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Hazardous Liquid Pipeline Operator Qualification (OQ)

1 Scope

API [RP 1161](#) establishes a framework for developing and maintaining an operator qualification (OQ) program for hazardous liquid pipeline personnel. This recommended practice is applicable for all hazardous liquid pipelines, both onshore and offshore, subject to 49 *Code of Federal Regulations (CFR)* Part 195, Subpart G. Operators may choose to use all or part of this document as applicable to their operations.

For the purposes of this document, the word “pipeline” is used interchangeably with “pipeline facility” or “pipeline system,” as defined in 49 *CFR* Part 195. This document pertains to all employees, contractors, subcontractors, or other entities who perform covered tasks on behalf of the operator.

2 Normative References

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

[API 510, Pressure Vessel Inspection Code: In-service Inspection, Rating, Repair, and Alteration, 10th Edition, May 2014, Including Addendum 1 \(May 2017\)](#)
~~API 510, Pressure Vessel Inspection Code: In-service Inspection, Rating, Repair, and Alteration, Ninth Edition, June 2006~~

API Standard 653, *Tank Inspection, Repair, Alteration, and Reconstruction*, Third Edition, December 2001, including Addendum 1 (September 2003), Addendum 2 (November 2005), Addendum 3 (February 2008), and Errata (April 2008)

API Standard 1104, *Welding of Pipelines and Related Facilities*, 21st Edition, September 2013, including Errata 1 through 5 (April 2014 through September 2018), Addendum 1 (July 2014), and Addendum 2 (May 2016)

API Standard 2350, *Overfill Prevention for Storage Tanks in Petroleum Facilities*, Fifth Edition, September 2020, including Errata 1 (April 2021)

[API Standard 2510, Design and Construction of LPG Installations, 9th Edition, August 2020](#)

[APWA Uniform Color Code](#)

[SSPC/NACE/AMPP Corrosion Protection Standards Programs](#)

ASME Boiler and Pressure Vessel Code ¹, Section IX: *Qualification Standard for Welding and Brazing Procedures, Welders, Brazers, and Welding and Brazing Operators*, 2007 Edition, July 2007

[ACCP/ASNT 9712 Qualification and Certification of NDT personnel](#)

ASNT SNT-TC-1A ², *Personnel Qualification and Certification in Nondestructive Testing*

[U.S. DOT Title 49, Code of Federal Regulations Part 195 ³, Transportation of Hazardous Liquids by Pipeline](#)

NOTE Dated editions referenced above are incorporated by reference (IBR) into 49 *CFR* § 195.3 and are current as of the publication date of this document.

¹ ASME International, 2 Park Avenue, New York, NY 10016, www.asme.org.

² American Society for Nondestructive Testing, 1201 Dublin Road, Suite G04, Columbus, OH 43215, www.asnt.org.

³ U.S. Department of Transportation, Pipeline and Hazardous Materials Safety Administration, 1200 New Jersey Avenue, SE, Washington, DC 20590, www.phmsa.dot.gov.

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3 Terms, Definitions, Acronyms, and Abbreviations

3.1 Terms and Definitions

For the purposes of this document, the following terms and definitions apply.

NOTE When identical terms are defined within the task standard and in this section, the task standard definitions apply.

3.1.1

abnormal operating condition

AOC

A condition identified by the operator that may indicate a malfunction of a component or deviation from normal operations that may:

- indicate a condition exceeding design limits, or
- result in a hazard(s) to persons, property, or the environment.

NOTE As defined in 49 *CFR* § 195.503.

3.1.2

accident

A failure in a pipeline system in which there is a release of the hazardous liquid or carbon dioxide transported, resulting in any of the following:

- a) Explosion or fire not intentionally set by the operator.
- b) Release of 5 gallons (19 liters) or more of hazardous liquid or carbon dioxide, except that no report is required for a release of less than 5 barrels (0.8 m³) resulting from a pipeline maintenance activity if the release is:
 - 1) not otherwise reportable under this section;
 - 2) not one described in 49 *CFR* § 195.52(a)(4);
 - 3) confined to company property or pipeline right-of-way;
 - 4) cleaned up promptly.
- c) Death of any person.
- d) Personal injury necessitating hospitalization.
- e) Estimated property damage, including cost of cleanup and recovery, value of lost product, and damage to the property of the operator or others, or both, exceeding \$50,000.

NOTE As defined in 49 *CFR* § 195.50.

3.1.3

covered task

An activity, identified by the operator, that:

- a) is performed on a pipeline facility;
- b) is an operations or maintenance task;
- c) is performed as a requirement of 49 *CFR* Part 195; and

d) affects the operation or integrity of the pipeline.

NOTE As defined in 49 *CFR* § 195.501.

3.1.4 disqualification

The act of removing an individual's qualification to perform any or all covered tasks until completing the requirements for requalification.

3.1.5 evaluation

A process, established and documented by the operator, to determine an individual's ability to perform a covered task by any of the following:

- a) written examination;
- b) oral examination;
- c) work performance history review (WPHR);
- d) observation during:
 - 1) performance on the job,
 - 2) on-the-job training (OJT), or
 - 3) simulations;
- e) other forms of assessment.

NOTE As defined in 49 *CFR* § 195.503.

3.1.6 IR drop

The voltage or potential difference as a result of current flow. From Ohm's Law, $V = IR$. When evaluating structure-to-soil measurements, IR drop is the voltage drop other than the drop across the structure-to-soil boundary.

3.1.7 new construction

The act of building a pipeline facility or expanding an existing pipeline facility (as in looping a pipeline segment, which may also be done to meet increased load requirements or to enhance reliability of the system) in order to provide new service to a customer(s) or in order to meet increased demand.

NOTE As defined in the Pipeline and Hazardous Materials Safety Administration (PHMSA) Pipeline Glossary.

3.1.8 operator qualification program OQ program

A written qualification program that meets or exceeds the requirements of 49 *CFR* § 195.505.

3.1.9

qualification

The result of a process determined by the operator that includes successful completion of task-specific evaluation(s) with the associated abnormal operating conditions (AOCs), documentation, and meets the requirements of the OQ program.

**3.1.10
qualified**

An individual who has been evaluated and can:

- a) perform assigned covered tasks;
- b) recognize and react to AOCs associated with those tasks.

**3.1.11
remote evaluation**

An evaluation that is conducted and controlled remotely by an evaluator who is not physically present.

**3.1.12
repair**

Repair is the act of returning a damaged or defective item to restore its serviceability and safe operation. Pipeline repairs address defects or anomalies that reduce the strength of a pipe in a manner that restores that strength. Repairs can include replacing sections of pipeline.

**3.1.13
risk and difficulty analysis**

A tool to assist in determining a requalification interval or span-of-control ratio.

**3.1.14
span of control**

The ratio of qualified to unqualified individual(s) where the unqualified individual(s) is directed and observed by a qualified individual while performing a covered task.

**3.1.15
suspension**

The temporary act of removing an individual's qualification to perform any or all covered tasks.

**3.1.16
training**

The learning, development, and improvement of new or existing knowledge and skills, not to include the evaluation or qualification of those knowledge and skills.

3.2 Acronyms and Abbreviations

AC	alternating current
AO	abnormal operation
AOC	abnormal operating condition
BPVC	<i>Boiler and Pressure Vessel Code</i>
CFR	<i>Code of Federal Regulations</i>
CP	cathodic protection
CPM	computational pipeline monitoring

DC	direct current
DCF	density correction factor
HMI	human machine interface
HVL	highly volatile liquid
IBR	incorporated by reference
I/O	input/output
KSA	knowledge, skills, and abilities
mil	1/1000 of an inch
MOP	maximum operating pressure
MOV	motor-operated valve
NDT	nondestructive testing
OJT	on-the-job training
OPD	overflow protective device
OQ	operator qualification
PCR	polarization cell replacement
PHMSA	Pipeline and Hazardous Materials Safety Administration
PIG	pipeline inspection gauge
PLC	programmable logic controller
P/V	pressure/vacuum
RMU	remote monitoring unit
SCADA	supervisory control and data acquisition
SSD	solid-state decoupling
VOM	volt-ohm meter
WPHR	work performance history review

4 Developing an Operator Qualification Program

4.1 Roles and Responsibilities

4.1.1 Operators should identify roles for the administration, management, and execution of the OQ program.

4.1.2 Operators should establish and assign responsibilities to each applicable OQ program role. The responsibilities should be communicated to affected individuals. Examples of responsibilities include the following:

- managing and overseeing the OQ program;
- identifying covered tasks;

- assigning covered tasks to individuals;
- training, as appropriate;
- conducting and administering evaluations, per the operator's OQ program;
- verifying individuals' qualifications;
- managing contractors and other entities;
- documentation and recordkeeping.

4.2 Communication

The operator's OQ program should include mechanisms to facilitate effective communication when a communication barrier exists. Examples may include the following:

- interpreter for alternative languages or individual(s) with hearing loss;
- training materials or task steps in applicable formats;
- qualification methods in applicable formats.

4.3 Program Improvement

4.3.1 General

Operators should develop processes for periodic review and audit of their OQ program. Operators should incorporate program improvements based on the findings. The operator has the flexibility to structure the review and audit as formally or informally as deemed necessary but should document the results and identify and communicate any modifications.

4.3.2 Operator Qualification Program Review

The purpose of periodically reviewing the OQ program is to verify that it meets current regulatory and operator requirements.

NOTE Refer to [Annex E](#) for further information.

4.3.3 Internal Audit

The purpose of an internal audit is to verify that the OQ program is being executed as written.

NOTE Refer to [Annex E](#) for further information.

4.3.4 Participation in an Industry Group

The operator may consider participating in an industry OQ group. These groups develop and update OQ guidance materials, share best practices, and interact with regulatory agencies.

5 Identification of Covered Tasks

5.1 General

The four criteria listed below are referred to hereafter as the Four-part Test.

The program shall identify and document covered tasks. A covered task is an activity, identified by the operator, that:

- a) is performed on a pipeline facility;
- b) is an operations or maintenance task;
- c) is performed as a requirement of 49 *CFR* Part 195; **and**
- d) affects the operation or integrity of the pipeline.

~~NOTE—Pipeline repair activities not explicitly identified in 49 *CFR* Part 195, while performed in accordance with the requirements of 49 *CFR* § 195.422(a), may be considered by the operator as meeting the third component of the Four-part Test.~~

5.2 Identifying Covered Tasks

5.2.15.1.1 General

In developing the covered task list, operators are required by 49 CFR Part 195 to include tasks meeting all elements of the Four-part Test that are performed for the operator, regardless of who performs them. This includes employees, contractors, subcontractors, or other entities, such as other pipeline operators. Operators can include additional tasks that do not meet all elements of the Four-part Test.

The operator has flexibility to determine how to accomplish covered task identification. The operator should document the method and justification for selecting covered tasks.

5.2.25.1.2 Adoption of an Industry-developed Covered Task List

Industry and technical associations, OQ vendors, and others have developed covered task lists. When adopting such a list, the operator should compare the covered task list to its operations and maintenance activities. The operator has the flexibility to combine or separate covered tasks as applicable to its operations. If gaps are identified, the operator should apply the Four-part Test to add or remove covered tasks as applicable.

NOTE [Annex A](#) presents covered tasks identified by API's Operator Qualification Workgroup.

NOTE [Annex C](#) presents a record of covered task development. This includes tasks previously published and subsequently removed, and tasks considered for publication but rejected.

5.2.35.1.3 Analysis of Operations and Maintenance Activities

An analysis of operations and maintenance activities should be used to determine which activities will be included in an operator's covered task list. Subject matter experts, regulatory compliance personnel, and others may be enlisted to assist in the identification and analysis. Examples of items to be considered can include the following:

- 49 CFR Part 195;
- state or local requirements;
- company requirements;
- operations, maintenance, and safety procedures;
- applicable PHMSA Advisory Bulletins.

It may be helpful to record each applicable activity on a master list and document applicability to each element of the Four-part Test, adding justification notes as needed. This method of documentation produces a list of covered and noncovered tasks and may assist in regulatory and internal reviews.

5.21.4 Analysis of Tasks Performed as a Requirement of Four Part Test

Tasks should be identified through a prescriptive analysis and performance-based analysis of 49 CFR 195 (Change to four part test?) using the Four Part Test.

Prescriptive analysis considers work that is specifically mentioned in the regulation. For example, there is a code reference for valve maintenance requiring operators to perform valve maintenance.

49 CFR 195.420 (Valve Maintenance) requires operators to perform valve maintenance.

Performance-based analysis requires additional consideration of work performed to meet the regulatory requirements but is not specifically called out referenced in regulatory language. For example, 49 CFR Part 195.422 (Pipeline Repair), may require the performance of many tasks that are not specifically called out referenced but are integral to meeting the requirements of the regulation. API RP 1161 has incorporated specific numerous pipeline repair techniques as covered tasks (refer to the 40 series tasks listed in Annex A) because each repair technique requires unique distinct knowledge and skills.

Performance Based Analysis

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~~Tasks Performed on a Pipeline Facility. The phrase "performed on a pipeline facility" means an activity that is performed by an individual whose performance directly impacts the pipeline facility. An individual who works on a pipeline component that is physically connected to the pipeline system is performing work "on a pipeline facility" and may be subject to the final rules, regardless of whether or not product is flowing through the pipeline. However, a person who repairs a pipeline system or appurtenance, that has been removed from the system, would not be performing work on the pipeline, and therefore would not be performing a covered task.~~

Prescriptive Analysis

~~Operations or Maintenance Tasks. The Federal pipeline safety law requires that all individuals who operate and maintain pipeline facilities be qualified to operate and maintain those facilities.~~

5.35.2 Interpreting the Four-part Test

5.3.15.2.1 Part 1—Is the Task Performed on a Pipeline Facility?

Operators should review the regulatory definitions of pipeline and pipeline facility. Components, piping, and equipment that are physically connected to the pipeline or pipeline system (i.e. by wires, tubing, pipe, or the pipeline right-of-way) are considered part of the pipeline facility. A component, piping, or equipment disconnected and physically removed from the pipeline or pipeline system is not considered part of the pipeline facility.

5.3.25.2.2 Part 2—Is the Task an Operations or Maintenance Task?

Operations tasks are those activities associated with monitoring and controlling the transportation of hazardous materials within a pipeline system. Maintenance tasks are those activities performed to maintain, ~~resterere~~repair, replace, or relocate active pipeline facilities.

5.3.35.2.3 Part 3—Is the Task Performed as a Requirement of 49 CFR Part 195?

The operator should review all subparts of 49 CFR Part 195, including IBR documents, and state and local requirements, ~~to ensure completeness of all tasks.~~ Operations and maintenance tasks are not limited to those tasks addressed in 49 CFR Part 195, Subpart F. [Consideration should be given to prescriptive and performance-based tasks.](#)

5.3.45.2.4 Part 4—Does the Task Affect the Operation or Integrity of the Pipeline?

Tasks that, if performed incorrectly, could adversely affect the operations or integrity of the pipeline during or after the performance of the task would meet the Part 4 requirement of the Four-part Test.

5.45.3 Risk and Difficulty Analysis

[When](#) ~~if~~ determining the span-of-control ratio and reevaluation interval for each covered task, operators should analyze the risk and difficulty associated with performing the covered task. Operators may use a tool similar to that found in [Annex H](#).

6 Ensuring, ~~Throug Evaluation, That~~ Individuals Performing Covered Tasks Are Qualified

6.1 General

Operators shall have a documented process for the evaluation of individuals to be qualified to perform covered tasks.

The terms qualification and evaluation are frequently used interchangeably throughout the industry; however, they are two distinct terms (see definitions).

6.2 Establishing Criteria for Qualification Through Evaluation

6.2.1 Qualification Process

6.2.1.1 Covered Task

The operator should review the covered tasks to determine the appropriate evaluation method(s) and other qualification requirements. Items to be considered should include the following:

- the difficulty of performing the covered task;
- the importance or risk;
- the frequency.

Additionally, the operator should consider the level of knowledge and/or skill needed to perform the covered task and any other factors as determined by the operator.

6.2.1.2 Individuals or Groups of Individuals

The operator has flexibility to determine the evaluation methods and other qualification requirements for all individuals who perform covered tasks. In certain circumstances, an operator may establish provisions to accept qualifications from other entities' internal OQ programs.

6.2.2 Evaluation Methods

6.2.2.1 General

As stated in 49 CFR § 195.503, eEvaluation is a process, established and documented by the operator, to determine an individual's ability to perform a covered task.

Neither WPHR nor OJT can be used as the sole evaluation method for determining qualification. If either of these methods are used, they shall be used in conjunction with other allowable methods of evaluation.

Individual evaluations should be documented.

6.2.2.2 Written or Oral Examination

Written and oral examinations should consist of predetermined questions and should contain enough questions to adequately measure the knowledge required to perform a covered task. Consideration should be made for the role of a proctor and/or evaluator to ensure that examinations are administered in a secure and controlled setting.

6.2.2.3 Work Performance History Review

WPHR is a structured, documented review of an individual's task-related performance records. If an operator chooses to use WPHR as an evaluation method, the following steps should be completed and documented:

- a search of existing records for documentation of an individual's past satisfactory performance of a covered task(s);
- verification that the individual's work performance history contains no indications of substandard work or involvement in an accident caused by an error in performing a covered task.

6.2.2.4 Observation During Performance on the Job

Visual observation during performance on the job includes the evaluation of specific steps required to be performed when completing the task. Evaluators performing observations shall possess the knowledge required to ascertain an individual's ability to perform covered tasks and to substantiate an individual's ability to recognize and react appropriately to AOCs that might occur while performing these activities. Observation during performance on the job cannot be used as a sole evaluation method and shall be used in conjunction with another allowable evaluation method.

6.2.2.5 Observation During On-the-job Training

Observation during the OJT process is a structured performance evaluation conducted at the conclusion of training on a covered task or while an individual is performing the actual work. Observation during OJT should require an evaluator to observe all specific steps required to be performed when completing the task.

6.2.2.6 Observation During Simulation

Observation during simulation can be used as an evaluation method. Simulation should include a realistic performance of the covered task under controlled conditions. Simulation may include the following:

- ~~use of simulators, such as those scenario of a closed pipeline system, such as those~~ used in control centers;
- ~~off the right-of-way using a mock-up scenarios on a pipeline facility or in a training facility to perform various covered tasks;~~
- ~~demonstrating demonstration~~ and communication of the performance of the covered task steps without physically affecting in-service equipment;
- ~~During simulation identification of any specific safety procedures and Personal Protective Equipment (PPE) that may be required for the task;~~
- ~~AOC recognition and appropriate reactions.~~

~~all requirements (AOC, safety, etc.) shall be met.~~

When performing an evaluation that simulates the covered task, the evaluation method shall, as closely as possible, mimic the actual task steps. ~~During simulation all requirements (AOC, safety, etc.) shall be met.~~

6.2.2.7 Other Forms of Assessment

Other forms of assessment may include the following:

- a current professional certification or license through an industry-recognized association with a formal evaluation process;
- specialized equipment manufacturer or vendor certification, ~~which including includes~~ a formal evaluation process.

6.2.3 Evaluation Material

Operators have the option of developing evaluation material or using material developed by third parties.

If developing evaluation material, operators should base evaluations on operations and maintenance procedures or other industry recognized documents. If using material developed by third parties, operators should ~~align review~~ the content ~~to ensure with the it meets the requirements of the~~ operator's ~~practices policies and procedures.~~

Operators ~~may should~~ periodically review and update evaluation material to ensure it meets current requirements.

6.2.4 Evaluation Process

6.2.4.1 General

~~The e~~An evaluation process ~~is shall be~~ established and documented by the operator to determine an individual's ability to perform covered tasks and recognize and react to AOCs. The evaluation establishes that an individual is qualified to perform covered tasks.

6.2.4.2 Roles and Responsibilities

Operators should define evaluation process roles and responsibilities. Examples of ~~these those~~ roles applicable to the evaluation process are ~~as follows~~:

- a) an *evaluator* conducts performance evaluations;

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- b) an *individual* is evaluated for initial qualification or requalification;
- c) a *proctor* administers written, oral, or online examinations.

6.2.4.36.2.4.2.1 Evaluator Selection

Evaluators determine if an individual meets task requirements during a performance evaluation. Operators should develop evaluator acceptance criteria. At a minimum, evaluators operators should ensure evaluators:

- a) understand safe work practices;
- b) possess a high degree of integrity;
- c) possess effective communication skills;
- d) be are trained to perform and document OQ performance evaluations;
- e) possess the knowledge, skill, and ability of the covered task to be evaluated~~be knowledgeable of covered tasks to be evaluated;~~
- f) be able to can recognize and react to AOCs that may occur during the evaluation.

Operators may decide that evaluators are not required to be currently qualified to perform the covered tasks they will evaluate. If the individual to be evaluated performs a qualification or requalification on an active jurisdictional pipeline, span-of-control requirements apply (see [Section 7](#)).

6.2.4.2 Individual Selection

Individuals are selected based on whether they perform covered tasks. At a minimum, operators should ensure individuals:

- a) understand safe work practices;
- b) understand the evaluation process and be adequately prepared to be evaluated;
- c) possess the knowledge, skill, and ability to perform the covered task;
- d) can recognize and react to AOCs that may occur during the evaluation.

6.2.4.46.2.4.2.3 Proctor Selection

Operators should determine whether examination proctoring will be required. Proctors administer written, oral, or online examinations to ensure that individuals complete examinations independently, without help from others, and without using unapproved resources. Proctoring increases the integrity and reliability of the examination process and associated qualification records. Proctors should:

- a) possess a high degree of integrity;
- b) possess effective communication skills;
- c) know examination security procedures;
- d) understand procedures for proctoring knowledge examinations.

Proctors are not required to be knowledgeable or qualified in the covered tasks they proctor.

6.2.4.56.2.4.3 Examination/Evaluation Procedures

Operators should establish guidelines for:

- a) verifying the identity of the individual to be evaluated;
- b) ending an evaluation when an AOC-emergency or unsafe condition occurs;
- c) pausing and resuming an evaluation when conditions warrant;
- d) limiting the number of evaluation attempts;

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- e) taking necessary remedial actions after an unsuccessful evaluation attempt;
- f) handling suspected cheating during an evaluation.

The area where the evaluation takes place should ensure:

- a) ~~the environment is quiet~~conducive for evaluation (i.e. for examination testing, a quiet environment);
- ~~a) b) without minimal~~ distractions;
- ~~b) no unauthorized reference materials are present;~~
 - ~~c) equipment and tools necessary for task performance are ready for use;~~
 - ~~d) safety equipment, including personal protective equipment, is available, inspected, and appropriate for the task being performed;~~
- ~~e) c)~~ examination sheets, answer sheets, and performance evaluation checklists are secure;
- ~~f) d)~~ ~~proctor and individual~~ system login credentials and records are secure;
- ~~e) individuals are aware of company procedures for examinations, such as no unauthorized use of cell-
phonedigital devices or unauthorized internet use, no unauthorized reference materials, or
discussions are present;~~
- f) for performance evaluations:
 - i. equipment and tools necessary for task performance are ready for use;
 - ii. safety equipment, including personal protective equipment, is available, inspected, and appropriate for the task being performed.
- ~~g) during examinations and no talking with others.~~

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6.2.4.66.2.4.4 Evaluation Criteria

Operators should develop and document evaluation criteria for each covered task. Evaluation criteria may be developed internally, provided by third-party vendors, adopted from manufacturers, incorporated from an industry standard, or a combination of these.

Evaluation safety:

- a) During any evaluation, safety should be the primary consideration.
- b) Evaluators should ensure that individuals are following all safety procedures and act in a safe manner before, during, and after the evaluation.
- c) Safety equipment, including personal protective equipment, should be used according to company policies and procedures.

Grading system:

- a) For written, oral, or online examination, operators should determine the type of grading system to use and the rationale for their selection. Examples of grading systems include the following:
 - 1) pass or fail—where all questions shall be answered correctly to pass the examination;
 - 2) criterion-based—uses a percentage score (e.g. 80 % minimum passing score);
 - 3) criterion-based with critical questions—uses a percentage score (e.g. 80 % minimum passing score) with critical questions established for information that is essential to safely perform the task.
- b) Operators should score performance evaluations as either pass or fail.
- c) Operators should not allow individuals to self-scoregrade.

Reference materials:

- a) During performance evaluations, individuals should be permitted to refer to company procedures, manufacturer instructions, or any other document they would normally be permitted to access when performing the task.
- b) During written, oral, or online examination, individuals should not be permitted to access reference materials.

Checklists:

- a) For performance evaluations, a checklist that contains each step necessary to perform the task and copies of relevant work procedures may be used by the evaluator to aid in assessing whether all steps in the process were performed.

Evaluation participants:

- a) Operators should establish limits to the number of individuals assessed during proctored written, oral, or online examination to ensure that the proctor can properly administer an examination.
- b) Performance evaluations should be conducted with one evaluator assessing one individual at a time.

Knowledge, skills, and abilities (KSA):

Evaluations are conducted to determine whether the individual has the KSA to perform the task and to recognize and react to AOCs that may occur during task performance.

- a) Knowledge includes the following:
 - 1) AOCs that may occur during the performance of the task;
 - 2) applicable procedures or manufacturer's instructions or specifications to safely perform the task;
 - 3) applicable equipment or tool selection, use, testing, and calibration requirements;
 - 4) the sequence of steps to perform the task;
 - 5) general knowledge of the task topic and related information, such as Code requirements;
 - 6) handling anticipated variables that may occur (including weather, darkness, noise, etc.).
- b) Skills include the following:
 - 1) demonstration of the task performance;
 - 2) demonstration of the recognition and appropriate reaction to AOCs that may occur during task performance.
- c) Physical abilities to consider:
 - 1) seeing;
 - 2) hearing;
 - 3) smelling;
 - 4) walking;
 - 5) lifting and moving equipment and components (as necessary);
 - 6) operating necessary tools and equipment.

6.2.4.76.2.4.5 Selection of Evaluation Methods

The selected evaluation methods should be appropriate for the assessment/ or examination. Operators may use a different evaluation method for an individual's initial qualification as opposed to an individual's subsequent qualification of a task. Individuals, currently Currently qualified; individuals are typically more experienced in the task during subsequent qualification evaluations.

Table 1 is a representation of evaluation methods and their applicability for various assessments and examinations.

- a) "X" is a suitable evaluation method for the assessment/examination;
- b) "O" is an evaluation method that may complement another evaluation method;
- c) blank-"N/S" means the evaluation method is ~~not~~ Not suitable Suitable for the assessment/examination.

Table 1—Evaluation Methods

Evaluation Method	Assessment/Examination of				
	Knowledge	Skill	Abilities	AOC Recognition	AOC Reaction
Written, oral, or online	X	O	N/S	X	O
Performance	O	X	X	X	X

6.2.4.86.2.4.6 Evaluations Conducted via Technology

Historically, performance evaluations have been conducted in-person, through simulation or with an evaluator observing and assessing an individual on-site as the individual performs the task. Technology is now available to enable operators to conduct realistic evaluations through computer-generated applications, remote meeting technology, or use of remote equipment such as a remote operated vehicle or drone for underwater or air applications, respectively.

Tasks that the operator has identified as more critical or more complex may not be suitable for evaluation via technology. For technology to be suitable for evaluations, it shall allow the individual being evaluated to realistically perform each step in the task while the evaluator assesses their performance. Evaluation criteria for evaluations via technology should be the same as in-person or on-site evaluations. Operators should document their assessment and approval of any technology used to conduct evaluations.

Various methods include:

- a) Computer-generated applications:
 - 1) Virtual reality, augmented reality, and other applications digitally replicate task performance situations under safe and controlled conditions in a digital environment. The evaluator can observe and assess the actions of the individual being evaluated as they perform each task step.
- b) Evaluations conducted remotely:
 - 1) Operators may use video conferencing or other software in situations where the evaluator and individual being evaluated are not in the same location. The operator should determine which tasks are appropriate for a remote evaluation. For example, initial qualification may not be appropriate for remote evaluation. The operator should assess whether communication equipment is sufficient to permit effective remote evaluations.
 - 2) If an evaluation is taking place on an active pipeline, and the individual being evaluated is not qualified in the task, the unqualified individual shall be directed and observed by a qualified individual, within close proximity.
 - 3) If necessary, the evaluator should designate an on-site observer to continuously monitor the evaluation to ensure the integrity of the evaluation and the safety of the environment. The observer shall remain within close proximity until the evaluation is complete.

6.2.4.96.2.4.7 Documentation

Operators should maintain documentation of an individual's qualification, including the methods used to assess KSA to perform a task. Qualification records shall include the following:

- a) identification of qualified individual(s);
- b) identification of the covered tasks the individual is qualified to perform;

Commented [CT8]: Chrystah - Poll the group on if used

- c) date(s) of current qualification;
- d) qualification method(s).

Operators shall maintain records supporting an individual's current qualification ~~while the individual is performing the covered task~~. Records of prior qualification and records of individuals no longer performing covered tasks shall be retained for a minimum of five years.

6.2.5 Abnormal Operating Conditions

An evaluation of the individual's ability to perform a covered task shall include the ability to recognize and react to AOCs associated with the covered task.

Identification of AOCs for covered tasks includes analyzing the covered task procedures for any potentially hazardous condition that could occur while the task is being performed. ~~Upon identification, determine and document the AOC, the recognition and appropriate reaction.~~ Operators should consider both general and task-specific AOCs. While task-specific AOCs may be encountered while performing the covered task, General AOCs are generic in nature, but are observable to individuals on-site, while task-specific AOCs may be encountered while performing the covered task.

Further guidance on identifying AOCs is provided in [Annex G](#).

~~An evaluation of the individual's ability to perform a covered task shall include the ability to recognize and react to AOCs associated with the covered task. Operators have the flexibility to determine evaluation method(s). These methods include developing a stand-alone AOC evaluation and/or incorporating AOCs into task evaluation.~~

6.2.6 Type of Qualification

Operators should consider the type of qualification when determining evaluation methods. Requirements may differ between initial, subsequent, and post-suspension qualification.

6.3 Other Circumstances That Require Qualification Considerations

6.3.1 New Construction

New construction ~~activities do not meet the Four Part test, is not covered under the OQ regulations for pipeline safety.~~ Operators should consider applicability for certain covered tasks when existing regulated assets may be affected by ~~the~~ new construction. Examples include the following:

- line locating in the right-of-way of an existing asset;
- observing excavation activities near within operator-required distance from a regulated asset;
- cathodic protection (CP) system installation;
- building in an existing station or facility;
- tying into an existing regulated asset.

New construction ends upon physical connection to an active pipeline or when a new system is commissioned. Thereafter, tasks performed are operations and maintenance activities requiring operator qualification, until the pipeline is officially abandoned.

6.3.2 Mergers and Acquisitions

An operator's OQ program should include provisions for mergers and acquisitions of assets included in the program to ensure that individuals performing covered tasks are qualified or under span of control.

A review should be conducted to identify compatibility with the operator's program and identify any processes that may need to be addressed. Items to consider:

- AOCs;
- covered tasks, including: span of control;
- reevaluation intervals, and;

- evaluation methods;
- contractor qualifications;
- current qualification suspensions;
- past regulatory audit findings and corrective actions.

Following the review, the operator may accept all or part of the acquired asset's program or incorporate any new personnel and/or contractors. A plan should be established when transitioning personnel and/or contractors under the acquired asset's program to the operator's program.

[Annex E](#) may be used to aid in the OQ program review. Where possible, the operator should document actions taken.

6.3.3 Mutual Assistance

Operators may enter into mutual assistance agreements with other operators to help ensure that they have the resources necessary to complete covered tasks, particularly in times of emergency. Operators should ensure that individuals who perform covered tasks on the operator's pipeline are operator qualified.

Commented [CT9]: Left off here in Q2 meeting 5/14

Commented [CT10]: Note: ASME B31Q has a much more robust section focused on emergency situations detailing emergency responder qualification requirements and steps to validate/accept qualifications mutual assistance.

Ask the group: Should we add considerations for non-emergency situations (ie overpressure protection services provided by another operator)

7 Allowing Individuals Who Are Not Qualified to Perform a Covered Task

7.1 General

Operators may consider a mechanism to observe and direct performance of a covered task by unqualified personnel.

7.2 Span of Control

An operator's program may allow unqualified individuals to perform some covered tasks, providing they are directed and observed by a qualified individual. For a qualified individual to direct and observe an unqualified individual, the qualified individual shall be in close proximity and within line of sight to the unqualified individual so that the qualified individual may intervene if needed, assume control if the task is being performed incorrectly, and respond to an AOC if one should arise.

Span of control is determined by analyzing the risk and difficulty of the task. Refer to [Annex H](#).

An operator should consider temporarily reducing span of control for a specific task when actual jobsite conditions (i.e. language barriers, weather conditions, and excessive distraction) limit the qualified individual's ability to direct and observe unqualified individuals.

Span of control applies only to individuals who are physically performing steps of a covered task. Span of control does not apply to individuals who are performing only ancillary functions (such as a welder's helper). ~~A qualified individual can only direct and observe unqualified individuals performing a single task at any given time.~~

7.3 Guidance on Emergency Response

~~Operator qualification requirements for emergency response are limited to existing covered tasks performed on the pipeline facility.~~

~~Individuals who act, or could be reasonably expected to act, on behalf of an operator during emergency situations, as an extension of the operator's workforce, shall be qualified under the operator's OQ program. Operator non-qualified individuals not performing 49 CFR 195 operations and maintenance covered tasks and Emergency responders, such as firefighters or police officers who act on their own accord consistent with their job responsibility of protecting public safety, need not be qualified to act by the operator to act on their own accord consistent with their job responsibility of protecting public-~~

Commented [CT11]: Note on Removal: Provides further flexibility for non-jurisdictional facilities that have some jurisdictional assets on property (example refinery with connected breakout tanks)

~~safety~~—During the emergency phase, the operator's primary responsibilities are the protection of life, property, and the environment.

8 Individuals Who Contribute to an Accident

8.1 General

Operators should consider suspending and reviewing an individual's qualification if the individual's performance of a covered task(s) may have contributed to an accident.

8.2 Appropriate Action Following Individual's Involvement in an Accident

If the operator has determined that a covered task was being performed at the time an accident occurred, the operator should investigate to determine whether the incorrect performance of a covered task was a causal factor to the accident. When making this determination, the operator should review:

- an individual's knowledge on how to perform a covered task;
- any change in an individual's skills or ability required to perform a covered task;
- any deficiency in the performance of a procedure;
- any unidentified AOCs related to the particular covered task(s);
- unsatisfactory or unsafe performance of a covered task;
- if the task was performed by an unqualified individual.

The operator shall determine and execute appropriate action(s) based on their review, which may include the following:

- suspension or disqualification from performing the covered task(s);
- additional training;
- a procedure(s) review;
- a procedure(s) revision;
- evaluation;
- requalification;
- revision of the OQ program;
- other actions as warranted.

Operators should document the results of the review and evidence of suspension, disqualification, or requalification.

9 Potential Reasons for Disqualification

9.1 General

Operators shall review an individual's performance of covered tasks if there is reason to believe the individual is no longer qualified.

9.2 Determining if an Individual Should No Longer Be Qualified

Operators should develop a process to determine if an individual is no longer qualified to perform a covered task. Factors to consider may include the following:

- contributing to an accident while performing a covered task;
- failure to properly perform a covered task;
- extended period of non-performance of a covered task;

- failure to recognize or properly react to an AOC;
- significant changes in company/regulatory task qualification requirements;
- loss of motor skills, vision, or impairments;
- concern expressed about an individual's ability to perform a covered task;
- qualification period, as determined by company, has expired.

If an individual is determined to no longer be qualified, the operator should suspend the individual's qualification to perform the task and consider additional actions, which may include the following:

- restricting performance of covered task (such as performing task under span of control);
- additional training;
- reevaluation;
- procedure review.

9.3 Suspension Process

Suspension of an individual's qualification(s) should be documented and upheld until the operator has determined if the suspension was warranted, retraining and/or evaluation has been completed, or it was determined that the individual's actions did not contribute to an accident. Upon the operator's review, the suspension could result in a reinstatement or a removal of the individual's task qualification(s).

The suspension of an individual's qualification(s) should at a minimum apply to the specific covered task(s). The operator should determine if the suspension of such qualifications will affect the individual's ability to perform other covered task(s).

10 Identifying Covered Tasks Reevaluation Intervals

10.1 General

Operators shall establish a reevaluation interval for each covered task.

10.2 Developing Reevaluation Intervals

When developing reevaluation intervals, the operator has the option of using industry associations' (or other entities) recommended intervals as guidance or developing operator-specific intervals. If an operator chooses to adopt industry-developed intervals, they should review each interval to verify alignment with the operator's OQ program. Some covered tasks, such as welding or nondestructive testing (NDT), have regulatory requirements that may affect reevaluation intervals.

When developing or revising intervals, the operator should document the rationale used to determine the intervals and may use a similar process as described in [Annex H](#).

11 Communicating Changes

11.1 General

The operator shall establish a process for communicating changes that affect the performance of covered tasks.

11.2 Developing Processes to Communicate Changes That Affect Covered Tasks

Changes that affect the performance of covered tasks may include the following:

- task modification;
- revisions to policies, procedures, or standards;
- changes to tools, equipment, or technology.

Other changes that may require communication include the following:

- task addition or deletion;
- modification of reevaluation intervals;
- revision to span of control;
- modification, addition or deletion of evaluation methods, materials, and criteria;
- revisions or additions to identified AOCs.

Changes to covered tasks may necessitate additional evaluation to maintain qualification.

12 Training

12.1 General

The operator shall provide training, as appropriate, to ensure that individuals performing covered tasks have the necessary knowledge and skills required for qualification to perform the tasks in a manner that ensures the safe operation of the pipeline facilities.

12.2 Providing Training

Training on specific covered tasks and/or based on the individual's need for training may be appropriate in the following circumstances:

- initial ~~and~~/or requalification;
- following a suspension;
- per an accident investigation or a near miss;
- addition of a covered task;
- revisions to policies and procedures;
- changes to tools, equipment, or technology;
- after a failed examination/ or evaluation; or
- ~~or~~ as determined by the operator.

The operator may choose the mechanism by which training will be delivered. The delivery method shall be fit for purpose and meet operator requirements. Training delivery methods can include the following:

- OJT;
- instructor-led training;
- computer-based training;
- certification programs;
- table-top/ exercise or simulation;
- self-study; or
- other methods as determined by the operator.

13 Regulatory Notification of Significant Changes

13.1 General

Operators shall identify significant modifications made to the operator's approved qualification program and submit the changes to PHMSA and appropriate state regulatory agencies.

13.2 Guidance on Determining a Significant Change

Operators shall determine what changes are considered significant to the OQ program. At a minimum, the following should be considered significant:

- increasing evaluation intervals;
- increasing span of control ratios;
- eliminating covered tasks;
- evaluation method changes;
- wholesale changes made to the operator's OQ program (e.g. consolidation of programs following a merger, acquisition, or divestiture; changes to roles and responsibilities).

13.3 Guidance on Transmitting Operator Qualification Program Revisions

The operator should submit the complete OQ program to the PHMSA administrator or participating state agencies, accompanied by a revision log and the effective date of change(s). Revisions should be made allowing the changes to be readily identified. Employee-specific information (~~i.e. social security numbers~~) and examination material do not need to be sent.

Each notification should include the following:

- operator identification number(s), operator name(s), and headquarters address;
- name of individual submitting notification;
- date/email/phone number;
- commodity (gas/liquid/both);
- PHMSA region(s) where pipeline(s) operates;
- names of respective facilities or pipeline systems where changes apply.

14 Recordkeeping

14.1 General

The operator shall maintain records that demonstrate compliance with 49 *CFR* § 195.507. Qualification records shall include the following:

- identification of qualified individual(s);
- identification of the covered task(s) the individual is qualified to perform;
- date(s) of current qualification;
- qualification method(s).

Records supporting an individual's current qualification shall be maintained while the individual is performing the covered task(s). Records of prior qualifications and records of individuals no longer performing covered task(s) shall be retained for a period of five years.

14.2 Developing Recordkeeping Criteria

Operators should develop and document a process to verify that individuals performing covered tasks have valid qualifications. Validation methods can include hard copy records, electronic records, or ID cards. Different methods may be used to validate qualification for employees, contractors, subcontractors, or other individuals.

The operator should consider maintaining additional records to demonstrate compliance with the program. While this list of records is not required by regulation, many are integral to the OQ program:

- documented history of OQ program and all program revisions, including covered task changes;
- communication of the OQ program;
- evaluation criteria;
- reevaluation records for cause;
- feedback from field personnel, accident investigations, near miss programs, or other sources that could enhance the OQ program, such as AOCs, evaluations, and training;
- results of program review and/or auditing;
- history file of checklist used for performance verifications and written/oral exams;
- justification for selection of evaluators;
- revision log.

DRAFT