

CHAPTER I

GUIDELINES FOR DEVELOPING AN OPERATOR QUALIFICATION PROGRAM

INTRODUCTION

These guidelines were prepared by a team of industry and government pipeline safety and training experts to assist small operators and master meter system operators to develop programs to ensure that individuals who operate and maintain these systems are qualified for the work they perform. Operators are required to prepare and follow an OQ program by federal regulations at 49 CFR 192 Subpart N and 49 CFR 195 Subpart G, as well as regulations adopted by some states.

OQ programs must identify each individual, whether it be an employee of the operator or an employee of a contractor hired by the operator, who performs covered operations or maintenance activities on the piping system. The OQ program must also identify the “covered tasks” that each individual performs and ensure that each individual is tested to ensure they have the necessary knowledge, skills and abilities to perform each task, as well as to recognize and react to emergencies that may arise while performing these tasks. The process the operator follows to accomplish these objectives must be in writing. Records of the tests and other actions required in the plan must be made available for inspection by state and federal pipeline safety inspectors.

The following steps should be considered when preparing an operator qualification program.

PREPARE A WRITTEN OPERATOR QUALIFICATION PLAN

The regulations require that you prepare and follow a written OQ plan that at minimum includes the following eight provisions:

1. Identify covered tasks (operation and maintenance activities affecting the integrity of the pipeline and required by the safety code);
2. Evaluate individuals performing covered tasks to prove that they are qualified;
3. Allow individuals who are not qualified to perform a covered task if directed and observed by an individual who is qualified;
4. Evaluate an individual if there is reason to believe that the individual's performance of a covered task contributed to an incident;
5. Evaluate an individual if there is reason to believe that the individual is no longer qualified to perform a covered task;
6. Communicate changes that affect covered tasks to individuals performing those covered tasks;
7. Establish re-evaluation intervals; and
8. Describe how training will be used in the OQ program where appropriate (new hires, refresher training for existing employees who transfer to new jobs or fail re-evaluations, etc.).

In addition to these minimum requirements, the written OQ plan should:

1. Name the person who will be responsible for ensuring that the requirements of the plan are carried out;
2. Identify records necessary to carry out the program and where those records will be kept.

IDENTIFY COVERED TASKS

A covered task is defined as any task that:

1. Is performed on a pipeline facility;
2. Is an operations or maintenance task;
3. Is performed as a requirement of this part (Part 192 or Part 195); and
4. Affects the operation or integrity of the pipeline.

The first step in identifying covered tasks is to identify tasks performed on pipeline facilities. “Pipeline facilities” means all underground piping and outdoor aboveground piping; it generally does not include piping inside customer buildings, although if gas is sold to the customer through a gas meter located inside the building, “pipeline facility” extends inside up to the outlet of the meter.

A good source to identify tasks performed on a pipeline facility is the Manual for Operations, Maintenance and Emergency Response. This will describe operations and maintenance tasks performed on a system.

The following is a list of common operations and maintenance tasks. Not all of these tasks may apply to every system, and there may be additional tasks performed on other systems that meet the definition of a covered task that are not listed here:

- Investigating leak/odor complaints
- Locating and marking lines
- Controlling and monitoring pipeline pressures and product flows
- Operating an odorizer
- Monitoring natural gas odorization levels (“sniff tests”)
- Repairing leaks
- Inspecting and testing pressure regulator station and overpressure protection
- Tapping pipelines under pressure
- Conducting leakage surveys
- Joining pipe for maintenance
- Inspecting critical valves
- Welding on a pipeline for maintenance
- Excavating and backfilling
- Repairing coating on existing steel pipelines
- Measuring pipe-to-soil potential

- Coating aboveground piping
- Inspecting for atmospheric corrosion
- Inspecting the condition of exposed pipe or pipe coating
- Installing/replacing a rectifier
- Installing/replacing an anode or test station
- Inspecting a rectifier
- Visually inspecting for internal corrosion
- Purging
- Patrolling
- Isolating sections of pipe or stopping off or otherwise controlling the flow of gas or product to a work site

Certain critical tasks fall outside the scope of the OQ Rule. Relighting appliances and other work performed on gas piping or equipment inside the residences are not covered tasks since they are not performed on a pipeline facility as defined above. Conducting meter dial tests for leaks of internal piping also fall in this category. While individuals performing these tasks are not subject to the OQ program, operators should ensure that competent people do this work since mistakes can lead to accidents. OQ does not exempt anyone from the general good business practices to use competent individuals for all tasks that are important for the safe operation of your system.

Covered task lists may also be purchased from many industry trade associations and other vendors. If one of these lists is utilized, it must be carefully reviewed to ensure that it includes all the tasks performed on the system. Any tasks that are not performed on your system should also be deleted.

EVALUATE INDIVIDUALS WHO PERFORM COVERED TASKS

Evaluating means testing a person through written tests, oral exams, observation while performing the task on the job or in a classroom or simulated setting, or any other documented method that can prove the individual possesses the necessary knowledge, skills and abilities to perform the covered task and recognize and react to “Abnormal Operating Conditions (AOCs).” A checklist is required if observation on the job or a simulation is used for evaluation. To be acceptable, each evaluation must include a document that states what is pass or fail for each step in the evaluation and indicates what knowledge, skills, abilities or AOC’s were tested or observed.

An OQ plan must list the specific evaluations (tests, observations, etc.) that will be accepted as evidence of qualification in each covered task. The list may include more than one acceptable means of qualifying individuals for a task. For example: An operator may adopt their contractors’ evaluations or evaluations by third parties (e.g., associations, vendors, state and local governments) however the operator is responsible to show that the evaluations are appropriate for the way the task is performed on the system.

The operator should be able to demonstrate that the evaluations accepted for each covered task measure the knowledge, skills and abilities required for the task. The evaluations should address critical skills and abilities in addition to critical knowledge needed to perform each task. For example, certain tasks require physical abilities and physical skills critical to accomplishing the

covered task, in addition to knowledge of how to perform the task. In that instance, it must be ensured the evaluation includes a test to address the physical ability of the individual to perform the task. The actual evaluation may involve a knowledge-based test, plus a practical application in the field or classroom simulation to demonstrate physical ability and proficiency.

Further, the testing for covered tasks included in the qualification program must also include questions or hands-on demonstrations on abnormal operating conditions (AOCs) associated with the task to both recognize and react to the AOCs. Abnormal operating condition means a condition that may indicate a malfunction of a component or deviation from normal operations that may:

- (a) Indicate a condition exceeding design limits; or
- (b) Result in a hazard(s) to persons, property, or the environment.

For example, a leaking gas pipe is a malfunction of the pipe (it's not supposed to leak) and can result in a hazard to persons and property.

Some typical AOCs include:

- Fire
- Odor report
- Leaking gas or product
- Component failure
- Operation of a safety device
- Unintended valve closure
- Overpressure
- Under-odorized gas

Some AOCs are specific to certain covered tasks (e.g., component failure could be failure of a valve, regulator, relief valve, rectifier, etc., depending on the task). Other AOCs are general and apply to many, if not all, tasks (e.g., anyone performing operations or maintenance tasks should be able to recognize and react to gas odors, leaking product or spills).

Operators must determine credible AOCs and identify how personnel are expected to react to these. Evaluations used by the operator should address how to recognize and react to abnormal operating conditions. AOC evaluations may be broken out into a separate section of the evaluation or may be incorporated within those portions of the evaluations that address routine knowledge, skills and abilities. Operators should be able to demonstrate that all abnormal operating conditions that can reasonably be anticipated to be encountered and related to the task being performed are addressed in the evaluations for that task, particularly if off-the-shelf evaluations are being used.

Some conditions such as recognizing low pipe-to-soil potentials or corroded pipe could be considered abnormal operating conditions or could be considered part of the routine knowledge, skills and abilities for covered tasks such as measuring pipe-to-soil potentials or inspecting pipe condition. For OQ compliance purposes, as long as the evaluations for the covered task address how to recognize and react to these conditions, it does not matter if these are classified as AOCs or normal conditions.

If an operator elects to accept evaluations developed by others, e.g., your contractors, state plumbers licenses, associations or other vendors, that operator must ensure that these evaluations address the knowledge, skills and abilities necessary to perform the task and recognize and respond to AOCs according to the OQ program procedures.

While not specifically required by the regulation, the written OQ plan should address the qualifications of the individuals who will evaluate your employees and contractors. If the evaluations chosen require the evaluator to make a judgment whether the task was performed correctly, then the evaluator should possess adequate knowledge about proper performance of the task so that a proper judgment can be made when evaluating the task.

ALLOW UNQUALIFIED INDIVIDUALS TO PERFORM A COVERED TASK IF DIRECTED AND OBSERVED BY AN INDIVIDUAL WHO IS QUALIFIED

Operators may allow individuals who have not met the evaluation criteria listed in the OQ plan to perform covered tasks under controlled conditions. A written OQ plan must spell out the conditions under which individuals who have not met the qualification criteria may perform tasks while under the observation and direction of a qualified individual. This is intended to allow on-the-job training and temporary labor work teams. The operator must ensure that non-qualified personnel are watched by a person qualified in the covered task being performed and the observer should be prepared to take immediate corrective action should he/she observe work being done that is not in accordance with the operator's procedures, or is being done in an unsafe manner. Supervising from a remote location is NOT acceptable – the qualified individual must be on-site, watching the task and ready to intervene immediately should it be necessary. The written OQ plan should provide guidance on how many non-qualified workers can be directed and observed at one time by a qualified individual and a list of any tasks non-qualified persons will not be allowed to perform (e.g., hot taps).

Operators may specify in the OQ plan that only qualified individuals may perform covered tasks, in which case on-the-job training for covered tasks may not be used even with a qualified individual directing and observing the non-qualified individuals.

POST ACCIDENT/INCIDENT EVALUATION

The OQ plan must specify that the operator will re-evaluate anyone whose performance of a covered task may have contributed to an accident (for hazardous liquid pipelines) or incident (for gas pipelines), either caused it, failed to respond appropriately or made it worse by responding inappropriately. For example, if an accident/incident occurs because a pipeline location was inaccurately marked, the individual who marked the line may have contributed to the accident/incident. Similarly, if an individual opens a valve that should remain closed and that causes an accident/incident to be worse, that contributes to the severity of the accident/incident. The OQ plan must specify the process used re-evaluate these individuals. Re-evaluation need not be by the same methods you used to initially evaluate the individual, but if the operator intends to use a different method, this method must:

1. Address the knowledge, skills, abilities and AOCs for the task, and
2. Be listed in the written OQ Plan as an accepted evaluation for the covered task.

FOR CAUSE EVALUATION

The OQ plan must include provisions on how to re-evaluate persons for whom there are reasons to believe that they are no longer qualified. The plan should include some guidance for supervisors to recognize and react to behavior that would trigger these provisions. Reasons could include observation of the person not following procedures, injury or illness that reduces motor skills.

COMMUNICATION OF CHANGES

The OQ plan must specify how changes to policies, procedures, equipment or regulations are to be communicated to anyone who performs covered tasks affected by the change. Re-evaluation may be required if the changes affect the knowledge, skills and abilities required for the task. For example, when purchasing a new leak detection instrument, an operator should consider whether the new instrument is basically the same as the old instrument it replaces, in which case you need only communicate to the persons using the device that it has been replaced. If, however, the new instrument operates on a different principle than the one it is replacing, it may be necessary to retrain the persons using it, develop new evaluations for the new equipment and re-evaluate the persons using it. The OQ plan should also spell out conditions under which re-evaluation will be required such as new tools, equipment and materials or when changes to policies, procedures, etc., require it.

ESTABLISH RE-EVALUATION INTERVALS

To continue to be qualified, individuals performing covered tasks must be periodically re-evaluated. Re-evaluation intervals should be based on factors such as:

1. How frequently is the covered task performed? More frequent performance may justify longer re-evaluation intervals;
2. How complex is the covered task? More complex tasks may require shorter re-evaluation intervals; and
3. What might the consequences be if the task is performed improperly? What is the worst that could happen if the covered task is not performed correctly, with “catastrophe” justifying shorter re-evaluation intervals and “nothing” justifying longer intervals?

Three years is the commonly accepted interval for most tasks. Intervals over 5 years will require justification. Tasks that are performed infrequently may require re-evaluation prior to performance.

Re-evaluation need not be by the same process as initial qualification but must address the knowledge, skills, abilities and AOCs for the task.

TRAINING

The OQ plan should describe how training fits into an operator’s OQ program. While qualification is accomplished through evaluation, not training, some individuals will require training to provide them with the knowledge, skills and abilities necessary to pass the evaluations for a covered task. Some examples of individuals requiring training are:

1. New hires
2. Individuals taking on new tasks (transferred or promoted)
3. Individuals who fail one or more evaluations

Refresher training should also be considered for individuals who require post incident or for cause re-evaluation. This does not mean that every individual who performs a covered task needs to go through a training program before the individual can be re-evaluated. In fact, a common misconception is that training counts as evaluation for a task. Attendance records, certificates of completion, etc., from training classes are not evaluation records and cannot be used as the basis for qualifying an individual for any task. Where a training course includes written or oral exams, observations on-the-job or in a classroom simulation it is the records of these exams and/or observations that can be counted as evaluations for a covered task as long as they address the knowledge, skills, abilities and AOCs for the task.

RECORD KEEPING

An operator must maintain records to prove that the written OQ plan is being followed. For each individual who performs a covered task on your system, an operator must be able to produce a record of the date the individual passed each evaluation required for each covered task the individual performs, the tasks for which the individual is qualified and the method used to qualify the individual. Records of re-evaluations for cause, post incident and when required by re-evaluation intervals must also be maintained. The method may include any combination of written or oral tests, observation in classroom, on-the job or simulation, or other methods specified in the OQ program as accepted for the covered task. An operator should be able to provide federal or state inspectors with copies of the evaluation methods, e.g., tests or observation checklists used to qualify a person for the task, so that the inspector can determine if the evaluations address the appropriate knowledge, skills and abilities for the covered task. You can make an inspection easier on both you and the inspector by having a list of the knowledge, skills, abilities, AOCs and identifying where each is addressed in your observation checklists, test questions and other evaluation tools.

RECORD RETENTION

Records must be maintained for 5 years after the evaluation is no longer required for current qualification for any covered task. In other words, the record retention period is 5 years PLUS the re-evaluation interval specified in an operator's OQ plan for the covered task. For example, if an operator has a 3-year re-evaluation interval for a covered task, and an individual passes an evaluation on October 28, 2002, then re-passes the evaluation on October 28, 2005, the operator must maintain the record of the October 28, 2002 evaluation until October 28, 2010, since the date October 28, 2005, is the date on which the operator ceases to rely on the October 28, 2002 evaluation for qualification.

CONTRACTORS

Many operators use contractors to perform covered tasks on their pipeline systems. The operator qualification regulation requires that any individual who performs a covered task on a pipeline system be qualified for that task according to THE OPERATOR'S OQ plan. If an operator uses contractors for any covered task, the operator is responsible to ensure that each contractor employee who performs one or more covered tasks on your system is qualified for that task or is

being directed and supervised by a qualified individual (if the operator's OQ plan allows for this).

Below are four approaches to handling contractor qualification:

1. Operator evaluates the contractor individuals using company evaluations.
2. Operator allows the contractor to evaluate its personnel using either the operator's evaluations for the tasks or the contractor's evaluations for the tasks. In the latter case, the operator should obtain copies of the contractor's evaluations and ensure they address the same knowledge, skills, abilities and AOCs as the operator's evaluations for the same tasks. Evaluations must be documented, e.g., test questions are written and observation evaluations include checklists indicating what is observed. These evaluations must be listed in the operator's OQ plan as evaluations accepted for these tasks.
3. Require the contractor to be evaluated by a third party (e.g., NACE, NCCER, etc.). The operator should contact the third party, obtain copies of the evaluations and verify that they address the same knowledge, skills, abilities and AOCs as the operator's evaluations for the same tasks. Evaluations must be documented, e.g., test questions are written and observation evaluations include checklists indicating what is observed. These evaluations must be listed in your OQ plan as evaluations you accept for these tasks.
4. Do not qualify contractor personnel; have one of the operator's qualified individuals observe and direct non-qualified contractor personnel.

RECORD KEEPING FOR CONTRACT PERSONNEL

If contractor personnel are used to perform a covered task, the operator must be able to produce records that the contractor personnel are qualified for the covered tasks they perform. The record requirements for contractors are exactly as described above for company personnel. The records must indicate the date the individual was qualified, the task(s) for which he/she is qualified and the method of qualification. The method must be a method listed in the operator's OQ plan as accepted under the OQ plan for the covered task(s) the individual performs.

Contractor qualification records can be kept by the operator, by the contractor or by a third party. If the operator elects to have the contractor or a third party keep the records, ensure that there are provisions for the operator to obtain the records should the contractor or third party go out of business. The operator must be able to produce these records for review for up to 5 years after the last date an individual performs a covered task on your system.

ENFORCEMENT PROTOCOLS

Included in Chapter III are the OQ enforcement protocols. These will be used by state and federal regulators to audit compliance with the OQ regulation. Included in these protocols are questions and guidance that provide insight into what the regulators expect to see when they audit an operator's OQ program. These protocols can be used to conduct a self-assessment of operator's OQ programs to ensure that the program addresses all the important components that the regulators expect to see in an acceptable OQ program.