❖ Install fitting correctly into the machine

Enhanced Task Guidance Example

Task 0771 Joining of Plastic Pipe: Sidewall Heat Fusion

Current Criteria	Proposed Criteria
Heat fitting and pipe mating surfaces	Heat fitting and pipe mating surfaces <ul style="list-style-type: none">❖ Ensure heating iron is at proper temperature❖ Apply heating iron to fitting and pipe❖ Maintain correct pressure until an acceptable complete melt bead can be seen all the way around concave adapter❖ Establish melt pattern❖ Visually inspect for the correct melt pattern❖ Verify that melt pattern is within tolerances<ul style="list-style-type: none">❖ Bead pattern size❖ Uniformity

Enhanced Task Guidance Example

Task 0771 Joining of Plastic Pipe: Sidewall Heat Fusion

Current Criteria	Proposed Criteria
Join fitting and pipe	Join fitting and pipe <ul style="list-style-type: none">❖ Remove heating iron❖ Join the fitting and the pipe together❖ Apply and maintain proper pressure until the correct beads is formed and the joint has cooled
Visually inspect	Visually inspect the joint for <ul style="list-style-type: none">❖ Uniformity❖ Proper alignment❖ Acceptable bead appearance <p>Make appropriate notifications if fusion is not acceptable</p>

Enhanced Task Guidance Example

Task 0771 Joining of Plastic Pipe: Sidewall Heat Fusion

Current Criteria	Proposed Criteria
Recognize and react to AOCs	
If required, complete documentation	Document, as required

Changes from 2014 to 2016

- New non-mandatory appendix for implementing the Standard and Task List, and renumbered the appendices
- Enhanced definition of “documentation” for task standards
- Enhancing the qualification standards for diving tasks (enhanced 11, deleted 9 that mirrored the above ground tasks)
- Combined 2 mobile gas leakage survey tasks into 1
- New tasks
 - Dehydrators (2 tasks – Glycol and Mole Sieve)
 - Separators
 - Heaters
 - Internal Sealing: Cast/Ductile Iron – Anaerobic
 - Relocation of Existing Pipe
 - Inspect Water Crossings

Nonmandatory Appendix H

Implementing B31Q

- Background
- Implementation of Nonmandatory Appendix A, the B31Q Task List
 - Process Flowcharts
 - Example 1-year Plan
- Implementation of the B31Q Standard
 - List of Standards for Comparison to Plan

Implementation of the B31Q Task List

- Review the B31Q Task List
- Review Company's Current Task List
- Combine Task Lists to Create a B31Q Compatible Task List
- Evaluate and Develop Training Material
- Reconcile Qualification Records
- Manage Program Change
- Record and Document Qualifications

OQ Program Comparison to B31Q Standard

OQ PROGRAM COMPARISON TO B31Q STANDARD

Section #	Standard	Comments	Determination
4.2.1(a)	Identify the operating or business unit(s) of the entity to which the qualification program applies	<i>The Corporation is identified, but the individual operating entities are not</i>	<i>May need change</i>
4.2.1(b)	Describe the purpose and scope for the program	<i>Our Program has a description of the purpose and scope</i>	<i>Match</i>
4.2.1(c)	Contains other information required within this Standard or that is necessary to clarify the purpose and scope of the program	<i>Our Program doesn't have anything additional, but I don't know that there is anything additional to document</i>	<i>No change</i>
4.2.2	Definitions – key terms and phrases included within the qualification program shall be defined, terms and phrases do not need to be defined if its use or meaning is consistent with the definitions found in Section 2	<i>We have definitions similar to the Standard, but need to keep them there to influence the understanding of our employees</i>	<i>No change</i>
4.2.2(a)	Definitions include those unique to the qualification program	<i>There aren't many differences between our definitions and the Standard's or Industry's</i>	<i>No change</i>
4.2.2(b)	Definitions include those that are different from what is found in section 2 of this Standard	<i>We may need to consider whether we need to change the definition or our thinking on the "pipeline facility" concept</i>	<i>May need change</i>
4.2.3	The program shall describe the process used to identify covered tasks	<i>We list who determines Covered Tasks, but not the method by which they were developed</i>	<i>Supplemental Program info may need to be documented</i>
4.2.3	Include or reference the list of the identified covered tasks that are being utilized in the program	<i>The Task List is referenced</i>	<i>Match</i>

Changes from 2016 to 2018

- Replacement of Appendix B (Task Summary) with an Index of tasks by topic with the revision status date listed for each task
- Editorial Changes
 - Added Definition for “interval”
 - Standardization of Task Language
 - Action verb, then object
 - Reference to other tasks
 - Changed the interval on plastic pipe fusion to match the language in the current regulation
 - Updated example of Evaluation Criteria in Appendix D
- Task Changes
 - Ensured the welding of fittings is included in Task 0801
 - Clarified scope of tasks where portions of the work are covered by other tasks (tasks impacted: 0081, 0721, 0731, 0821, 1081, 1091)
 - Removed unnecessary step from Task 0091 qualification standards
- New tasks
 - Electrical Inspection of Pipe Coating (Jeeping)

New Appendix B Task List

NONMANDATORY APPENDIX B COVERED TASKS AND STATUS HISTORY BY CATEGORIES

Task Number	Task Title	Latest Status	Edition
Breakout Tanks			
0651	Perform Visual Inspection of Breakout Tanks	Revised	2014
0661	Perform Inspection of Breakout Tanks	Revised	2014
Cast Iron / Ductile Iron			
0831	Install and Maintain Mechanical Leak Clamp(s) on Cast Iron Caulked Bell and Spigot Joints	Revised	2014
0841	Seal Cast Iron Joints Using Encapsulation	Revised	2014
0851	Perform Internal Sealing on Cast and Ductile Iron	Revised	2014
0855	Perform Internal Anaerobic Sealing of Cast and Ductile Iron	Added	2016
1111	Tap Cast and Ductile Iron Pipe and Low Pressure Steel Pipe	Revised	2014
Compressors			
0441	Startup and Shutdown Compressor Locally	Revised	2014
0461	Perform Preventive Maintenance on a Compressor	Revised	2014
0471	Inspect, Test, and Maintain Reciprocating Compressor	Revised	2014
0481	Inspect, Test, and Maintain Centrifugal Compressor	Revised	2014
0491	Inspect, Test, and Maintain Rotary Compressor	Revised	2014
Control Center Operations			
1371	Operate Gas Pipeline From a System Control Center	Revised	2014
1381	Operate Gas Pipeline From a Local Facility Using Remote-Control Operations	Revised	2014

Changes after Fifth Edition

- New tasks being considered
 - Strain Gauge
 - Pressurized Break-Out Tanks
 - Above Ground Storage Tanks
 - Underground Storage (likely 2020 edition)

Changes after Fifth Edition

- New tasks being considered, but will not be added:
 - Coolers
 - Internal Sealing: Installation of Mechanical Rubber Seals
 - Use of ROV or Drone for Patrols
 - One-Call Activities
 - Mapping/Surveying
 - Inspection
 - Excess Flow Valves

Changes after Fifth Edition

- Other changes being considered
 - Review SOC max of 5 – should it be lower?
 - Review guidance of how SOC is employed
 - Include evaluator training in evaluator requirements
 - Review guidance for Measure Program’s Effectiveness
 - Review the use of the terms “pipe,” “pipeline components,” and “pipeline” and edit as appropriate to make the meaning clear and consistent
 - Add language in 5.5 or elsewhere to explain what it means when other tasks are referenced within the task guidance of a task.

Ways to Participate

- Comments to secretary
- Work through members
- Attend meetings
- Upcoming meetings
 - September 19-20, 2018, Cincinnati, OH
 - February, 2019, San Diego, CA (or Reno, NV)
 - June, 2019, Louisville, KY (or Portland, ME)
 - September 18-19, 2019, Philadelphia, PA (or Boston, MA)
- Web site: www.asme.org
 - Search on B31Q Committee

Summary

- Value of current standard
- More work to be done
- Proposed changes to future revisions
- Your participation is welcome

Questions

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