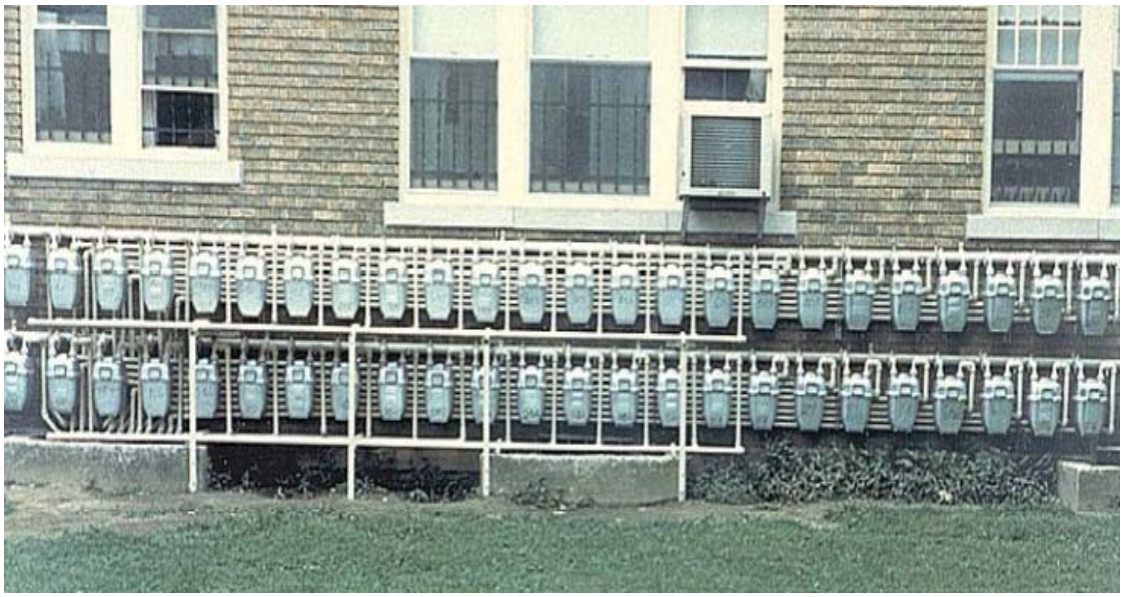
Operator Qualification Guide for Small Distribution Systems



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In April of 2003, a team of individuals representing the liquid pipelines, natural gas industry, and regulatory representatives from around the country, were tasked with development of guidance for small system operators of liquid and natural gas systems, to comply with the Operator Qualification (OQ) Rule. The Small System Operator Task Force (SSOQ) in this document has developed:

- A list of definitions which may be helpful in understanding the OQ Rule,
- Model plan for compliance to OQ Rule,
- A "How to Guide" to comply with OQ,
- Guidance material which explains OQ audit protocols.

The following SSOQ members are recognized as experts in their fields and have given generously of their unique knowledge. They were directly involved in the development of this guide material:

Richard G. Marini – Co-Chair – New Hampshire – Regulatory
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John Erickson – American Public Gas Association

This guidance material was implemented under the sponsorship of the U.S. Department of Transportation. The material relies on sources representing the best opinion on the subject at the time of publication. However, it should not be assumed that all acceptable safety measures and procedures are mentioned in this manual. The reader is referred to the Code of

Federal Regulations (49 CFR Parts 190-199, Part 40 and also NFPA 58 & 59) for the complete pipeline safety requirement.

Included in the 2012 Cooperative Agreement between PHMSA and the APGA Security and Integrity Foundation was the task to update and/or revise the 2002 PHMSA Small Operator OQ Guide. A cross section of industry subject matter experts (SME) were identified and a team was created to review the original guide. The following were members of the SME team for this project and their input was invaluable:

John Erickson – Chair - APGA Security and Integrity Foundation (SIF)
Gerry Lee – Project Manager – APGA SIF
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Matt Smith – Illinois Commerce Commission
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CHARACTERISTICS OF A SMALL SYSTEM OPERATOR

All stakeholders in the pipeline industry fully support the operator qualification (OQ) protocols developed by the U.S. Department of Transportation's Pipeline and Hazardous Materials Safety Administration (PHMSA) in response to the Pipeline Safety Improvement Act of 2002. It is also recognized there is a need for effective guidance for small system operators (i.e., those with less complex gas distribution systems) about how to comply with the protocols. In response to this need, federal and state pipeline safety regulators as well as representatives of small systems committed to develop that guidance and a set of criteria to assist operators who operate less complex pipeline systems.

The one constant and underlying goal of the group developing the characteristics of a small system operator, and their protocols, was to ensure that the level of safety provided by PHMSA's OQ process was maintained and the effectiveness of the OQ rule was not compromised.

The fundamental rationale for having a different set of criteria for small system operators is that many of these operators have a less complex system and management structure. Therefore, such an operator does not need many of the processes and formal management structure described in the current OQ protocols. Both pipeline safety regulators and the regulated industry need to share a common understanding of the "general characteristics" of a small system operator to ensure appropriate protocols application during a compliance audit.

A number of system characteristics were discussed by the government-industry team in determining—what is a "small system operator?" To provide general guidance, two characteristics are discussed below.

1. ***Resources***. Smaller systems have fewer resources available than larger systems; however, all operators must comply with the same pipeline safety regulations. Smaller systems have:

    (i) Less complex systems than larger operators;

    (ii) Fewer individuals;

    (iii) Less complex management structures;

    (iv) Few layers of management, if any, between the OQ Plan Administrator and its personnel performing covered tasks.

2. ***Number of employees performing covered tasks***. While this is part of Characteristic 1 above, the government-industry task force agreed that a system with five or fewer individuals performing covered tasks is likely to be a "small operator." The government-industry task force also agreed that, depending on other

relevant factors, a system with more than 10 individuals performing covered tasks could be determined to be a “small operator.”

These factors are not exclusive in determining a “small operator.” It is important to remember guidance material which applies to large operators also applies to small operators. In providing this supplemental guidance for small operators, the team recognized that the state program managers have the authority and must also have the flexibility in making that final determination in a fair consistent manner.

Again, the elements of OQ compliance should be the same regardless of size; none of PHMSA’s criteria has been eliminated. The small system operator’s protocol elements have been structured to reflect that smaller operators require less formal and less complex OQ compliance program.

TABLE OF CONTENTS

CHAPTER I: GUIDELINES FOR DEVELOPING AN OPERATOR QUALIFICATION PROGRAM

CONTENTS

APPENDIX B: MODEL OQ PLANS

APGA SIF Model OQ Plan

IAMU Model OQ Plan

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 they are 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 evaluated to ensure they have the necessary knowledge, skills and abilities (KSAs) to perform each task, as well as to recognize and react to abnormal operating conditions (AOCs) that may arise while performing these tasks. The process the operator follows to accomplish these objectives must be in writing. Records of the tests, evaluations, 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 OQ program.

PREPARING A WRITTEN OQ PLAN

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

1. Identify covered tasks (operations and maintenance (O&M)) activities affecting the integrity of the pipeline and required by the safety code);
2. Evaluate individuals performing covered tasks to demonstrate that they are qualified;
3. Allow individuals who are not qualified to perform certain covered tasks 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-valuations, etc.).

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

1. Name the person/position who will be responsible for ensuring that the requirements of the plan are carried out;

2. Identify records necessary to carry out the plan 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[1];

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 and 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 O&M tasks performed on a system.

The following is a list of common O&M 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”),

[1] Note: Some states include new construction as covered tasks

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 to 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 or combination of methods that can prove the individual possesses the necessary KSAs to perform the covered task and recognize and react to 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 KSAs 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 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 as identified in American Society of Mechanical Engineers (ASME) B31Q Pipeline Personnel Qualification include:

Unplanned escape of gas from a pipeline,

Fire or explosion,

Unplanned pressure deviation,

Unplanned flow-rate deviation,

Pipeline damage,

Activation of a safety device other than during planned testing,

Unplanned status change,

Interruption or failure of communications, control system or power,

Inadequate odorization or reports of gas odor.

Some AOCs are specific to certain covered tasks (e.g., unplanned pressure deviation could be caused by the failure of a valve, regulator, relief valve, 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 KSAs. Operators should be able to demonstrate that all AOCs 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 AOCs or could be considered part of the routine KSAs 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 KSAs necessary to perform the task and recognize and respond to AOCs according to procedures.

While not specifically required by the regulation, the written OQ plan should address the credentials 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 certain 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 to 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:

Address the KSAs and AOCs for the task, and

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 KSAs 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 and document this training. The OQ plan should also spell out conditions under which re-evaluation will be required such as 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. Federal/state regulations require re-evaluation for certain covered tasks such as pipe plastic joining and welding to be conducted at annual intervals.

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 KSAs 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,
4. Infrequent performance of a covered task,
5. 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. Records of written or oral exams alone cannot serve as an evaluation because the written or oral exam can't determine ability.

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 KSAs 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, 2012, then re-passes the evaluation on October 28, 2015, the operator must maintain the record of the October 28, 2012 evaluation until October 28, 2018, since the date October 28, 2015, is the date on which the operator ceases to rely on the October 28, 2012 evaluation for qualification.

CONTRACTORS

Many operators use contractors to perform covered tasks on their pipeline systems. The OQ 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. The operator must ensure that non-qualified contractor personnel are watched by a person (operator or contractor personnel) 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 being done in an unsafe manner.

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.

EMERGENCY RESPONSE

OQ requirements for emergency response are limited to that portion of the response performed on the pipeline facility, rather than at offsite locations remote from the facility (e.g., deploying booms miles away is not a "covered task").

Fire departments and other public responders are not required to be qualified and *(if not qualified)* must not perform covered O&M tasks on the pipeline facility.

All other individuals employed by the operator must be qualified to perform their assigned covered tasks or must be under the direct observation of a qualified individual.

Covered emergency response tasks are those tasks listed in §§ 192.615(a) and 195.402(e) that meet the four-part test specified in §§ 192.801 and 195.501.

RESOURCES

Included in Appendix A are links to several resources that can be used with the development and implementation of an operator's OQ program and assist in preparation for OQ inspections. These resources can be used to assist in a self-assessment of an 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.

Appendix B references samples of existing OQ plans that can be revised by operators for their OQ plans. NOTE: These existing plans must be adapted to accommodate the operator's specific policies and procedures for their system.

CHAPTER II: DEFINITIONS

A number of terms contained in the OQ Rule and its implementation found in 49 CFR Part 192, Subpart N and in Part 195, Subpart G, may be unclear and subject to different interpretations by operators and regulatory representatives. The following definitions have been obtained through consideration of gas and liquid pipeline regulations, dictionary definitions of a word or term, operator OQ plans, or other sources.

ABILITY

The capacity to do or act, physically and/or mentally.

ABNORMAL OPERATING CONDITION (AOC)

As defined in §§192.803 and 195.503, ***abnormal operating condition*** means a condition identified by the operator 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.

[Note: To be qualified, an individual must be able to properly perform assigned covered task(s) and be able to recognize and react appropriately to any AOC that may (reasonably be expected to) be encountered while performing the covered task – whether the condition arises as a direct result of his/her work performance (e.g., be specific to the covered task being performed) or not (e.g., be generic in nature, but still observable because the individual is present on site).]

ACCIDENT

As defined in §195.50, an ***accident*** is a failure in a pipeline system 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 cubic meters) resulting from a pipeline maintenance activity if the release is:

(1) Not otherwise reportable under this section;

(2) Not one described in §195.52(a)(4);

(3) Confined to company property or pipeline right-of-way; and

(4) Cleaned up promptly;

(c) Death of any person;

(d) Personal injury necessitating hospitalization;

(e) Estimated property damage, including cost of clean-up and recovery, value of lost product, and damage to the property of the operator or others, or both, exceeding $50,000.

ACTIVITY

A specific deed, action, function, or sphere of action.

AFFECTS THE OPERATION OR INTEGRITY OF THE PIPELINE

Any activity, or omission of an activity, that could directly or indirectly result in a hazard to persons, property or the environment. As used in the safety context of the OQ rule, the phrase indicates activities that could result in an AOC that in turn could result in an unsafe operating condition.

BENCHMARK

A standard of measurement or evaluation.

COMMUNICATE

To convey information about; make known; to reveal clearly.

COMPLIANCE

Activity(ies) in accordance with a rule.

CONTRIBUTED

Determined to be a factor.

CONTRIBUTED TO

A judgment by designated operator personnel, that the action or inaction of an individual(s) was a factor in the occurrence of an incident/accident.

COVERED TASK

As defined in §§ 192.801 and 195.501, a ***covered task*** is an activity, identified by the operator, that:

(1) Is performed on a pipeline facility;

(2) Is an operations or maintenance task;

(3) Is performed as a requirement of this part; and

(4) Affects the operation or integrity of the pipeline.

CRITERION

A standard upon which a judgment is based.

CURRENT

Belonging to the present time; now in progress.

DEMONSTRATE

Provide tangible evidence.

DETERMINE

To conclude after consideration, investigation, or calculation.

DIRECT

To take authoritative charge of or supervise; to control, order or command.

DIRECT OBSERVATION

Observation of an unqualified individual(s) during the performance of a covered task by an individual who is qualified to perform the task at hand. The observer must be in direct visual and verbal contact with the individual(s) and must be able to take immediate and effective corrective action if incorrect procedures or AOCs are observed.

DOCUMENT

Prepare a retrievable record.

EMERGENCY RESPONSE

Actions taken by the operator, fire department, police department and others to an unexpected and usually dangerous situation that calls for immediate action.

EVALUATION

As defined in §§ 192.803 and 195.503, ***evaluation*** means 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, or

(3) Simulations.

(e) Other forms of assessment.

[Note: Any evaluation of an individual's qualifications must follow an objective, consistent process that documents the individual's ability to perform the covered task, including the ability to recognize and react to AOCs.]

EVALUATOR

Persons performing evaluations should possess the required knowledge (1) to ascertain an individual's ability to perform the covered tasks, and (2) to substantiate an individual's ability to recognize and react to AOCs that might surface while performing those activities. This does not necessarily mean that the person performing the evaluations should be physically able to perform the covered tasks themselves.

EXCAVATION WITHIN A PIPELINE FACILITY

Qualification for this covered task does not require the operator's employee or contractor employee to be proficient in the operation of excavation equipment. Covered tasks requiring qualification shall include:

- Verification of line location and depth,
- One-call and underground facility owner/operator notifications,
- Sloping/shoring,
- Water removal,
- Inspection.

Third-party excavations that take place on the operator's pipeline facility shall be handled in accordance with the operator's damage prevention program requirements.

IDENTIFY

To establish the identity of; to ascertain the origin, nature, or definitive characteristics of.

IMMEDIATE CORRECTIVE ACTION

Taking steps to correct mistakes or abnormal or hazardous conditions without delay.

INCIDENT

An incident is any of the following events:

(1) An event that involves a release of gas from a pipeline, or of liquefied natural gas, liquefied petroleum gas, refrigerant gas or gas from an LNG facility, and the results in one of the following consequences

(i) Death or injury requiring in-patient hospitalization; or

(ii) Estimated property damage of $50,000 or more, including loss to the operator and others, or both, but excluding cost of gas lost;

(iii) Unintentional estimated gas loss of three million cubic feet or more

(2) An event that results in an emergency shutdown of an LNG facility.

(3) An event that is significant, in the judgment of the operator, even though it did not meet the criteria of paragraphs (1) or (2).

INDIVIDUAL

A person who, on behalf of the operator, performs one or more covered tasks on a pipeline facility operated by the operator. This includes contractors, subcontractors, and operator employees.

INTEGRITY

The ability of a pipeline to operate safely and to withstand the stresses imposed during operations.

INTERVAL

The amount of time between two specified instants, events, or states.

KNOWLEDGE

Understanding gained through experience or study.

KNOWLEDGE, SKILLS, AND ABILITIES (KSA)

An appropriate combination of information, craftsmanship, and proficiency that allows an individual to perform covered tasks in a competent manner.

MAINTAIN

To keep in a condition of good repair or efficiency.

MAINTENANCE

The act of maintaining or the state of being maintained; the work of keeping something in proper condition; upkeep.

MASTER METER SYSTEM

As defined in § 191.3, Master Meter System means a pipeline system for distributing gas within, but not limited to, a definable area, such as a mobile home park, housing project, or apartment complex, where the operator purchases metered gas from an outside source for resale through a gas distribution pipeline system. The gas distribution pipeline system supplies the ultimate consumer who either purchases the gas directly through a meter or by other means, such as by rents.

OBSERVE

The act of watching; to watch or perceive. For purposes of conducting qualification evaluations using on-the-job (OTJ) performance, observations must include the interaction of the evaluator and qualification candidate to ensure that the candidate's knowledge of the procedures (and the reasons for the key steps therein) is adequate to ensure the continued safe performance of the task.

OPERATE

Starting, stopping and/or monitoring a device or system.

OPERATION

Actions taken to facilitate storage or movement of product through a regulated pipeline.

OPERATOR

As defined in §§ 192.3 and 195.2, ***operator*** means a person who engages in the transportation of gas.

PERFORM

To begin and carry through to completion; to demonstrate in accordance with the requirements of; to accomplish (a covered task) in the proper, customary or established manner.

PERSON

As defined in §§ 192.3 and 195.2, ***person*** means any individual, firm, joint venture, partnership, corporation, association, State, municipality, cooperative association, or joint stock association, and includes any trustee, receiver, assignee, or personal representative thereof.

PIPELINE

As defined in §§ 192.3 and 195.2, ***pipeline*** means all parts of those physical facilities through which gas moves in transportation, including pipe, valves, and other appurtenance attached to pipe, compressor units, metering stations, regulator stations, delivery stations, holders, and fabricated assemblies.

PIPELINE FACILITY

As defined in §§ 192.3 and 195.2, ***pipeline facility*** means new and existing pipeline, rights-of-way, and any equipment, facility, or building used in the transportation of gas or in the treatment of gas during the course of transportation.

PRIOR

Preceding in time or order.

PROCESS

A systematic series of actions directed to some end.

PROGRAM

A written description of processes to be followed; a clear delineation of authorities and responsibilities there under and the specific results expected to be achieved for the implementing organization.

PROTOCOL

A standard methodology used to conduct inspections of regulated entities to determine conformance to specific or implied requirements prescribed by regulation.

PROVISION

The written description of the element(s) or approach employed by an operator to satisfy the requirements of the OQ Rule in §§ 192.805 and 195.505.

PURSUANT

In accordance with (or) as a follow-up.

QUALIFIED

As defined in §§ 192.803 and 195.503, ***qualified*** means that an individual has been evaluated and can:

(a) Perform assigned covered tasks; and

(b) Recognize and react to abnormal operating conditions.

RECORDS

Recorded information or data on a particular subject, collected and preserved to demonstrate compliance with a rule or process requirement.

RETAIN

To keep possession of, in a retrievable and useable condition.

SKILL

A demonstrable competency to perform a given task well, arising from talent, training or practice.

SUBJECT MATTER EXPERT (SME)

An individual recognized as having a special skill or specialized knowledge of a process in a particular field, or of a piece of equipment.

STANDARD

A written document which is commonly used and accepted as a basis for judging acceptability of performance in the areas addressed.

TASK

A piece of work assigned to or expected of an individual(s).

TRAINING

An educational or instructional process (e.g., classroom, computer-based, or on-the-job) by which an individual's KSA level is improved. While not currently required by the OQ Rule, training is nonetheless fundamental to implementing many of the OQ Rule's requirements.

WORK PERFORMANCE HISTORY REVIEW (WPHR)

A process established by the operator to ascertain the previously demonstrated competency of an individual to perform a covered task. Evaluation parameters should include:

- A search of existing records for documentation of an individual's satisfactory performance of the covered task in the past.
- Verification that the individual's WPH contains no indications of substandard work or involvement in an incident or accident to which the individual may have contributed by committing an error in the performance of a covered task.
- Verification and documentation that the individual has satisfactorily performed the covered task on a regular basis.
- WPHR cannot be used as a sole evaluation method.

WRITTEN

To set down in writing.

APPENDIX A: RESOURCES

CONTENTS

The following resources may be useful in developing and implementing an operator qualification program.

PHMSA RESOURCES

CODE OF FEDERAL REGULATIONS TITLE 49 PART 192 "TRANSPORTATION OF NATURAL AND OTHER GAS BY PIPELINE: MINIMUM FEDERAL SAFETY STANDARDS"

www.phmsa.dot.gov/regulations

This part prescribes minimum safety requirements for pipeline facilities and the transportation of gas, including pipeline facilities and the transportation of gas.

CODE OF FEDERAL REGULATIONS TITLE 49 PART 195 "TRANSPORTATION OF HAZARDOUS LIQUIDS BY PIPELINE"

www.phmsa.dot.gov/regulations

This part prescribes safety standards and reporting requirements for pipeline facilities used in the transportation of hazardous liquids or carbon dioxide.

PHMSA OQ ENFORCEMENT GUIDELINES

www.phmsa.dot.gov/foia/e-reading-room

The materials contained in this document consist of guidance, techniques, procedures and other information for pipeline safety enforcement. This guidance document describes the practices used by PHMSA pipeline safety investigators and other enforcement personnel in undertaking their compliance, inspection, and enforcement activities.

PHMSA FORM 14 "OPERATOR QUALIFICATION INSPECTION"

www.phmsa.dot.gov/pipeline/library/forms

PHMSA FORM 15 "OPERATOR QUALIFICATION FIELD INSPECTION PROTOCOL"

www.phmsa.dot.gov/pipeline/library/forms

The preceding protocols have been written to assist federal and state pipeline inspectors who are evaluating operator's OQ programs. The protocols are not intended as enforcement instruments or to provide inspectors with additional enforcement authority, but rather are intended to provide inspectors with a template that they can use in the course of their inspections to ensure that operators comply with all elements of the OQ rule. The objective of the protocols is to ensure that the prescriptive requirements of the rule have been followed by operators.

PHMSA FORM 2 “STANDARD INSPECTION REPORT OF GAS DISTRIBUTION OPERATOR”

www.phmsa.dot.gov/pipeline/library/forms

PHMSA Form 2 is the standard inspection form used by federal or state inspectors to inspect gas distribution operators to ensure they are in compliance with all applicable section of 49 CFR Part 192 *Transportation of Natural/Other Gas by Pipeline*. This includes a review to ensure that all operation and maintenance procedures, abnormal and emergency operating procedures, damage prevention and public education procedures, and pipeline installation, connection, repair and operations are in compliance.

OTHER RESOURCES

GAS PIPING TECHNOLOGY COMMITTEE

ANSI Z380.1 “GUIDE FOR GAS TRANSMISSION AND DISTRIBUTION PIPING SYSTEMS”

www.aga.org/membercenter/gotocommitteepages/GPTC/Pages/default.aspx

The guide material presented in the Gas Piping Technology Committee's (GPTC) Guide for Gas Transmission and Distribution Piping Systems (Guide) contains information and some “how to” methods to assist the operator in complying with 49 CFR Parts 191 and 192.

The recommendations contained in the Guide are based on sound engineering principles developed by a committee balanced in accordance with accepted committee procedures and must be applied by the use of sound and competent judgment. The guide material is advisory in nature and contains guidance and information for consideration in complying with the regulations.

AMERICAN SOCIETY OF MECHANICAL ENGINEERS

ASME B31Q “PIPELINE PERSONNEL QUALIFICATION”

https://www.asme.org/products/codes-standards/b31q-2016-pipeline-personnel-qualification

This consensus standard establishes the requirements for developing and implementing an effective pipeline personnel qualification program utilizing a combination of technically based data, accepted industry practices and consensus based decisions. The standard also offers guidance and examples of a variety of methods that may be used to meet selected requirements.

NATIONAL FIRE PROTECTION ASSOCIATION

NFPA 58 "LIQUEFIED PETROLEUM GAS CODE"

www.nfpa.org/codes-and-standards/document-information-pages

This code applies to the storage, handling, transportation and use of LP-gas.

NFPA 59 "UTILITY LP-GAS PLANT CODE"

www.nfpa.org/codes-and-standards/document-information-pages

This code shall apply to the design, construction, location, installation, operation, and maintenance of refrigerated and non-refrigerated utility gas plants.

NFPA 54 "NATIONAL FUEL GAS CODE"

www.nfpa.org/codes-and-standards/document-information-pages

Provides minimum safety requirements for the design and installation of fuel gas piping systems in homes and other buildings. Requirements cover the installation and operation of fuel gas piping systems, appliances, equipment, and related accessories, with rules for piping systems materials and components, piping system testing and purging, combustion and ventilation air supply and venting of gas-fired appliances and equipment.

NFPA 501A "STANDARD FOR FIRE SAFETY CRITERIA FOR MANUFACTURED HOME INSTALLATIONS, SITES, AND COMMUNITIES"

www.nfpa.org/codes-and-standards/document-information-pages

This standard covers fire safety requirements for the installation of manufactured homes and manufactured home sites, including accessory buildings, structures, and communities.

NATIONAL ASSOCIATION OF STATE PIPELINE REPRESENTATIVES

COMPENDIUM OF STATE PIPELINE SAFETY REQUIREMENTS AND INITIATIVES PROVIDING INCREASED PUBLIC SAFETY LEVELS COMPARED TO CODE OF FEDERAL REGULATIONS

www.napsr.org

The purpose of this report is to highlight the areas where additional state actions have been taken to improve pipeline safety improvements and to identify the different areas of focus.

APGA SECURITY AND INTEGRITY FOUNDATION

www.apgasif.org

The APGA SIF is a non-profit 501(c)(3) corporation created in 2004. The SIF is dedicated to promoting the security and operational integrity of natural gas and LP distribution and utilization facilities. SIF resources enhance the ability of small gas system operators to prevent, mitigate and repair damage to gas distribution infrastructure.

SIF efforts focus on providing education, procedures & training, materials, services and products specifically designed to increase the knowledge, skills and abilities of distribution, master meter and propane system operators. It also focuses on increasing operator compliance with federal and state regulation.

STATE PIPELINE SAFETY PROGRAMS

The following is a listing of the websites for the state pipeline safety programs.

Alabama Public Service Commission
www.psc.state.al.us

Arizona Corporation Commission
www.azcc.gov

Arkansas Public Service Commission
www.arkansas.gov/psc

California Public Utilities Commission
www.cpuc.ca.gov/puc/

Colorado Public Utilities Commission
www.dora.state.co.us/puc

Connecticut Department of Energy and Environmental Protection
www.ct.gov/deep/

Delaware Public Service Commission
www.depsc.delaware.gov/

District of Columbia Public Service Commission
www.dcpsc.org/

Florida Public Service Commission
www.psc.state.fl.us/

Georgia Public Service Commission
www.psc.state.ga.us/

Idaho Public Utilities Commission
www.puc.idaho.gov/

Illinois Commerce Commission
www.icc.illinois.gov/

Indiana Utility Regulatory Commission
www.in.gov/iurc/

Iowa Utilities Board
www.state.ia.us/iub/

Kansas Corporation Commission
www.kcc.state.ks.us/

Kentucky Public Service Commission
www.psc.ky.gov/

Louisiana Department of Natural Resources
www.dnr.louisiana.gov/

Maine Public Utilities Commission
www.maine.gov/mpuc/

Public Service Commission of Maryland
www.psc.state.md.us/

Massachusetts Department of Public Utilities
www.mass.gov/dpu/

Michigan Public Service Commission
www.michigan.gov/mpsc/

Minnesota Department of Public Safety
www.dps.mn.gov/

Missouri Public Service Commission
www.psc.mo.gov/

Montana Public Service Commission
www.psc.mt.gov/

Nebraska State Fire Marshall
www.sfm.ne.us/

Nevada Public Utilities Commission
www.nv.gov/

New Hampshire Public Utilities Commission
www.puc.nh.gov/

New Jersey Board of Public Utilities
www.bpu.state.nj.us/

New Mexico Public Regulation Commission
www.nmprc.state.nm.us/

New York State Department of Public Service
www.dps.ny.gov/

North Carolina Utilities Commission
www.ncuc.commerce.state.nc.us/

North Dakota Public Service Commission
www.psc.nd.gov/

Ohio Public Utilities Commission
www.puco.ohio.gov/

Oklahoma Public Utility Commission
www.occeweb.com/

Oregon Public Utility Commission
www.puc.state.or.us/

Pennsylvania Public Utility Commission
www.puc.state.pa.us/

Rhode Island Division of Public Utilities and Carriers
www.ripuc.org/

Office of Regulatory Staff of South Carolina
www.regulatorystaff.sc.gov/

South Dakota Public Utilities Commission
www.puc.sd.gov/

Tennessee Regulatory Authority
www.state.tn.us/tra/

Railroad Commission of Texas
www.rrc.state.tx.us/

Utah Public Service Commission
www.psc.utah.gov/

Vermont Department of Public Service
www.publicservice.vermont.gov/

Virginia State Corporation Commission
www.scc.virginia.gov/

Washington Utilities and Transportation Commission
www.utc.wa.gov/

West Virginia Public Service Commission
www.psc.state.wv.us/

Wisconsin Public Service Commission
www.psc.wi.gov/

Wyoming Public Service Commission
www.psc.state.wy.us/

{INSERT OPERATOR NAME}

Operator Qualification Plan

{INSERT EFFECTIVE DATE}

DISCLAIMER AND CONDITIONS OF USE

This Model Operator Qualification Plan ("Plan") was developed by the APGA Security and Integrity Foundation (SIF) to assist operators in the compliance of applicable Federal and State Regulations related to natural gas pipeline safety (the "Regulations") included in CFR Part 192.801 Subpart N Qualification of Pipeline Personnel. The SIF has endeavored to completely and accurately address the Regulations in this Plan; however, following the suggestions or advice set forth in this Plan may not lead to your compliance with applicable Regulations.

It is the sole responsibility of each operator to review, understand, and follow these regulations as they apply to the operator's natural gas system.

It is the responsibility of the Operator to internally review or retain the services of qualified legal and technical professionals to confirm (i) the completeness and accuracy of the suggestions and advice set forth in this Plan, and (ii) the applicability of such suggestions and advice to any natural gas system or emergency situation.

Table of Contents

{INSERT OPERATOR NAME} OPERATOR QUALIFICATION PLAN

Part One: Purpose and Scope

1.1 Scope

This Operator Qualification Plan (OQ Plan) prescribes requirements for evaluating the qualifications of all persons performing certain operating and maintenance tasks listed in this OQ Plan on **{INSERT OPERATOR NAME}, {INSERT OPERATOR NAME},** gas pipeline system. It is adopted to comply with minimum pipeline safety regulations at Title 49 Code of Federal Regulations (CFR), Part 192, Subpart N.

No company employee, employee of a contractor or any other person may perform any covered task identified in this Plan unless the requirements of this Plan have been satisfied. It is our responsibility to 1) ensure that all our employees and employees of our contractors are qualified in accordance with this Plan, and 2) to maintain adequate records to document these qualifications.

1.2 Purpose

The purpose of this Plan is to ensure safe and efficient gas service by:

- Establishing objective criteria of required qualifications for all persons performing safety-sensitive operations and maintenance tasks on the **{INSERT OPERATOR NAME}** gas piping system,
- Ensuring through evaluation that each person performing safety sensitive tasks on the **{INSERT OPERATOR NAME}** gas pipeline system is able to perform these tasks and recognize and respond appropriately to abnormal operating conditions they may encounter, and
- Maintaining necessary records to administer this Plan.

1.3 Definitions

Unless another meaning is specifically indicated, when used in this plan:

1. *Abnormal operating condition* means a condition identified by **{INSERT OPERATOR NAME}** that may indicate a malfunction of a component or deviation from normal operations that may result in a condition exceeding design limits or hazard(s) to persons, property, or the environment.
2. *Covered task* means any task that:
   - Is performed on a pipeline facility;
   - Is an operations or maintenance task;
   - Is performed as a requirement of 49 CFR Part 192; and
   - Could affect the operation or integrity of the pipeline.
3. *Evaluation* means a process, established by the APGA Security and Integrity Foundation (SIF) and documented by **{INSERT OPERATOR NAME}** to determine an individual's ability to perform a covered task by the following: written examination or oral examination, and hands-on ability evaluation.
4. *Operator* means **{INSERT OPERATOR NAME}.**
5. *Person* means any individual, firm, joint venture, partnership, corporation, association, State, municipality, cooperative association, or joint stock association, including any trustee, receiver, assignee, or personal representative thereof.
6. *Pipe* means any pipe or tubing used in the transportation of gas, including pipe-type holders.
7. *Pipeline* means all parts of those physical facilities through which gas moves in transportation, including pipe, valves, and other appurtenance attached to pipe, compressor units, metering stations, regulator stations, delivery stations, holders, and fabricated assemblies.
8. *Pipeline facility* means new and existing pipelines, rights-of-way, and any equipment, facility, or building used in the transportation of gas or in the treatment of gas during the course of transportation.
9. *Qualified* means that an individual has been evaluated and can (a) perform assigned covered tasks, and (b) recognize and react to abnormal operating conditions.

1.4 Planning for Mergers and Acquisitions

At the present time the owners of **{INSERT OPERATOR NAME*}*** are not in the process of releasing the ***{INSERT NAME OF PROPERTY}*** property. It is understood that if negotiations begin toward this activity then the new potential owner will be made aware of the commitment of having qualified individuals as outlined in federal code CFR 192 Subpart N "Qualification of Pipeline Personnel" prior to completing a merger and/or acquisition. A process will be implemented for ensuring OQ qualifications, evaluations, and performance of covered tasks are identified during the merger with or acquisition of this entity.

Part Two: Employee Responsibilities

2.1 Plan Administration

The {INSERT OPERATOR NAME} Manager or designee is designated as Plan Administrator and is responsible for the total administration of this Plan:

Plan administration includes: maintenance of the complete OQ Plan, including material incorporated by reference; distribution of up-to-date copies of the Plan to appropriate personnel; provision of the Plan available for inspection by authorized agents of regulatory agencies; ensurance that all milestones, periodic evaluation intervals, etc. are conducted as specified in this Plan; notification to all company employees in advance of the date that an employee's current qualification will expire; scheduling evaluations; documentation of the results of evaluations; documentation and maintenance of a current list of qualified employees; continuous review of Federal and State regulations that affect this Plan and/or it revision; and such other activities as are necessary to carry out the scope and purpose of this Plan.

2.2 General Employee and Contract Individual's Responsibilities

All employees and contract individuals are expected to be aware that covered tasks (listed in Attachment A to this Plan) may only be performed by persons qualified under this Plan. Any employee observing any of these covered tasks being performed on the {INSERT OPERATOR NAME} gas pipeline facilities by a non-qualified person must immediately report this condition to the Plan Administrator, in addition to any specific responsibilities listed below.

EXCEPTION:

A non-qualified person(s) may perform a covered task if that person(s) is directed and observed by an individual who is qualified under this Plan to perform that covered task. For the purpose of this Plan, "directed and observed" means that the qualified person is at the site where the covered task is being performed by the person(s) not qualified for this task and is closely watching each step of the work to ensure it is performed correctly per Part 6.1.1. It is not sufficient that the qualified person be in the general vicinity, but must observe each step of the task. One qualified person may direct and observe up to two non-qualified persons at one time performing one or more covered tasks consistent with the ability of the qualified person to observe and direct the performance of the covered task(s) at the same time or have one task suspended while the other is being performed.

2.3 Specific Responsibilities

2.3.1 The Plan Administrator is responsible to ensure that all contracts for the performance of operations and maintenance tasks on company facilities incorporate the list of covered tasks in Attachment A and stipulate that no contractor employee may perform any of these tasks unless the contractor has first provided the company with evidence that these employees are qualified in accordance with the requirements of this Plan. See Part Seven of this Plan for more details on contractor qualification.

2.3.2 Construction inspectors are responsible to ensure that on all the job sites for which they are responsible, that **{INSERT OPERATOR NAME}** and contractor personnel are aware of those tasks in Attachment A for which qualification is required and that non-qualified persons may not perform these tasks unless directed and observed by a qualified person. Work must be immediately stopped on any job where it is discovered that non-qualified workers are performing covered tasks listed in Attachment A unless that person is directed and observed by a person who is qualified for that task. Routine inspection procedures should include review of the qualifications of personnel.

2.3.3 Supervisors are responsible to ensure that their subordinates are aware of the current list of covered tasks in Attachment A and that they are not to perform these tasks unless they possess current qualifications from the company in accordance with **{INSERT OPERATOR NAME}** OQ Plan to perform these tasks or are directed and observed by a qualified person. Supervisors should obtain an up-to-date list of the qualifications of their subordinates from the Plan Administrator.

Supervisors are to immediately report to the Plan Administrator if they have reason to believe that any of their subordinates are no longer qualified. Reasons to believe a person is no longer qualified may include observations of errors made by that employee while performing a task, physical or mental limitations, or other reasons listed in 6.1.1.

Part Three: Identification of Covered Tasks

3.1 Responsibility

The Plan Administrator is responsible for maintaining an up-to-date listing of covered tasks and must approve modifications or additions to the covered task list. For any new covered task the Plan Administrator must identify the Knowledge, Skills, Abilities, Abnormal Operating Conditions and re-evaluation intervals specific to the covered task. The rationale for any changes to the covered task list shall be recorded by the Plan Administrator**.**

3.2 Identifying covered tasks

Covered tasks are those tasks that:

- Are performed on a pipeline facility;
- Are an operations or maintenance task;
- Are performed as a requirement of 49 CFR Part 192; and
- Could affect the operation or integrity of the pipeline.

Tasks that have been evaluated against the four-part test are listed in Attachment A to this Plan. The Plan Administrator shall apply the four-part test to determine whether any new activities not addressed in Attachment A are covered tasks when performed on **{INSERT OPERATOR NAME}** facilities.

3.3 Records

The current list of covered tasks is shown as Attachment A to this Plan.

NOTE: Some states included new construction tasks as an operations and maintenance covered task.

Part Four: Evaluation method

4.1 Responsibility

Initial and subsequent evaluation methods for qualification to perform covered tasks listed in Attachment A are knowledge-based classroom presentations with written or oral examinations, and hands-on skills and abilities evaluations. Records of completed evaluations are the responsibility of the Plan Administrator.

4.2 Specified evaluation methods

The required evaluation(s) for each covered task shall be maintained by the Plan Administrator and are identified as the knowledge-based classroom presentation (with written or oral examinations) and skills and abilities evaluations.

4.3 Re-evaluation intervals

The time period during which each person's qualifications to perform a covered task shall be reevaluated shall not exceed three (3) years. **{INSERT OPERATOR NAME}** will review difficulty, frequency and level of risk of the tasks performed by the person being qualified and revise the reevaluation interval accordingly.

4.4 Evaluation Criteria

Successful completion of the knowledge-based evaluation, either written or oral, requires a score of 70%. All of the required skills and abilities must be passed or retraining and successful evaluation must be completed on those that did not pass.

Part Five: Identification of persons performing covered tasks

5.1 Responsibility

The Plan Administrator is responsible for identifying those employees who perform covered tasks during the course of their work on the **{INSERT OPERATOR NAME}** gas system and shall schedule each employee for evaluation of his/her qualifications to perform each covered task. Evaluation shall be done using one of the evaluation methods identified in Part Four of this Plan. The Plan Administrator shall maintain a list of persons and the covered tasks they are qualified to perform.

5.2 Recordkeeping

The Plan Administrator shall maintain the following minimum records

- Identification of qualified individual(s);
- Identification of the covered task(s) each individual is qualified to perform;
- Date(s) of current qualification; and
- Qualification method(s).

The Plan Administrator shall also maintain records of all actions performed as requirements of this OQ Plan:

- Processes for identification of covered tasks;
- Evaluation records, including the evaluator;
- Investigations of incidents;
- Reevaluation on reasonable suspicion;
- Communication of changes

5.3 Record retention

All records required by this Plan, including contractor records, must be retained for five (5) years after the record is no longer required to document the qualification of any person to perform a covered task. An evaluation record may be discarded five years after:

- A person ceases to perform a covered task on the **{INSERT OPERATOR NAME}** gas system, or
- A person has successfully retaken the evaluation.

Part Six: Re-evaluation of a person's qualifications

6.1 Responsibility

The Plan Administrator is responsible for tracking the expiration dates of the qualifications for each company employee and notifying the employee before any required evaluation will expire. The Plan Administrator is responsible for scheduling reevaluation activities prior to the expiration date of qualifications for each employee.

6.1.1 Reevaluation upon reason to believe that the individual is no longer qualified

Each employee is responsible for notifying the Plan Administrator whenever he/she has reason to believe that any person working on the **{INSERT OPERATOR NAME}** gas system is no longer qualified to perform a covered task. Reasons may include, but are not limited to, observation that an employee or employee of a contractor is improperly performing a task, observable loss of motor skills or other reasons that indicate a person may no longer be able to perform a task. The Plan Administrator shall investigate and require reevaluation in the covered task. **Form OQ-1** shall be completed for each task and person for which work performance has been documented as poor or the subject employee has been found to be involved in a reportable incident per 49 CFR §191.3. The results of the investigation shall be recorded and maintained for five (5) years.

6.1.2 Reevaluation of persons implicated in a reportable incident Investigation of reportable incidents[1] shall include assessment of whether any person's performance of a covered task may have caused or contributed to the incident. Sometimes the investigation may take longer than originally anticipated. The operator should ensure that the individual who may have contributed to the incident does not perform the covered task(s) in question, unless directed and observed by a qualified individual until the investigation is completed and it has been determined the individual's actions contributed to the incident. If the Plan Administrator determines that a **{INSERT OPERATOR NAME}** employee's or contractor employee's performance of a covered task contributed to a reportable incident, qualifications related to the incident shall be reevaluated. If the Plan Administrator has reason to believe that an the individual is not longer qualified to perform the covered task, that individual will have to be re-qualified to the same criteria as initial qualification, written and/or oral examination and hands on evaluation including appropriate training as necessary. The results of the investigation shall be recorded using **Form OQ-1** and maintained for five (5) years.

[1] Per Federal Code reportable incidents are any accident involving a release of gas that results in a death, injury requiring hospitalization or property loss exceeding $50,000. Operators should also verify with their state regulatory agency for additional or more stringent reporting requirement.

6.1.3 Communication of changes in procedures, equipment, regulations, etc. The Plan Administrator shall monitor changes in regulations, procedures, technology, new equipment, etc. that may affect the performance of a covered task and shall determine if these changes are so substantial as to require reevaluation of the qualifications of each person qualified to perform each covered task affected by the change. The Plan Administrator shall determine whether the evaluation method(s) must be changed as a result of the changes. Evaluation methods should be modified if the new equipment, technology or procedure requires different knowledge, skills and abilities (KSA) than those measured by the current evaluation method(s). The Plan Administrator will communicate e.g. meeting, email, etc with all affected individuals and contractors to make them aware of these changes. These changes may include changes in the O & M and/or Emergency Procedures. The communication will occur as soon after the changes are made as practical. The results of this process shall be recorded using the "Operator Qualification Management of Change Communication Log" in Attachment D.

NOTE: See Attachment D, page 93 of the plan for "Notification of Significant P rogram Ch an ge s" to federal/state regulatory officials.

6.2 Reevaluation

As soon as possible after determining that reevaluation is necessary under section 6.1 of this Plan, the Plan Administrator shall schedule a reevaluation of qualifications for the employee or contractor employee. Until such reevaluation is successfully completed, the affected person shall be considered non-qualified for any task that requires successful completion of the evaluation(s) in question and may not perform the covered task unless directed and observed by a person who is qualified to perform the covered task. The person may, however, continue to be qualified for other covered tasks that do not require the evaluation(s) in question. All reevaluation records shall be documented and maintained by the Plan Administrator.

Last Name:	First Name:	ID #:
Task:		

Form OQ-1 – Requalification for Cause or Poor Task Performance

This form is to be used to re-qualify persons to perform a covered task based on involvement related to a reportable incident per 49 CFR §191.3, or demonstrated poor work performance.

Results of records review

	Yes	No	N/A
Review performance reviews for past five (5) years. Do these include statements about how this person performs this task? If yes, describe on a separate page and attach to this form. Attach copies if possible.			
Implicated in accidents/incidents or poor performance. Has this person been cited for poor performance of this task or ever been implicated in an accident/incident or near-miss caused by performance of this task? If yes, describe on a separate page and attach to this form. Attach copies if possible.			
Evidence of prior training or certification. Are there records that this person attended and successfully completed training programs directly related to this task? Attended seminars? Does the person possess certification in relevant skills (e.g., NACE certification)? Attach copies of relevant records			

Reviewer(s):

Date:___/___/____

Part Seven: Qualification of contractor employees to perform covered tasks

7.1 Responsibility

{INSERT OPERATOR NAME} is responsible for assuring that contractor employees and employees of their subcontractors are qualified if they are to perform covered tasks on **{INSERT OPERATOR NAME}**'s gas piping system.

7.2 Evaluation of contractor employees

Contractors and other non-**{INSERT OPERATOR NAME}** employees who perform covered tasks on **{INSERT OPERATOR NAME}** gas facilities must be qualified if they perform any of the covered tasks listed in Attachment A.

Qualification may be accomplished by any one of the following:

{INSERT OPERATOR NAME} may evaluate the contractor employees using the evaluations required of **{INSERT OPERATOR NAME}** employees performing the same task(s) listed in Attachment A, or;

Contractors and other non-**{INSERT OPERATOR NAME}** employees who perform covered tasks included in Attachment A, on **{INSERT OPERATOR NAME}** gas facilities may provide evidence that all contract personnel have completed evaluations equivalent to those listed in Attachment B for the covered tasks they will perform**.** **{INSERT OPERATOR NAME}** has reviewed and adopted the evaluation methods used by contractors as approved methods for qualifying contractors or as an accepted equivalent alternative method to that found in Attachment B, or **{INSERT OPERATOR NAME}** has reviewed and adopted certain third-party certification/qualification programs as accepted evaluation methods for certain covered tasks. Contractor personnel possessing current qualifications from these third parties may be accepted by **{INSERT OPERATOR NAME}** as evidence of qualification.

7.3 Notification of substandard performance of a covered task by a contractor

The Plan Administrator should be notified immediately if any **{INSERT OPERATOR NAME}** employee has reason to suspect that a contractor employee is not qualified to perform a covered task. Such reason could include, but is not limited to, observation of significant failure to follow procedures. In cases where a third-party has qualified the contractor employee, the Plan Administrator should also notify the third-party qualification agency.

Part Eight: Operations and Maintenance Employees

8.1 Identification

Employee Name	Employee Job Title	Employee Hire Date

Part Nine: Plan review for assessment of improvement

{INSERT OPERATOR NAME} will perform an annual review of the OQ Plan including covered tasks listed in Attachment A, skills and abilities evaluations, knowledge-based classroom presentations and associated written examinations, abnormal operating conditions as well as reevaluation intervals. This review will include an assessment for improvement of any and all segments of the OQ Plan. The Plan Administrator will maintain a copy of the results of this review including all decisions to delete, add, and/or revise the subject plan segments as well as the particular rationale for such modification(s).

Attachment A: Identified Covered Tasks

The following tasks performed on **{INSERT OPERATOR NAME}**'s pipelines have been evaluated and found to pass the four-part test to be covered tasks subject to the Operator Qualification (OQ) Rule:

CONSTRUCTION

While construction tasks, by definition, cannot be covered tasks subject to the OQ Rule, some maintenance tasks listed in this section may also be performed in the course of construction activities and will be covered when performed in such circumstances**. {INSERT OPERATOR NAME},** however, shall evaluate all construction tasks and determine the appropriate operator qualifications as detailed in section 7.2.

CORROSION CONTROL COVERED TASKS

SIF 0001 Measure Structure-to-electrolyte Potential
SIF 0031 Inspect and Monitor Galvanic Ground Beds/Anodes
SIF 0051 Installation of Exothermic Electrical Connections
SIF 0071 Inspect or Test Cathodic Protection Electrical Isolation Devices
SIF 0081 Install Cathodic Protection Electrical Isolation Devices
SIF 0101 Inspect Rectifier and Obtain Readings
SIF 0111 Maintain Rectifier
SIF 0141 Visual Inspection for Atmospheric Corrosion
SIF 0151 Visual Inspection of Buried Pipe and Components When Exposed
SIF 0161 Visual Inspection of Internal Corrosion
SIF 0171 Measure External Corrosion
SIF 0181 Measure Internal Corrosion
SIF 0191 Measure Atmospheric Corrosion

LEAK INVESTIGATION COVERED TASKS

SIF 1231 Inside Gas Leak Investigation
SIF 1241 Outside Gas Leak Investigation
SIF 1261 Walking Gas Leakage Survey

DAMAGE PREVENTION COVERED TASKS

SIF 1291 Locate Underground Pipelines
SIF 1301 Install and Maintain Pipeline Markers
SIF 1311 Inspect Pipeline Surface Conditions – Patrol of Right of Way or Easement
SIF 1321 Damage Prevention During Excavation Activities by or on Behalf of the Operator
SIF 1331 Damage Prevention Inspection During Third-Party Excavation or Encroachment Activities as Determined by the Operator
SIF 1341 Provide/Assure Adequate Pipeline Support During Operator Initiated Excavation Activities

ODORIZATION COVERED TASKS

SIF 1211 Odorization – Periodic Sampling
SIF 1221 Odorizer: Odorizer Inspection, Testing, Preventive and Corrective Maintenance

TAPPING COVERED TASKS

SIF 1101 Tapping a Pipeline with a Built-in Cutter

VALVE COVERED TASKS

SIF 0301 Manually Opening and Closing Valves
SIF 0321 Valve Corrective Maintenance
SIF 0331 Valve – Visual Inspection and Partial Operation
SIF 0341 Valve – Preventive Maintenance

PURGING AND ABANDONMENT COVERED TASKS

SIF 1651 Purging – Flammable or Inert Gas
SIF 1701 Isolating, Abandoning and Deactivating

PRESSURE TESTING COVERED TASKS

SIF 0561 Pressure Testing – Non-liquid Medium – Test Pressure Less Than 100 psi
SIF 0571 Pressure Testing – Non-liquid Medium – Test Pressure Greater Than or Equal to 100 psi
SIF 0591 Leak Test at Operating Pressure

REGULATING DEVICES COVERED TASKs

SIF 0381 Spring Loaded Pressure Regulating Devices
SIF 0391 Pilot Operated Pressure Regulating Devices
SIF 0411 Spring Loaded Pressure Limiting and Relief Device
SIF 0421 Pilot Operated Pressure Limiting and Relief Device

PIPELINE REPAIR COVERED TASKS

SIF 0201 Visual Inspection of Installed Pipe and Components for Mechanical Damage
SIF 0681 Joining of Plastic Pipe – Stab Fittings
SIF 0711 Joining of Pipe – Compression Couplings
SIF 0721 Joining of Pipe – Threaded Joints
SIF 0731 Joining of Pipe - Flange Assembly
SIF 0991 Coating Application and Repair – Brushed or Rolled
SIF 1001 Coating Application and Repair - Sprayed
SIF 1011 External Coating Application and Repair – Wrapped
SIF 1041 Install Mechanical Clamps and Sleeves – Bolted
SIF 1141 Squeeze Off Plastic Pipe
SIF 1151 Squeeze Off Steel Pipe

PIPELINE INSTALLATION COVERED TASKS

SIF 0641 Visually Inspect Pipe and Components Prior to Installation
SIF 0861 Installation of Steel Pipe in a Ditch
SIF 0871 Installation of Steep Pipe in a Bore
SIF 0901 Installation of Plastic Pipe in a Ditch
SIF 0911 Installation of Plastic Pipe in a Bore
SIF 0921 Installation of Plastic Pipe Plowing/Pull-In
SIF 0931 Installation of Plastic Pipe by Plowing/Planting
SIF 0941 Install Tracer Wire
SIF 0951 Install of Pipe Above Ground
SIF 0961 Above Ground Supports and Anchors – Inspection, Preventive and Corrective Maintenance
SIF 0971 Installation and Maintenance of Casing Spacers, Vents and Seals
SIF 0981 Backfilling

METER SETS COVERED TASKS

SIF 1161 Installation of Customer Meters and Regulators – Residential and Commercial
SIF 1171 Installing Customer Meters – Large Commercial and Industrial
SIF 1181 Installing and Maintaining Customer Pressure Regulating, Limiting and Relief Devices – Large Commercial and Industrial
SIF 1191 Maintenance of Service Valves Upstream of Customer Meter
SIF 1201 Temporary Isolation of Service Lines and Service Discontinuance

Each individual performing covered tasks on **{INSERT OPERATOR NAME}**'s piping system must be able to recognize and react to identified abnormal operating conditions (AOCs). AOCs that may occur during performance of covered tasks are listed in Attachment C.

Recognition and reaction to AOCs are evaluated utilizing a written AOC recognition and reaction examination.

Attachment B: Evaluation Methods Incorporated by Reference

The following evaluation methods have been accepted by **{INSERT OPERATOR NAME}** and have been determined to be acceptable for qualification in the tasks indicated when contracting associated covered task work:

API 1104 Welder Qualification (maintenance welding tasks)

NACE Technician Level Certification (cathodic protection tasks)

Plastic Fusion/Joining Qualification

Attachment C: Identified Covered Tasks and Knowledge, Skills and Abilities (KSA) and Abnormal Operating Conditions (AOC) Required for Qualification

OPERATOR QUALIFICATION

TRAINING AND EVALUATION

APGA Security and Integrity Foundation

SIF Covered Tasks

Knowledge, Skills and Abilities
Abnormal Operation Conditions

2013

Corrosion Control

Knowledge, Skills and Abilities
Abnormal Operation Conditions

Task 0001 Measure Structure - to - Electrolyte Potential

From ASME B31Q:
Includes using measurement equipment to take a reading of the potential between the pipe being tested and the soil.

1) Identify Requirements
2) Perform equipment check
3) Identify & locate correct test point
4) Measure and ensure accuracy of structure-to-electrolyte potential
5) Recognize & react to Abnormal Operating Conditions
6) Complete necessary documentation

Knowledge, skills, abilities and abnormal operating conditions for this task:

Knowledge of the properties of gas
Knowledge of ignition sources
Knowledge of the use and care of personal protective equipment
Knowledge of cathodic protection (CP) criteria
Knowledge of basic electric principles (voltage, current, resistance, ohms law, etc.)
Knowledge in the use and care of cathodic protection instrumentation
Knowledge of cathodic protection test stations
Ability to use equipment to take pipe-to-soil readings

Ability to recognize and react to the following abnormal operating conditions:

AOC Main Category & Examples of Specific AOCs	Reactions to AOC, as appropriate
Unplanned escape of product from a pipeline • Blowing/Escaping gas/Grade I leak	➢ Protect life & Property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Notify Fire/Emergency Responders ➢ Initiate Emergency Plan ➢ Locate source/cause of AOC ➢ Use appropriate PPE ➢ Stop gas flow ➢ Make repairs/eliminate AOC
Fire or Explosion • Fire on a pipeline • Explosion	➢ Protect life & Property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Notify Fire/Emergency Responders ➢ Initiate Emergency Plan ➢ Locate source/cause of AOC ➢ Use appropriate PPE ➢ Stop gas flow ➢ Make repairs/eliminate AOC
Unplanned Status Change • Inoperable/failure of a pipeline component (T/S) • Low structure-to-electrolyte potential • Stray current on a pipeline	➢ Protect life & property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC
Inadequate Odorization or Reports of Gas Odor • Low odorization • Over odorization • Odor complaint	➢ Protect life & property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC

Adopted: March, 2012
Revised: June, 2013

Task 0031 Inspect and Monitor Galvanic Ground Beds/Anodes

From ASME B31Q:

This task includes inspecting and monitoring the electric potential of galvanic ground beds/anodes.

1) Identify Requirements
2) Perform test equipment check
3) Identify & locate correct test point
4) Obtain current output
5) Recognize & react to Abnormal Operating Conditions
6) Complete necessary documentation

Knowledge, skills, abilities and abnormal operating conditions for this task:

Knowledge of the properties of gas
Knowledge of ignition sources
Knowledge of the use and care of personal protective equipment
Knowledge of cathodic protection (CP) criteria
Knowledge of basic electric principles (voltage, current, resistance, ohms law, etc.)
Knowledge in the use and care of cathodic protection instrumentation
Knowledge of cathodic protection test stations and shunt resistors
Skill to use to properly use Copper Sulfate references and digital voltmeters
Ability to use equipment to take pipe-to-soil readings

Ability to recognize and react to the following abnormal operating conditions:

AOC Main Category & Examples of Specific AOCs	Reactions to AOC, as appropriate
Unplanned escape of product from a pipeline • Blowing/Escaping gas/Grade I leak	➢ Protect life & Property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Notify Fire/Emergency Responders ➢ Initiate Emergency Plan ➢ Locate source/cause of AOC ➢ Use appropriate PPE ➢ Stop gas flow ➢ Make repairs/eliminate AOC
Unplanned Status Change • Inoperable/failure of a pipeline component (T/S) • Low structure-to-electrolyte potential • Stray current on a pipeline	➢ Protect life & property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC
Inadequate Odorization or Reports of Gas Odor • Low odorization • Over odorization • Odor complaint	➢ Protect life & property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC

Adopted: November 2008
Revised: June 2013

Task 0051 Installation of Exothermic Electrical Connections

From ASME B31Q:

This task includes making exothermic (e.g. thermite, cadweld and pin-brazing) connections of tracer wire, test leads, bonds, shunts, etc.

1) Identify Requirements
2) Perform test equipment check
3) Perform exothermic connection
4) Verify mechanical integrity and electrical continuity
5) Recognize & react to Abnormal Operating Conditions
6) Complete necessary documentation

Knowledge, skills, abilities and abnormal operating conditions for this task:

Knowledge of the properties of gas
Knowledge of ignition sources
Knowledge of the use and care of personal protective equipment
Knowledge of cathodic protection principals
Knowledge of basic electric principles (voltage, current, resistance, ohms law, etc.)
Knowledge of safe use of exothermic charges and the appropriate charge required
Knowledge of minimum wall thickness needed for exothermic welding
Ability to recognize active corrosion
Ability to measure pipe wall thickness
Ability to pin braze
Ability to use equipment to take pipe-to-soil readings

Ability to recognize and react to the following abnormal operating conditions:

AOC Main Category & Examples of Specific AOCs	Reactions to AOC, as appropriate
Unplanned escape of product from a pipeline • Blowing/Escaping gas/Grade I leak	➢ Protect life & Property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Notify Fire/Emergency Responders ➢ Initiate Emergency Plan ➢ Locate source/cause of AOC ➢ Use appropriate PPE ➢ Stop gas flow ➢ Make repairs/eliminate AOC
Fire or Explosion • Fire on a pipeline • Explosion	➢ Protect life & Property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Notify Fire/Emergency Responders ➢ Initiate Emergency Plan ➢ Locate source/cause of AOC ➢ Use appropriate PPE ➢ Stop gas flow ➢ Make repairs/eliminate AOC
Pipeline Damage • Coating Damage • Corrosion Damage • Dents, Gouges, Scrapes, etc.	➢ Protect life & Property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC
Unplanned Status Change • Inoperable/failure of a pipeline component (T/S) • Low structure-to-electrolyte potential • Stray current on a pipeline	➢ Protect life & property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC
Inadequate Odorization or Reports of Gas Odor • Low odorization • Over odorization • Odor complaint	➢ Protect life & property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC

Adopted: **November, 2008**
Revised: **June 2013**

Task 0071 Inspect or Test Cathodic Protection Electrical Isolation Devices

From ASME B31Q:

This task includes inspecting the physical integrity and testing electrical isolation devices.

1) Identify Requirements
2) Perform test equipment check
3) Inspect or test isolation devices
4) Recognize & react to Abnormal Operating Conditions
5) Complete necessary documentation

Knowledge, skills, abilities and abnormal operating conditions for this task:

Knowledge of the properties of gas
Knowledge of ignition sources
Knowledge of the use and care of personal protective equipment
Knowledge of cathodic protection (CP) principals
Knowledge of basic electric principles (voltage, current, resistance, ohms law, etc.)
Knowledge in the use and care of cathodic protection instrumentation
Knowledge of cathodic protection isolation devices
Ability to use equipment to take pipe-to-soil readings
Ability to use magnetic isolation tester

Ability to recognize and react to the following abnormal operating conditions:

AOC Main Category & Examples of Specific AOCs	Reactions to AOC, as appropriate
Unplanned escape of product from a pipeline • Blowing/Escaping gas/Grade I leak	➢ Protect life & Property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Notify Fire/Emergency Responders ➢ Initiate Emergency Plan ➢ Locate source/cause of AOC ➢ Use appropriate PPE ➢ Stop gas flow ➢ Make repairs/eliminate AOC
Unplanned Status Change • Inoperable/failure of a pipeline component (T/S) • Low structure-to-electrolyte potential • Stray current on a pipeline – Electric shock	➢ Protect life & property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC
Inadequate Odorization or Reports of Gas Odor • Low odorization • Over odorization • Odor complaint	➢ Protect life & property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC

Adopted: March, 2012
Revised: June, 2013

Task 0081 Install Cathodic Protection Electrical Isolation Devices

From ASME B31Q:

Includes the installation of electrical isolation devices.

1) Identify Requirements
2) Install Isolation Devices
3) Recognize & React to Abnormal Operating Conditions
4) Complete necessary documentation

Knowledge, skills, abilities and abnormal operating conditions for this task:

Knowledge of the properties of gas
Knowledge of ignition sources
Knowledge of the use and care of personal protective equipment
Knowledge of cathodic protection (CP) criteria
Knowledge of basic electric principles (voltage, current, resistance, ohms law, etc.)
Knowledge in the use and care of cathodic protection instrumentation
Knowledge of the material properties and installation of insulated bolt sleeves and washers
Ability to use equipment to take pipe-to-soil readings
Ability to measure voltage and current
Knowledge and ability to install and repair bolted/unbolted insulted joints, bolted flanges and fittings, clamps and other mechanical insulated fittings

Ability to recognize and react to the following abnormal operating conditions:

AOC Main Category & Examples of Specific AOCs	Reactions to AOC, as appropriate	
Unplanned escape of product from a pipeline • Blowing/Escaping gas/Grade I leak	➢ Protect life & Property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Notify Fire/Emergency Responders ➢ Initiate Emergency Plan	➢ Locate source/cause of AOC ➢ Use appropriate PPE ➢ Stop gas flow ➢ Make repairs/eliminate AOC
Fire or Explosion • Fire on a pipeline • Explosion	➢ Protect life & Property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Notify Fire/Emergency Responders ➢ Initiate Emergency Plan	➢ Locate source/cause of AOC ➢ Use appropriate PPE ➢ Stop gas flow ➢ Make repairs/eliminate AOC
Pipeline Damage • Coating Damage • Corrosion Damage • Dents, Gouges, Scrapes, etc.	➢ Protect life & Property ➢ Prevent accidental ignition ➢ Notify appropriate personnel	➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC
Unplanned Status Change • Inoperable/failure of a pipeline component (T/S, isolation device) • Low structure-to-electrolyte potential • Stray current on a pipeline	➢ Protect life & property ➢ Prevent accidental ignition ➢ Notify appropriate personnel	➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC
Inadequate Odorization or Reports of Gas Odor • Low odorization • Over odorization • Odor complaint	➢ Protect life & property ➢ Prevent accidental ignition ➢ Notify appropriate personnel	➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC

Adopted: March, 2012
Revised: June, 2013

Task 0101 Inspect Rectifier and Obtain Readings

From ASME B31Q:

Includes inspecting the rectifier for damage and deterioration and taking readings

1) Identify Requirements
2) Perform test equipment check
3) Visually inspect rectifier
4) Obtain voltage and current output readings
5) Recognize and react to AOCs
6) Complete necessary documentation

Knowledge, skills, abilities and abnormal operating conditions for this task:

Knowledge of the properties of gas
Knowledge of ignition sources
Knowledge of the use and care of personal protective equipment
Knowledge of basic electric principles (voltage, current, resistance, ohms law, etc.)
Knowledge of electrical safety
Knowledge of cathodic protection (CP) criteria
Knowledge in the use and care of cathodic protection instrumentation
Knowledge of CP rectifiers and rectifier systems
Ability to Measure Voltage and current on a Cathodic Protection Rectifier

Ability to recognize and react to the following abnormal operating conditions:

AOC Main Category & Examples of Specific AOCs	Reactions to AOC, as appropriate
Unplanned escape of product from a pipeline • Blowing/Escaping gas/Grade I leak	➢ Protect life & Property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Notify Fire/Emergency Responders ➢ Initiate Emergency Plan ➢ Locate source/cause of AOC ➢ Use appropriate PPE ➢ Stop gas flow ➢ Make repairs/eliminate AOC
Fire or Explosion • Fire on a pipeline • Explosion	➢ Protect life & Property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Notify Fire/Emergency Responders ➢ Initiate Emergency Plan ➢ Locate source/cause of AOC ➢ Use appropriate PPE ➢ Stop gas flow ➢ Make repairs/eliminate AOC
Unplanned Status Change • Inoperable/failure of a pipeline component (Rectifier) • Low structure-to-electrolyte potential • Stray current on a pipeline	➢ Protect life & property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC
Inadequate Odorization or Reports of Gas Odor • Low odorization • Over odorization • Odor complaint	➢ Protect life & property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC

Adopted: March, 2012
Revised: June, 2013

Task 0111 Maintain Rectifier

From ASME B31Q:

This task includes verification that the rectifier is functioning within specified parameters, after a rectifier has been hung and AC power connected, and prior to or during placing in service. This task also includes actions to repair or replace in service rectifiers or components.

1) Identify Requirements
2) Perform test equipment check
3) Test/troubleshoot rectifier
4) Repair or replace defective rectifier components
5) Place in service
6) Adjust output
7) Recognize & react to Abnormal Operating Conditions
8) Complete necessary documentation

Knowledge, skills, abilities and abnormal operating conditions for this task:

Knowledge of the properties of gas
Knowledge of ignition sources
Knowledge of the use and care of personal protective equipment
Knowledge of cathodic protection (CP) principals
Knowledge of basic electric principles (voltage, current, resistance, ohms law, etc.)
Knowledge in the use and care of cathodic protection instrumentation
Knowledge of cathodic protection rectifiers
Ability to operate digital volt and amp meters

Ability to recognize and react to the following abnormal operating conditions:

AOC Main Category & Examples of Specific AOCs	Reactions to AOC, as appropriate
Unplanned escape of product from a pipeline • Blowing/Escaping gas/Grade I leak	➢ Protect life & Property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Notify Fire/Emergency Responders ➢ Initiate Emergency Plan ➢ Locate source/cause of AOC ➢ Use appropriate PPE ➢ Stop gas flow ➢ Make repairs/eliminate AOC
Unplanned Status Change • Inoperable/failure of a pipeline component (T/S) • Low structure-to-electrolyte potential • Stray current on a pipeline – Electric shock	➢ Protect life & property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC
Inadequate Odorization or Reports of Gas Odor • Low odorization • Over odorization • Odor complaint	➢ Protect life & property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC

Adopted: March, 2012
Revised: June, 2013

Task 0141 Visual Inspection for Atmospheric Corrosion

From ASME B31Q:

Includes inspecting piping and components exposed to the atmosphere for the purpose of detecting atmospheric corrosion

1) Identify requirements
2) Inspect protective coating
3) Inspect for atmospheric corrosion
4) Recognize and react to AOCs
5) Complete necessary documentation

Knowledge, skills, abilities and abnormal operating conditions for this task:

Knowledge of the properties of gas
Knowledge of ignition sources
Knowledge of the use and care of personal protective equipment
Knowledge of the causes of atmospheric corrosion
Ability to Recognize Atmospheric Corrosion

Ability to recognize and react to the following abnormal operating conditions:

AOC Main Category & Examples of Specific AOCs	Reactions to AOC, as appropriate	
Unplanned escape of product from a pipeline • Blowing/Escaping gas/Grade I leak	➢ Protect life & Property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Notify Fire/Emergency Responders ➢ Initiate Emergency Plan	➢ Locate source/cause of AOC ➢ Use appropriate PPE ➢ Stop gas flow ➢ Make repairs/eliminate AOC
Fire or Explosion • Fire on a pipeline • Explosion	➢ Protect life & Property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Notify Fire/Emergency Responders ➢ Initiate Emergency Plan	➢ Locate source/cause of AOC ➢ Use appropriate PPE ➢ Stop gas flow ➢ Make repairs/eliminate AOC
Unplanned Status Change • Stray current on a pipeline	➢ Protect life & property ➢ Prevent accidental ignition ➢ Notify appropriate personnel	➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC
Inadequate Odorization or Reports of Gas Odor • Low odorization • Over odorization • Odor complaint	➢ Protect life & property ➢ Prevent accidental ignition ➢ Notify appropriate personnel	➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC

Adopted: March, 2012
Revised: June, 2013

Task 0151 Visual Inspection of Buried Pipe and Components When Exposed

From ASME B31Q:

Includes the inspection of buried pipe and pipe components when exposed for the purpose of detecting external corrosion and evaluating coating integrity

1) Identify requirements
2) Inspect protective coating
3) Inspect external surfaces of pipe and components
4) Recognize and react to AOCs
5) Complete necessary documentation

Knowledge, skills, abilities and abnormal operating conditions for this task:

Knowledge of the properties of gas
Knowledge of ignition sources
Knowledge of the use and care of personal protective equipment
Knowledge of the causes of corrosion

Ability to recognize and react to the following abnormal operating conditions:

AOC Main Category & Examples of Specific AOCs	Reactions to AOC, as appropriate
Unplanned escape of product from a pipeline • Blowing/Escaping gas/Grade I leak	➢ Protect life & Property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Notify Fire/Emergency Responders ➢ Initiate Emergency Plan ➢ Locate source/cause of AOC ➢ Use appropriate PPE ➢ Stop gas flow ➢ Make repairs/eliminate AOC
Fire or Explosion • Fire on a pipeline • Explosion	➢ Protect life & Property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Notify Fire/Emergency Responders ➢ Initiate Emergency Plan ➢ Locate source/cause of AOC ➢ Use appropriate PPE ➢ Stop gas flow ➢ Make repairs/eliminate AOC
Pipeline Damage • Coating Damage • Corrosion Damage • Dents, Gouges, Scrapes, etc.	➢ Protect life & Property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC
Inadequate Odorization or Reports of Gas Odor • Low odorization • Over odorization • Odor complaint	➢ Protect life & property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC

Adopted: March, 2012
Revised: June, 2013

Task 0161 Visual Inspection for Internal Corrosion

From ASME B31Q:

This task includes the inspection of the internal surface of pipe and pipeline components, including tapping coupons, when exposed for the purpose of detecting internal corrosion.

1) Identify Requirements
2) Inspect protective coating
3) Inspect internal surfaces of pipe, components and tapping coupons
4) Recognize & react to Abnormal Operating Conditions
5) Complete necessary documentation

Knowledge, skills, abilities and abnormal operating conditions for this task:

Knowledge of the properties of gas
Knowledge of ignition sources
Knowledge of the use and care of personal protective equipment
Knowledge of cathodic protection (CP) principals
Ability to spot active corrosion

Ability to recognize and react to the following abnormal operating conditions:

AOC Main Category & Examples of Specific AOCs	Reactions to AOC, as appropriate	
Unplanned escape of product from a pipeline • Blowing/Escaping gas/Grade I leak	➢ Protect life & Property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Notify Fire/Emergency Responders ➢ Initiate Emergency Plan	➢ Locate source/cause of AOC ➢ Use appropriate PPE ➢ Stop gas flow ➢ Make repairs/eliminate AOC
Fire or Explosion • Fire on a pipeline • Explosion	➢ Protect life & Property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Notify Fire/Emergency Responders ➢ Initiate Emergency Plan	➢ Locate source/cause of AOC ➢ Use appropriate PPE ➢ Stop gas flow ➢ Make repairs/eliminate AOC
Unplanned Status Change • Low structure-to-electrolyte potential • Stray current on a pipeline	➢ Protect life & property ➢ Prevent accidental ignition ➢ Notify appropriate personnel	➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC
Inadequate Odorization or Reports of Gas Odor • Low odorization • Over odorization • Odor complaint	➢ Protect life & property ➢ Prevent accidental ignition ➢ Notify appropriate personnel	➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC

Adopted: March, 2012
Revised: June, 2013

Task 0171 Measure External Corrosion

From ASME B31Q:

This task includes activities to measure and characterize external corrosion, including investigation to determine the extent of corrosion and recording data to determine corrective action.

1) Identify Requirements (procedures, practices, equipment, method)
2) Prepare surface
3) Perform test equipment check
4) Take measurements (Length, depth, width, thickness, etc.)
5) Identify characteristics of corrosion
6) Recognize & react to Abnormal Operating Conditions
7) Complete necessary documentation

Knowledge, skills, abilities and abnormal operating conditions for this task:

Knowledge of the properties of gas
Knowledge of ignition sources
Knowledge of the use and care of personal protective equipment
Knowledge of cathodic protection (CP) criteria
Knowledge of basic electric principles (voltage, current, resistance, ohms law, etc.)
Knowledge in the use and care of cathodic protection instrumentation
Ability to use equipment to take pipe-to-soil readings
Ability to measure metal loss

Ability to recognize and react to the following abnormal operating conditions:

AOC Main Category & Examples of Specific AOCs	Reactions to AOC, as appropriate	
Unplanned escape of product from a pipeline • Blowing/Escaping gas/Grade I leak	➢ Protect life & Property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Notify Fire/Emergency Responders ➢ Initiate Emergency Plan	➢ Locate source/cause of AOC ➢ Use appropriate PPE ➢ Stop gas flow ➢ Make repairs/eliminate AOC
Fire or Explosion • Fire on a pipeline • Explosion	➢ Protect life & Property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Notify Fire/Emergency Responders ➢ Initiate Emergency Plan	➢ Locate source/cause of AOC ➢ Use appropriate PPE ➢ Stop gas flow ➢ Make repairs/eliminate AOC
Unplanned Status Change • Low structure-to-electrolyte potential • Stray current on a pipeline	➢ Protect life & property ➢ Prevent accidental ignition ➢ Notify appropriate personnel	➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC
Inadequate Odorization or Reports of Gas Odor • Low odorization • Over odorization • Odor complaint	➢ Protect life & property ➢ Prevent accidental ignition ➢ Notify appropriate personnel	➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC

Adopted: March, 2012
Revised: June, 2013

Task 0181 Measure Internal Corrosion

From ASME B31Q:

This task includes activities to measure and characterize internal corrosion, including investigation to determine the extent of corrosion and recording data.

1) Identify requirements
2) Prepare surface
3) Perform test equipment check
4) Take measurements
5) Identify characteristics of corrosion
6) Recognize & react to Abnormal Operating Conditions
7) Complete necessary documentation

Knowledge, skills, abilities and abnormal operating conditions for this task:

Knowledge of the properties of gas
Knowledge of ignition sources
Knowledge of the use and care of personal protective equipment
Knowledge of cathodic protection (CP) principals
Knowledge of basic electric principles (voltage, current, resistance, ohms law, etc.)
Knowledge in the use and care of cathodic protection instrumentation
Ability to use equipment to measure pit depth
Ability to use equipment to measure pipe wall thickness
Ability to use equipment to take pipe-to-soil readings

Ability to recognize and react to the following abnormal operating conditions:

AOC Main Category & Examples of Specific AOCs	Reactions to AOC, as appropriate
Unplanned escape of product from a pipeline • Blowing/Escaping gas/Grade I leak	➢ Protect life & Property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Notify Fire/Emergency Responders ➢ Initiate Emergency Plan ➢ Locate source/cause of AOC ➢ Use appropriate PPE ➢ Stop gas flow ➢ Make repairs/eliminate AOC
Fire or Explosion • Fire on a pipeline • Explosion	➢ Protect life & Property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Notify Fire/Emergency Responders ➢ Initiate Emergency Plan ➢ Locate source/cause of AOC ➢ Use appropriate PPE ➢ Stop gas flow ➢ Make repairs/eliminate AOC
Unplanned Status Change • Low structure-to-electrolyte potential • Stray current on a pipeline	➢ Protect life & property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC
Inadequate Odorization or Reports of Gas Odor • Low odorization • Over odorization • Odor complaint	➢ Protect life & property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC

Adopted: March, 2012
Revised: June, 2013

Task 0191 Measure Atmospheric Corrosion

From ASME B31Q:

This task includes activities to measure and characterize atmospheric corrosion, including investigation to determine the extent of corrosion and recording data to determine corrective action.

1) Identify Requirements
2) Prepare surface
3) Perform test equipment check
4) Take measurements
5) Identify characteristics of corrosion
6) Recognize & react to Abnormal Operating Conditions
7) Complete necessary documentation

Knowledge, skills, abilities and abnormal operating conditions for this task:

Knowledge of the properties of gas
Knowledge of ignition sources
Knowledge of the use and care of personal protective equipment
Knowledge in the use and care of cathodic protection instrumentation
Knowledge of causes of atmospheric corrosion
Ability to recognize atmospheric corrosion
Ability to measure metal loss

Ability to recognize and react to the following abnormal operating conditions:

AOC Main Category & Examples of Specific AOCs	Reactions to AOC, as appropriate	
Unplanned escape of product from a pipeline • Blowing/Escaping gas/Grade I leak	➢ Protect life & Property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Notify Fire/Emergency Responders ➢ Initiate Emergency Plan	➢ Locate source/cause of AOC ➢ Use appropriate PPE ➢ Stop gas flow ➢ Make repairs/eliminate AOC
Fire or Explosion • Fire on a pipeline • Explosion	➢ Protect life & Property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Notify Fire/Emergency Responders ➢ Initiate Emergency Plan	➢ Locate source/cause of AOC ➢ Use appropriate PPE ➢ Stop gas flow ➢ Make repairs/eliminate AOC
Unplanned Status Change • Low structure-to-electrolyte potential • Stray current on a pipeline	➢ Protect life & property ➢ Prevent accidental ignition ➢ Notify appropriate personnel	➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC
Inadequate Odorization or Reports of Gas Odor • Low odorization • Over odorization • Odor complaint	➢ Protect life & property ➢ Prevent accidental ignition ➢ Notify appropriate personnel	➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC

Adopted: March, 2012
Revised: June, 2013

Valve Covered Tasks

Knowledge, Skills and Abilities
Abnormal Operation Conditions

Task 301 Manually Opening and Closing Valves

From ASME B31Q:

Includes manually opening and closing valves (e.g. pipeline start up and shutdown, flow direction, pigging, tank switching, etc.) at the valve site, either manually or using the valve actuator. It also includes valve identification, notification and pressure verification.

(1) Identify requirements
(2) Verify valve identification
(3) Identify segment(s) that requires manual valve operation
(4) Complete notifications
(5) Open and close valve
(6) Verify pressure
(7) Recognize and react to AOCs
(8) Complete necessary documentation

Knowledge, skills, abilities and abnormal operating conditions for this task:

Knowledge of the properties of gas
Knowledge of ignition sources
Knowledge of the use and care of personal protective equipment
Knowledge of the principles of operation of different types of valves
Skills in operating gas valves
Ability to read pipeline drawings and maps

Ability to recognize and react to the following abnormal operating conditions:

AOC Main Category & Examples of Specific AOCs	Reactions to AOC, as appropriate
Unplanned escape of product from a pipeline • Blowing/Escaping gas/Grade I leak	➢ Protect life & Property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Notify Fire/Emergency Responders ➢ Initiate Emergency Plan ➢ Locate source/cause of AOC ➢ Use appropriate PPE ➢ Stop gas flow ➢ Make repairs/eliminate AOC
Fire or Explosion • Fire on a pipeline • Explosion	➢ Protect life & Property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Notify Fire/Emergency Responders ➢ Initiate Emergency Plan ➢ Locate source/cause of AOC ➢ Use appropriate PPE ➢ Stop gas flow ➢ Make repairs/eliminate AOC
Unplanned Flow Rate Deviation • No Flow • Unplanned Decrease in Flow • Unplanned Increase in Flow	➢ Protect life & property ➢ Notify appropriate personnel ➢ Initiate Emergency Plan as Needed ➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC
Unplanned Status Change • Inoperable/Failure of a Pipeline Component • Stray Current on a Pipeline – Electric Shock	➢ Protect life & property ➢ Notify appropriate personnel ➢ Initiate Emergency Plan as Needed ➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC
Inadequate Odorization or Reports of Gas Odor • Low odorization • Over odorization • Odor complaint	➢ Protect life & property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC
Improper Installation/Misalignment of Components • Improper fitting/component installation • Misalignment of fittings/components	➢ Protect life & property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Make repairs/eliminate AOC

Adopted: March, 2012
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Task 0321 Valve Corrective Maintenance

From ASME B31Q:

This task includes the repair, replacement, alteration or refurbishment of valves, except valves for the temporary isolation of service lines and service discontinuance as addressed in CT 1251 – Maintenance of Service Valves Upstream of Customer Meters.

1) Identify Requirements
2) Verify valve identification
3) Perform valve corrective maintenance
4) Lubricate valve
5) Recognize and react to Abnormal Operating Conditions
6) Complete necessary documentation

Knowledge, skills, abilities and abnormal operating conditions for this task:

Knowledge of the properties of gas
Knowledge of ignition sources
Knowledge of the use and care of personal protective equipment
Knowledge of the operation and maintenance of different type of valves
Knowledge of MAOP of system
Knowledge of the appropriate lubricant and valve flush compounds
Ability to read pipeline drawing and maps
Ability to isolate line segments either side of valve if necessary

Ability to recognize and react to the following abnormal operating conditions:

AOC Main Category & Examples of Specific AOCs	Reactions to AOC, as appropriate
Unplanned escape of product from a pipeline • Blowing/Escaping gas/Grade I leak	➢ Protect life & Property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Notify Fire/Emergency Responders ➢ Initiate Emergency Plan ➢ Locate source/cause of AOC ➢ Use appropriate PPE ➢ Stop gas flow ➢ Make repairs/eliminate AOC
Fire or Explosion • Fire on a pipeline • Explosion	➢ Protect life & Property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Notify Fire/Emergency Responders ➢ Initiate Emergency Plan ➢ Locate source/cause of AOC ➢ Use appropriate PPE ➢ Stop gas flow ➢ Make repairs/eliminate AOC
Unplanned Flow Rate Deviation • No Flow • Unplanned Decrease in Flow • Unplanned Increase in Flow	➢ Protect life & property ➢ Notify appropriate personnel ➢ Initiate Emergency Plan as Needed ➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC
Unplanned Status Change • Inoperable/Failure of a Pipeline Component • Stray Current on a Pipeline – Electric Shock	➢ Protect life & property ➢ Notify appropriate personnel ➢ Initiate Emergency Plan as Needed ➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC
Inadequate Odorization or Reports of Gas Odor • Low odorization • Over odorization • Odor complaint	➢ Protect life & property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC
Improper Installation/Misalignment of Components • Improper fitting/component installation • Misalignment of fittings/components	➢ Protect life & property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Make repairs/eliminate AOC

Adopted: March, 2012
Revised: June, 2013

Task 331 Valves – Visual Inspection and Partial Operation

From ASME B31Q:

Includes visual inspection, partial operation (function test), and lubrication of valves, except valves for temporary isolation of service lines and service discontinuance.

(1) Identify requirements
(2) Verify identification of valves
(3) Visually inspect and partially operate (function test)
(4) Lubricate valve
(5) Recognize and react to AOC
(6) Complete necessary documentation

Knowledge, skills, abilities and abnormal operating conditions for this task:

Knowledge of the properties of gas
Knowledge of ignition sources
Knowledge of the use and care of personal protective equipment
Knowledge of the principles of operation of different types of valves
Skills in operating gas valves
Ability to read pipeline drawings and maps

Ability to recognize and react to the following abnormal operating conditions:

AOC Main Category & Examples of Specific AOCs	Reactions to AOC, as appropriate
Unplanned escape of product from a pipeline • Blowing/Escaping gas/Grade I leak	➢ Protect life & Property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Notify Fire/Emergency Responders ➢ Initiate Emergency Plan ➢ Locate source/cause of AOC ➢ Use appropriate PPE ➢ Stop gas flow ➢ Make repairs/eliminate AOC
Fire or Explosion • Fire on a pipeline • Explosion	➢ Protect life & Property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Notify Fire/Emergency Responders ➢ Initiate Emergency Plan ➢ Locate source/cause of AOC ➢ Use appropriate PPE ➢ Stop gas flow ➢ Make repairs/eliminate AOC
Unplanned Flow Rate Deviation • No Flow • Unplanned Decrease in Flow • Unplanned Increase in Flow	➢ Protect life & property ➢ Notify appropriate personnel ➢ Initiate Emergency Plan as Needed ➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC
Unplanned Status Change • Inoperable/Failure of a Pipeline Component • Stray Current on a Pipeline – Electric Shock	➢ Protect life & property ➢ Notify appropriate personnel ➢ Initiate Emergency Plan as Needed ➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC
Inadequate Odorization or Reports of Gas Odor • Low odorization • Over odorization • Odor complaint	➢ Protect life & property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC
Improper Installation/Misalignment of Components • Improper fitting/component installation • Misalignment of fittings/components	➢ Protect life & property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Make repairs/eliminate AOC

Adopted: March, 2012
Revised: June, 2013

Task 341 Valves – Preventive Maintenance

From ASME B31Q:

Encompasses actions (e.g., lubrication, winterization, packing adjustment, etc.), to keep valves operating safely and efficiently.

(1) Identify requirements
(2) Verify identification of valves
(3) Perform preventive maintenance
(4) Lubricate valve
(5) Recognize and react to AOC
(6) Complete necessary documentation

Knowledge, skills, abilities and abnormal operating conditions for this task:

Knowledge of the properties of gas
Knowledge of ignition sources
Knowledge of the use and care of personal protective equipment
Knowledge of the principles of operation of different types of valves
Skills in operating gas valves
Ability to read pipeline drawings and maps

Ability to recognize and react to the following abnormal operating conditions:

AOC Main Category & Examples of Specific AOCs	Reactions to AOC, as appropriate
Unplanned escape of product from a pipeline • Blowing/Escaping gas/Grade I leak	➢ Protect life & Property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Notify Fire/Emergency Responders ➢ Initiate Emergency Plan ➢ Locate source/cause of AOC ➢ Use appropriate PPE ➢ Stop gas flow ➢ Make repairs/eliminate AOC
Fire or Explosion • Fire on a pipeline • Explosion	➢ Protect life & Property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Notify Fire/Emergency Responders ➢ Initiate Emergency Plan ➢ Locate source/cause of AOC ➢ Use appropriate PPE ➢ Stop gas flow ➢ Make repairs/eliminate AOC
Unplanned Flow Rate Deviation • No Flow • Unplanned Decrease in Flow • Unplanned Increase in Flow	➢ Protect life & property ➢ Notify appropriate personnel ➢ Initiate Emergency Plan as Needed ➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC
Unplanned Status Change • Inoperable/Failure of a Pipeline Component • Stray Current on a Pipeline – Electric Shock	➢ Protect life & property ➢ Notify appropriate personnel ➢ Initiate Emergency Plan as Needed ➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC
Inadequate Odorization or Reports of Gas Odor • Low odorization • Over odorization • Odor complaint	➢ Protect life & property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC
Improper Installation/Misalignment of Components • Improper fitting/component installation • Misalignment of fittings/components	➢ Protect life & property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Make repairs/eliminate AOC

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Revised: June, 2013

Regulating Devices Covered Tasks

Knowledge, Skills and Abilities
Abnormal Operation Conditions

Task 0381 Spring Loaded Pressure Regulating Devices

From ASME B31Q:

Includes verification that the pressure-regulating device is functioning within specified parameters, after installation, and prior to or during placing in service. This task also includes the repair or replacement, alteration or refurbishment of pressure regulating devices, and actions to keep the pressure-regulating device operating safely and efficiently. This task excludes customer regulation. This task excludes B31Q 1161 and 1181.

(1) Identify requirements
(2) Verify identification
(3) Perform test equipment check
(4) Visually inspect
(5) Conduct performance test
(6) Perform preventive and corrective maintenance
(7) Verify MAOP –(Added by SIF)
(8) Adjust set point (s)
(9) Place in service
(10) Recognize and react to Abnormal Operating Conditions
(11) Complete necessary documentation

Knowledge, skills, abilities and abnormal operating conditions for this task:

Knowledge of properties of gas
Knowledge of ignition sources
Knowledge of use and care of personal protective equipment
Knowledge in the use and care of pressure measurement equipment
Knowledge of overpressure protection device operations
Knowledge of regulator operations
Knowledge of MAOP
Knowledge of confined space entry
Skills in using, inspecting, and calibrating pressure recording devices
Skills in using and inspecting pressure gauges
Skills in using and inspecting telemeter devices
Skills is basic pipe fitting
Ability to recognize atmospheric corrosion

Ability to recognize and react to the following abnormal operating conditions:

AOC Main Category & Examples of Specific AOCs	Reactions to AOC, as appropriate
Unplanned escape of product from a pipeline • Blowing/Escaping gas/Grade I leak	➢ Protect life & Property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Notify Fire/Emergency Responders ➢ Initiate Emergency Plan ➢ Locate source/cause of AOC ➢ Use appropriate PPE ➢ Stop gas flow ➢ Make repairs/eliminate AOC
Fire or Explosion • Fire on a pipeline • Explosion	➢ Protect life & Property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Notify Fire/Emergency Responders ➢ Initiate Emergency Plan ➢ Locate source/cause of AOC ➢ Use appropriate PPE ➢ Stop gas flow ➢ Make repairs/eliminate AOC
Unplanned Pressure Deviation • No Pressure • Unplanned Decrease in Pressure • Unplanned Increase in Pressure	➢ Protect life & property ➢ Notify appropriate personnel ➢ Initiate Emergency Plan as Needed ➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC
Activation of a Safety Device(s) other than planned testing • Emergency Shutdown • High Pressure Shutdown • High Temp. Shutdown • Pressure Relief Valve Relieving	➢ Protect life & Property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Notify Fire/Emergency Responders ➢ Initiate Emergency Plan, as needed ➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC
Unplanned Status Change • Inoperable/Failure of a Pipeline Component • Stray Current on a Pipeline – Electric Shock	➢ Protect life & property ➢ Notify appropriate personnel ➢ Initiate Emergency Plan as Needed ➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC
Inadequate Odorization or Reports of Gas Odor • Low odorization • Over odorization • Odor complaint	➢ Protect life & property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC
Improper Installation/Misalignment of Components • Improper fitting/component installation • Misalignment of fittings/components	➢ Protect life & property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Make repairs/eliminate AOC

Adopted: **March, 2012**
Revised: **July, 2013**

Task 0391 Pilot Operated Pressure Regulating Devices

From ASME B31Q:

Includes verification that the pressure-regulating device is functioning within specified parameters, after installation, and prior to or during placing in service. This task also includes the repair or replacement, alteration or refurbishment of pressure regulating devices, and actions to keep the pressure-regulating device operating safely and efficiently. This task excludes customer regulation. This task excludes B31Q 1161 and 1181.

(1) Identify requirements
(2) Verify identification
(3) Perform test equipment check
(4) Visually inspect
(5) Conduct performance test
(6) Perform preventive and corrective maintenance
(7) Verify MAOP – (Added by SIF)
(8) Adjust set point (s)
(9) Place in service
(10) Recognize and react to Abnormal Operating Conditions
(11) Complete necessary documentation

Knowledge, skills, abilities and abnormal operating conditions for this task:

Knowledge of properties of gas
Knowledge of ignition sources
Knowledge of use and care of personal protective equipment
Knowledge in the use and care of pressure measurement equipment
Knowledge of overpressure protection device operations
Knowledge of regulator operations
Knowledge of MAOP
Knowledge of confined space entry
Skills in using, inspecting, and calibrating pressures recording devices
Skills in using and inspecting pressure gauges
Skills in using and inspecting telemeter devices
Skills is basic pipe fitting
Ability to recognize atmospheric corrosion

Ability to recognize and react to the following abnormal operating conditions:

AOC Main Category & Examples of Specific AOCs	Reactions to AOC, as appropriate
Unplanned escape of product from a pipeline • Blowing/Escaping gas/Grade I leak	➢ Protect life & Property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Notify Fire/Emergency Responders ➢ Initiate Emergency Plan ➢ Locate source/cause of AOC ➢ Use appropriate PPE ➢ Stop gas flow ➢ Make repairs/eliminate AOC
Fire or Explosion • Fire on a pipeline • Explosion	➢ Protect life & Property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Notify Fire/Emergency Responders ➢ Initiate Emergency Plan ➢ Locate source/cause of AOC ➢ Use appropriate PPE ➢ Stop gas flow ➢ Make repairs/eliminate AOC
Unplanned Pressure Deviation • No Pressure • Unplanned Decrease in Pressure • Unplanned Increase in Pressure	➢ Protect life & property ➢ Notify appropriate personnel ➢ Initiate Emergency Plan as Needed ➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC
Activation of a Safety Device(s) other than planned testing • Emergency Shutdown • High Pressure Shutdown • High Temp. Shutdown • Pressure Relief Valve Relieving	➢ Protect life & Property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Notify Fire/Emergency Responders ➢ Initiate Emergency Plan, as needed ➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC
Unplanned Status Change • Inoperable/Failure of a Pipeline Component • Stray Current on a Pipeline – Electric Shock	➢ Protect life & property ➢ Notify appropriate personnel ➢ Initiate Emergency Plan as Needed ➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC
Inadequate Odorization or Reports of Gas Odor • Low odorization • Over odorization • Odor complaint	➢ Protect life & property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC
Improper Installation/Misalignment of Components • Improper fitting/component installation • Misalignment of fittings/components	➢ Protect life & property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Make repairs/eliminate AOC

Adopted: March, 2012
Revised: July, 2013

Task 0411 Spring Loaded Pressure Limiting and Relief Device

From ASME B31Q:

Includes verification that the pressure limiting or relief device is functioning within specified parameters, after installation, and prior to or during placing in service. This task also includes the repair or replacement, alteration or refurbishment of pressure limiting or relief device, and actions to keep the pressure limiting or relief device operating safely and efficiently. This task excludes customer regulation. This task excludes B31Q 1161 and 1181.

(1) Identify requirements
(2) Verify identification
(3) Perform test equipment check
(4) Visually inspect
(5) Conduct performance test
(6) Perform preventive and corrective maintenance
(7) Verify MAOP – (Added by SIF)
(8) Adjust set point (s)
(9) Place in service
(10) Recognize and react to Abnormal Operating Conditions
(11) Complete necessary documentation

Knowledge, skills, abilities and abnormal operating conditions for this task:

Knowledge of properties of gas
Knowledge of ignition sources
Knowledge of use and care of personal protective equipment
Knowledge in the use and care of pressure measurement equipment
Knowledge of overpressure protection device operations
Knowledge of regulator operations
Knowledge of MAOP
Knowledge of confined space entry
Skills in using, inspecting, and calibrating pressures recording devices
Skills in using and inspecting pressure gauges
Skills in using and inspecting telemeter devices
Skills is basic pipe fitting
Ability to recognize atmospheric corrosion

Ability to recognize and react to the following abnormal operating conditions:

AOC Main Category & Examples of Specific AOCs	Reactions to AOC, as appropriate
Unplanned escape of product from a pipeline • Blowing/Escaping gas/Grade I leak	➢ Protect life & Property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Notify Fire/Emergency Responders ➢ Initiate Emergency Plan ➢ Locate source/cause of AOC ➢ Use appropriate PPE ➢ Stop gas flow ➢ Make repairs/eliminate AOC
Fire or Explosion • Fire on a pipeline • Explosion	➢ Protect life & Property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Notify Fire/Emergency Responders ➢ Initiate Emergency Plan ➢ Locate source/cause of AOC ➢ Use appropriate PPE ➢ Stop gas flow ➢ Make repairs/eliminate AOC
Unplanned Pressure Deviation • No Pressure • Unplanned Decrease in Pressure • Unplanned Increase in Pressure	➢ Protect life & property ➢ Notify appropriate personnel ➢ Initiate Emergency Plan as Needed ➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC
Activation of a Safety Device(s) other than planned testing • Emergency Shutdown • High Pressure Shutdown • High Temp. Shutdown • Pressure Relief Valve Relieving	➢ Protect life & Property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Notify Fire/Emergency Responders ➢ Initiate Emergency Plan, as needed ➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC
Unplanned Status Change • Inoperable/Failure of a Pipeline Component • Stray Current on a Pipeline – Electric Shock	➢ Protect life & property ➢ Notify appropriate personnel ➢ Initiate Emergency Plan as Needed ➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC
Inadequate Odorization or Reports of Gas Odor • Low odorization • Over odorization • Odor complaint	➢ Protect life & property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC
Improper Installation/Misalignment of Components • Improper fitting/component installation • Misalignment of fittings/components	➢ Protect life & property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Make repairs/eliminate AOC

Adopted: March, 2012
Revised: July, 2013

Task 0421 Pilot Operated Pressure Limiting and Relief Device

From ASME B31Q:

Includes verification that the pressure limiting or relief device is functioning within specified parameters, after installation, and prior to or during placing in service. This task also includes the repair or replacement, alteration or refurbishment of pressure limiting or relief device, and actions to keep the pressure limiting or relief device operating safely and efficiently. This task excludes customer regulation. This task excludes B31Q 1161 and 1181.

(1) Identify requirements
(2) Verify identification
(3) Perform test equipment check
(4) Visually inspect
(5) Conduct performance test
(6) Perform preventive and corrective maintenance
(7) Verify MAOP –(Added by SIF)
(8) Adjust set point (s)
(9) Place in service
(10) Recognize and react to Abnormal Operating Conditions
(11) Complete necessary documentation

Knowledge, skills, abilities and abnormal operating conditions for this task:

Knowledge of properties of gas
Knowledge of ignition sources
Knowledge of use and care of personal protective equipment
Knowledge in the use and care of pressure measurement equipment
Knowledge of overpressure protection device operations
Knowledge of regulator operations
Knowledge of confined space entry
Skills in using, inspecting, and calibrating pressures recording devices
Skills in using and inspecting pressure gauges
Skills in using and inspecting telemeter devices
Skills is basic pipe fitting
Ability to recognize atmospheric corrosion

Ability to recognize and react to the following abnormal operating conditions:

AOC Main Category & Examples of Specific AOCs	Reactions to AOC, as appropriate
Unplanned escape of product from a pipeline • Blowing/Escaping gas/Grade I leak	➢ Protect life & Property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Notify Fire/Emergency Responders ➢ Initiate Emergency Plan ➢ Locate source/cause of AOC ➢ Use appropriate PPE ➢ Stop gas flow ➢ Make repairs/eliminate AOC
Fire or Explosion • Fire on a pipeline • Explosion	➢ Protect life & Property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Notify Fire/Emergency Responders ➢ Initiate Emergency Plan ➢ Locate source/cause of AOC ➢ Use appropriate PPE ➢ Stop gas flow ➢ Make repairs/eliminate AOC
Unplanned Pressure Deviation • No Pressure • Unplanned Decrease in Pressure • Unplanned Increase in Pressure	➢ Protect life & property ➢ Notify appropriate personnel ➢ Initiate Emergency Plan as Needed ➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC
Activation of a Safety Device(s) other than planned testing • Emergency Shutdown • High Pressure Shutdown • High Temp. Shutdown • Pressure Relief Valve Relieving	➢ Protect life & Property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Notify Fire/Emergency Responders ➢ Initiate Emergency Plan, as needed ➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC
Unplanned Status Change • Inoperable/Failure of a Pipeline Component • Stray Current on a Pipeline – Electric Shock	➢ Protect life & property ➢ Notify appropriate personnel ➢ Initiate Emergency Plan as Needed ➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC
Inadequate Odorization or Reports of Gas Odor • Low odorization • Over odorization • Odor complaint	➢ Protect life & property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC
Improper Installation/Misalignment of Components • Improper fitting/component installation • Misalignment of fittings/components	➢ Protect life & property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Make repairs/eliminate AOC

Adopted: March, 2012
Revised: July, 2013

Pressure Testing
Covered Tasks

Knowledge, Skills and Abilities
Abnormal Operation Conditions

Task 0561 Pressure Testing – Non-liquid Medium – MAOP Less than 100 psi

From ASME B31Q:

Includes achieving test pressure and durations, and record keeping.

(1) Identify test requirements
(2) Prepare for test
(3) Perform test (includes data analysis and check for leaks)
(4) Recognize and react to Abnormal Operating Conditions
(5) Complete necessary documentation

Knowledge, skills, abilities and abnormal operating conditions for this task:

Knowledge of properties of gas
Knowledge of ignition sources
Knowledge of use and care of personal protective equipment
Knowledge of MAOP
Knowledge of utilizing inert gas for testing
Knowledge of testing requirement, i.e. level and duration
Skills in using and inspecting pressure gauges including verification of calibration
Skills in basic pipe fitting
Ability to identify leakage
Ability to read gas system pipeline drawings and maps

Ability to recognize and react to the following abnormal operating conditions:

AOC Main Category & Examples of Specific AOCs	Reactions to AOC, as appropriate
Unplanned escape of product from a pipeline • Blowing/Escaping gas/Grade I leak	➢ Protect life & Property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Notify Fire/Emergency Responders ➢ Initiate Emergency Plan ➢ Locate source/cause of AOC ➢ Use appropriate PPE ➢ Stop gas flow ➢ Make repairs/eliminate AOC
Fire or Explosion • Fire on a pipeline • Explosion	➢ Protect life & Property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Notify Fire/Emergency Responders ➢ Initiate Emergency Plan ➢ Locate source/cause of AOC ➢ Use appropriate PPE ➢ Stop gas flow ➢ Make repairs/eliminate AOC
Unplanned Status Change • Inoperable/Failure of a Pipeline Component • Stray Current on a Pipeline – Electric Shock	➢ Protect life & property ➢ Notify appropriate personnel ➢ Initiate Emergency Plan as Needed ➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC
Inadequate Odorization or Reports of Gas Odor • Low odorization • Over odorization • Odor complaint	➢ Protect life & property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC

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Task 0571 Pressure Testing – Non-liquid Medium – MAOP Greater than or equal to 100 psi

From ASME B31Q:

Includes achieving test pressure and durations, and record keeping.

(1) Identify test requirements
(2) Prepare for test
(3) Perform test (includes data analysis and check for leaks)
(4) Recognize and react to Abnormal Operating Conditions
(5) Complete necessary documentation

Knowledge, skills, abilities and abnormal operating conditions for this task:

Knowledge of properties of gas
Knowledge of ignition sources
Knowledge of use and care of personal protective equipment
Knowledge of MAOP
Knowledge of utilizing inert gas for testing
Knowledge of testing requirement, i.e. level and duration
Knowledge of physical properties and material characteristics of pipe material
Skills in using and inspecting pressure gauges including verification of calibration
Skills in basic pipe fitting
Ability to identify leakage
Ability to read gas system pipeline drawings and maps

Ability to recognize and react to the following abnormal operating conditions:

AOC Main Category & Examples of Specific AOCs	Reactions to AOC, as appropriate
Unplanned escape of product from a pipeline • Blowing/Escaping gas/Grade I leak	➢ Protect life & Property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Notify Fire/Emergency Responders ➢ Initiate Emergency Plan ➢ Locate source/cause of AOC ➢ Use appropriate PPE ➢ Stop gas flow ➢ Make repairs/eliminate AOC
Fire or Explosion • Fire on a pipeline • Explosion	➢ Protect life & Property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Notify Fire/Emergency Responders ➢ Initiate Emergency Plan ➢ Locate source/cause of AOC ➢ Use appropriate PPE ➢ Stop gas flow ➢ Make repairs/eliminate AOC
Unplanned Status Change • Inoperable/Failure of a Pipeline Component • Stray Current on a Pipeline – Electric Shock	➢ Protect life & property ➢ Notify appropriate personnel ➢ Initiate Emergency Plan as Needed ➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC
Inadequate Odorization or Reports of Gas Odor • Low odorization • Over odorization • Odor complaint	➢ Protect life & property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC

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Task 0591 Leak Test at Operating Pressure

From ASME B31Q:

Includes the detection of leaks at operating pressure either visually, (e.g. soap test), or with use of leak detection equipment.

(1) Identify requirements
(2) Prepare test and check for leaks
(3) Recognize and react to Abnormal Operating Conditions
(4) Complete necessary documentation

Knowledge, skills, abilities and abnormal operating conditions for this task:

Knowledge of properties of gas
Knowledge of ignition sources
Knowledge of use and care of personal protective equipment
Ability to identify leakage
Ability to perform a soap test

Ability to recognize and react to the following abnormal operating conditions:

AOC Main Category & Examples of Specific AOCs	Reactions to AOC, as appropriate
Unplanned escape of product from a pipeline • Blowing/Escaping gas/Grade I leak	➢ Protect life & Property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Notify Fire/Emergency Responders ➢ Initiate Emergency Plan ➢ Locate source/cause of AOC ➢ Use appropriate PPE ➢ Stop gas flow ➢ Make repairs/eliminate AOC
Fire or Explosion • Fire on a pipeline • Explosion	➢ Protect life & Property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Notify Fire/Emergency Responders ➢ Initiate Emergency Plan ➢ Locate source/cause of AOC ➢ Use appropriate PPE ➢ Stop gas flow ➢ Make repairs/eliminate AOC
Unplanned Status Change • Inoperable/Failure of a Pipeline Component • Stray Current on a Pipeline – Electric Shock	➢ Protect life & property ➢ Notify appropriate personnel ➢ Initiate Emergency Plan as Needed ➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC
Inadequate Odorization or Reports of Gas Odor • Low odorization • Over odorization • Odor complaint	➢ Protect life & property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC

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Pipeline Installation Covered Tasks

Knowledge, Skills and Abilities Abnormal Operation Conditions

Task 0641 Visually Inspect Pipe and Components Prior to Installation

From ASME B31Q:

Includes the visual inspection of pipe and pipeline components, prior to installation, to identify visually determinable damage and defects.

(1) Identify requirements
(2) Prepare visual inspection
(3) Recognize and react to Abnormal Operating Conditions
(4) Complete necessary documentation

Knowledge, skills, abilities and abnormal operating conditions for this task:

Knowledge of characteristics of pipeline and component materials
Knowledge of material parameters and ratings
Knowledge of damage and defects affecting material integrity
Ability to recognize corrosion or other degradations
Ability to recognize defects or damages for pipe and pipeline component

Ability to recognize and react to the following abnormal operating conditions:

AOC Main Category & Examples of Specific AOCs	Reactions to AOC, as appropriate
Unplanned escape of product from a pipeline • Blowing/Escaping gas/Grade I leak	➢ Protect life & Property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Notify Fire/Emergency Responders ➢ Initiate Emergency Plan ➢ Locate source/cause of AOC ➢ Use appropriate PPE ➢ Stop gas flow ➢ Make repairs/eliminate AOC
Fire or Explosion • Fire on a pipeline • Explosion	➢ Protect life & Property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Notify Fire/Emergency Responders ➢ Initiate Emergency Plan ➢ Locate source/cause of AOC ➢ Use appropriate PPE ➢ Stop gas flow ➢ Make repairs/eliminate AOC
Pipeline Damage • Coating Damage • Corrosion Damage • Dents, Gouges, Scrapes, etc.	➢ Protect life & Property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC
Unplanned Status Change • Inoperable/Failure of a Pipeline Component • Stray Current on a Pipeline – Electric Shock	➢ Protect life & property ➢ Notify appropriate personnel ➢ Initiate Emergency Plan as Needed ➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC
Inadequate Odorization or Reports of Gas Odor • Low odorization • Over odorization • Odor complaint	➢ Protect life & property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC

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Task 0861 Installation of Steel Pipe in a Ditch

From ASME B31Q:

After excavation is completed, this task includes the handling, lowering in, and fitting of steel pipe in a ditch to assure firm support.

(1) Identify requirements
(2) Handle pipe to prevent damage
(3) Visually inspect ditch
(4) Inspect pipe coating during installation – (added by SIF)
(5) Install pipe with firm support to fit ditch
(6) Recognize and react to Abnormal Operating Conditions
(7) Complete necessary documentation

Knowledge, skills, abilities and abnormal operating conditions for this task:

Knowledge of the properties of gas
Knowledge of ignition sources
Knowledge of the use and care of personal protective equipment
Knowledge of excavation and shoring safety, including traffic control issues
Knowledge of the minimum requirement for depth and pipeline clearance from other structures
Knowledge of proper support of pipe including padding requirements
Knowledge of confined space entry
Knowledge of pipe coatings and inspection methods
Knowledge of proper pipe handling
Knowledge of how to protect exposed facilities and maintain markings
Ability to prevent damage to pipe and coating
Ability to inspect pipe coatings
Ability to read construction drawings

Ability to recognize and react to the following abnormal operating conditions:

AOC Main Category & Examples of Specific AOCs	Reactions to AOC, as appropriate
Unplanned escape of product from a pipeline • Blowing/Escaping gas/Grade I leak	➢ Protect life & Property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Notify Fire/Emergency Responders ➢ Initiate Emergency Plan ➢ Locate source/cause of AOC ➢ Use appropriate PPE ➢ Stop gas flow ➢ Make repairs/eliminate AOC
Fire or Explosion • Fire on a pipeline • Explosion	➢ Protect life & Property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Notify Fire/Emergency Responders ➢ Initiate Emergency Plan ➢ Locate source/cause of AOC ➢ Use appropriate PPE ➢ Stop gas flow ➢ Make repairs/eliminate AOC
Pipeline Damage • Coating Damage • Corrosion Damage • Dents, Gouges, Scrapes, etc.	➢ Protect life & Property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC
Unplanned Flow Rate Deviation • Unplanned Increase in Flow • Unplanned Decrease in Flow & or No Flow	➢ Protect life & property ➢ Notify appropriate personnel ➢ Initiate Emergency Plan as Needed ➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC
Unplanned Status Change • Inoperable/Failure of a Pipeline Component • Stray Current on a Pipeline – Electric Shock	➢ Protect life & property ➢ Notify appropriate personnel ➢ Initiate Emergency Plan as Needed ➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC
Inadequate Odorization or Reports of Gas Odor • Low odorization • Over odorization • Odor complaint	➢ Protect life & property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC

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Task 0871 Installation of Steel Pipe in a Bore

From ASME B31Q:

After boring is completed, this task includes the handling, pulling in and inspection of exposed pipe and coating.

(1) Identify requirements
(2) Handle pipe to prevent damage
(3) Inspect pipe to prevent pipe damage and coating damage
(4) Inspect pipe coating during installation
(5) Recognize and react to Abnormal Operating Conditions
(6) Complete necessary documentation

Knowledge, skills, abilities and abnormal operating conditions for this task:

Knowledge of the properties of gas
Knowledge of ignition sources
Knowledge of the use and care of personal protective equipment
Knowledge of excavation and shoring safety, including traffic control issues
Knowledge of the minimum requirement for depth and pipeline clearance from other structures
Knowledge of proper support of pipe including padding requirements
Knowledge of pipe coatings and inspection methods
Knowledge of proper pipe handling
Knowledge of how to protect exposed facilities and maintain markings
Ability to prevent damage to pipe and coating
Ability to inspect pipe coatings
Ability to read construction drawings

Ability to recognize and react to the following abnormal operating conditions:

AOC Main Category & Examples of Specific AOCs	Reactions to AOC, as appropriate
Unplanned escape of product from a pipeline • Blowing/Escaping gas/Grade I leak	➢ Protect life & Property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Notify Fire/Emergency Responders ➢ Initiate Emergency Plan ➢ Locate source/cause of AOC ➢ Use appropriate PPE ➢ Stop gas flow ➢ Make repairs/eliminate AOC
Fire or Explosion • Fire on a pipeline • Explosion	➢ Protect life & Property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Notify Fire/Emergency Responders ➢ Initiate Emergency Plan ➢ Locate source/cause of AOC ➢ Use appropriate PPE ➢ Stop gas flow ➢ Make repairs/eliminate AOC
Pipeline Damage • Coating Damage • Corrosion Damage • Dents, Gouges, Scrapes, etc.	➢ Protect life & Property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC
Unplanned Flow Rate Deviation • Unplanned Increase in Flow • Unplanned Decrease in Flow & or No Flow	➢ Protect life & property ➢ Notify appropriate personnel ➢ Initiate Emergency Plan as Needed ➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC
Unplanned Status Change • Inoperable/Failure of a Pipeline Component • Stray Current on a Pipeline – Electric Shock	➢ Protect life & property ➢ Notify appropriate personnel ➢ Initiate Emergency Plan as Needed ➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC
Inadequate Odorization or Reports of Gas Odor • Low odorization • Over odorization • Odor complaint	➢ Protect life & property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC

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Task 0901 Installation of Plastic Pipe in a Ditch

From ASME B31Q:

After excavation is completed, this task includes the handling, lowering in, and fitting of plastic pipe in a ditch to assure firm support.

(1) Identify requirements
(2) Handle pipe to prevent damage
(3) Visually inspect ditch
(4) Install pipe with firm support to fit ditch
(5) Recognize and react to Abnormal Operating Conditions
(6) Complete necessary documentation

Knowledge, skills, abilities and abnormal operating conditions for this task:

Knowledge of the properties of gas
Knowledge of ignition sources
Knowledge of the use and care of personal protective equipment
Knowledge of excavation and shoring safety, including traffic control issues
Knowledge of the minimum requirement for depth and pipeline clearance from other structures
Knowledge of proper support of pipe including padding requirements
Knowledge of proper tracer wire requirements
Knowledge of confined space entry
Knowledge of proper pipe handling
Knowledge of how to protect exposed facilities and maintain markings
Ability to prevent damage to pipe
Ability to read construction drawings

Ability to recognize and react to the following abnormal operating conditions:

AOC Main Category & Examples of Specific AOCs	Reactions to AOC, as appropriate
Unplanned escape of product from a pipeline • Blowing/Escaping gas/Grade I leak	➢ Protect life & Property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Notify Fire/Emergency Responders ➢ Initiate Emergency Plan ➢ Locate source/cause of AOC ➢ Use appropriate PPE ➢ Stop gas flow ➢ Make repairs/eliminate AOC
Fire or Explosion • Fire on a pipeline • Explosion	➢ Protect life & Property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Notify Fire/Emergency Responders ➢ Initiate Emergency Plan ➢ Locate source/cause of AOC ➢ Use appropriate PPE ➢ Stop gas flow ➢ Make repairs/eliminate AOC
Pipeline Damage • Coating Damage • Corrosion Damage • Dents, Gouges, Scrapes, etc.	➢ Protect life & Property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC
Unplanned Flow Rate Deviation • Unplanned Increase in Flow • Unplanned Decrease in Flow & or No Flow	➢ Protect life & property ➢ Notify appropriate personnel ➢ Initiate Emergency Plan as Needed ➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC
Unplanned Status Change • Inoperable/Failure of a Pipeline Component • Stray Current on a Pipeline – Static Electricity	➢ Protect life & property ➢ Notify appropriate personnel ➢ Initiate Emergency Plan as Needed ➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC
Inadequate Odorization or Reports of Gas Odor • Low odorization • Over odorization • Odor complaint	➢ Protect life & property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC

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Task 0911 Installation of Plastic Pipe in a Bore

From ASME B31Q:

After boring is completed, this task includes the handling, pulling in and inspection of exposed pipe.

(1) Identify requirements
(2) Handle pipe to prevent damage
(3) Inspect pipe to prevent pipe damage
(4) Inspect pipe during installation
(5) Recognize and react to Abnormal Operating Conditions
(6) Complete necessary documentation

Knowledge, skills, abilities and abnormal operating conditions for this task:

Knowledge of the properties of gas
Knowledge of ignition sources
Knowledge of the use and care of personal protective equipment
Knowledge of excavation and shoring safety, including traffic control issues
Knowledge of the minimum requirement for depth and pipeline clearance from other structures
Knowledge of proper support of pipe including padding requirements
Knowledge of proper tracer wire installation
Knowledge of proper techniques for pulling plastic pipe including weak links
Knowledge of pipe characteristics and material specifications
Knowledge of proper pipe handling
Knowledge of how to protect exposed facilities and maintain markings
Ability to prevent damage to pipe
Ability to read construction drawings

Ability to recognize and react to the following abnormal operating conditions:

AOC Main Category & Examples of Specific AOCs	Reactions to AOC, as appropriate
Unplanned escape of product from a pipeline • Blowing/Escaping gas/Grade I leak	➢ Protect life & Property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Notify Fire/Emergency Responders ➢ Initiate Emergency Plan ➢ Locate source/cause of AOC ➢ Use appropriate PPE ➢ Stop gas flow ➢ Make repairs/eliminate AOC
Fire or Explosion • Fire on a pipeline • Explosion	➢ Protect life & Property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Notify Fire/Emergency Responders ➢ Initiate Emergency Plan ➢ Locate source/cause of AOC ➢ Use appropriate PPE ➢ Stop gas flow ➢ Make repairs/eliminate AOC
Pipeline Damage • Coating Damage • Corrosion Damage • Dents, Gouges, Scrapes, etc.	➢ Protect life & Property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC
Unplanned Flow Rate Deviation • Unplanned Increase in Flow • Unplanned Decrease in Flow & or No Flow	➢ Protect life & property ➢ Notify appropriate personnel ➢ Initiate Emergency Plan as Needed ➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC
Unplanned Status Change • Inoperable/Failure of a Pipeline Component • Stray Current on a Pipeline – Static Electricity	➢ Protect life & property ➢ Notify appropriate personnel ➢ Initiate Emergency Plan as Needed ➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC
Inadequate Odorization or Reports of Gas Odor • Low odorization • Over odorization • Odor complaint	➢ Protect life & property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC

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Task 0921 Installation of Plastic Pipe Plowing/Pull-In

From ASME B31Q:

Includes the handling, plowing/pull-in of plastic pipe and inspection exposed pipe.

(1) Identify requirements
(2) Select pipe
(3) Handle pipe to prevent damage
(4) Install pipe to prevent pipe damage
(5) Recognize and react to Abnormal Operating Conditions
(6) Complete necessary documentation

Knowledge, skills, abilities and abnormal operating conditions for this task:

Knowledge of the properties of gas
Knowledge of ignition sources
Knowledge of the use and care of personal protective equipment
Knowledge of proper excavation skills for physical pipeline location
Knowledge of proper techniques for pulling plastic pipe including weak links
Knowledge of damage prevention requirements
Knowledge of the minimum requirements for proper depth and pipeline clearance from other structures
Knowledge of proper tracer wire installation
Knowledge of pipe characteristics and material specifications
Ability to recognize damaged pipe and potential sources of damage
Ability to read gas system pipeline drawings and maps

Ability to recognize and react to the following abnormal operating conditions:

AOC Main Category & Examples of Specific AOCs	Reactions to AOC, as appropriate
Unplanned escape of product from a pipeline • Blowing/Escaping gas/Grade I leak	➢ Protect life & Property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Notify Fire/Emergency Responders ➢ Initiate Emergency Plan ➢ Locate source/cause of AOC ➢ Use appropriate PPE ➢ Stop gas flow ➢ Make repairs/eliminate AOC
Fire or Explosion • Fire on a pipeline • Explosion	➢ Protect life & Property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Notify Fire/Emergency Responders ➢ Initiate Emergency Plan ➢ Locate source/cause of AOC ➢ Use appropriate PPE ➢ Stop gas flow ➢ Make repairs/eliminate AOC
Pipeline Damage • Coating Damage • Corrosion Damage • Dents, Gouges, Scrapes, etc.	➢ Protect life & Property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC
Unplanned Flow Rate Deviation • Unplanned Increase in Flow • Unplanned Decrease in Flow & or No Flow	➢ Protect life & property ➢ Notify appropriate personnel ➢ Initiate Emergency Plan as Needed ➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC
Unplanned Status Change • Inoperable/Failure of a Pipeline Component • Stray Current on a Pipeline – Static Electricity	➢ Protect life & property ➢ Notify appropriate personnel ➢ Initiate Emergency Plan as Needed ➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC
Inadequate Odorization or Reports of Gas Odor • Low odorization • Over odorization • Odor complaint	➢ Protect life & property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC

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Task 0931 Installation of Plastic Pipe Plowing/Planting

From ASME B31Q:

Includes the handling, plowing/planting of plastic pipe and inspection exposed pipe.

(1) Identify requirements
(2) Handle pipe to prevent damage
(3) Install pipe to prevent pipe damage
(4) Recognize and react to Abnormal Operating Conditions
(5) Complete necessary documentation

Knowledge, skills, abilities and abnormal operating conditions for this task:

Knowledge of the properties of gas
Knowledge of ignition sources
Knowledge of the use and care of personal protective equipment
Knowledge of proper excavation skills for physical pipeline location
Knowledge of proper techniques for plowing/planting plastic pipe
Knowledge of damage prevention requirements
Knowledge of the minimum requirements for proper depth and pipeline clearance from other structures
Knowledge of proper tracer wire installation
Knowledge of pipe characteristics and material specifications
Ability to recognize damaged pipe and potential sources of damage
Ability to read gas system pipeline drawings and maps

Ability to recognize and react to the following abnormal operating conditions:

AOC Main Category & Examples of Specific AOCs	Reactions to AOC, as appropriate
Unplanned escape of product from a pipeline • Blowing/Escaping gas/Grade I leak	➢ Protect life & Property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Notify Fire/Emergency Responders ➢ Initiate Emergency Plan ➢ Locate source/cause of AOC ➢ Use appropriate PPE ➢ Stop gas flow ➢ Make repairs/eliminate AOC
Fire or Explosion • Fire on a pipeline • Explosion	➢ Protect life & Property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Notify Fire/Emergency Responders ➢ Initiate Emergency Plan ➢ Locate source/cause of AOC ➢ Use appropriate PPE ➢ Stop gas flow ➢ Make repairs/eliminate AOC
Pipeline Damage • Coating Damage • Corrosion Damage • Dents, Gouges, Scrapes, etc.	➢ Protect life & Property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC
Unplanned Flow Rate Deviation • Unplanned Increase in Flow • Unplanned Decrease in Flow & or No Flow	➢ Protect life & property ➢ Notify appropriate personnel ➢ Initiate Emergency Plan as Needed ➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC
Unplanned Status Change • Inoperable/Failure of a Pipeline Component • Stray Current on a Pipeline – Static Electricity	➢ Protect life & property ➢ Notify appropriate personnel ➢ Initiate Emergency Plan as Needed ➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC
Inadequate Odorization or Reports of Gas Odor • Low odorization • Over odorization • Odor complaint	➢ Protect life & property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC

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Task 0941 Install Tracer Wire

From ASME B31Q:

Includes the installation of a tracer wire on plastic pipe including verification of tracer wire mechanical integrity and electrical continuity.

(1) Identify requirements
(2) Install tracer wire
(3) Verify mechanical integrity and electrical continuity
(4) Recognize and react to Abnormal Operating Conditions
(5) Complete necessary documentation

Knowledge, skills, abilities and abnormal operating conditions for this task:

Knowledge of the properties of gas
Knowledge of ignition sources
Knowledge of the use and care of personal protective equipment
Knowledge of tracer wire installation requirements
Ability to splice tracer wire and recoat with insulation

Ability to recognize and react to the following abnormal operating conditions:

AOC Main Category & Examples of Specific AOCs	Reactions to AOC, as appropriate
Unplanned escape of product from a pipeline • Blowing/Escaping gas/Grade I leak	➢ Protect life & Property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Notify Fire/Emergency Responders ➢ Initiate Emergency Plan ➢ Locate source/cause of AOC ➢ Use appropriate PPE ➢ Stop gas flow ➢ Make repairs/eliminate AOC
Fire or Explosion • Fire on a pipeline • Explosion	➢ Protect life & Property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Notify Fire/Emergency Responders ➢ Initiate Emergency Plan ➢ Locate source/cause of AOC ➢ Use appropriate PPE ➢ Stop gas flow ➢ Make repairs/eliminate AOC
Inadequate Odorization or Reports of Gas Odor • Low odorization • Over odorization • Odor complaint	➢ Protect life & property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC

Adopted: March, 2012
Revised: July, 2013

Task 0951 Installation of Pipe Above Ground

From ASME B31Q:

Includes the handling and installation of pipe above ground.

(1) Identify requirements
(2) Handle pipe to prevent damage
(3) Install pipe with specified support
(4) Install to protect pipe and coating
(5) Recognize and react to Abnormal Operating Conditions
(6) Complete necessary documentation

Knowledge, skills, abilities and abnormal operating conditions for this task:

Knowledge of the properties of gas
Knowledge of ignition sources
Knowledge of the use and care of personal protective equipment
Knowledge of basic pipe fittings, supports, anchors and expansion joints
Knowledge of proper pipe handling
Knowledge of protective measures from outside forces
Knowledge of soil compaction and subsidence Ability
to protect pipe and/or coating from damage Ability to
read gas system pipeline drawings and maps
Ability to install bolted insulated/unbolted insulated joints, bolted flanges and fitting, clamps and other mechanical fittings
Ability to identify proper types of fittings and material

Ability to recognize and react to the following abnormal operating conditions:

AOC Main Category & Examples of Specific AOCs	Reactions to AOC, as appropriate
Unplanned escape of product from a pipeline • Blowing/Escaping gas/Grade I leak	➢ Protect life & Property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Notify Fire/Emergency Responders ➢ Initiate Emergency Plan ➢ Locate source/cause of AOC ➢ Use appropriate PPE ➢ Stop gas flow ➢ Make repairs/eliminate AOC
Fire or Explosion • Fire on a pipeline • Explosion	➢ Protect life & Property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Notify Fire/Emergency Responders ➢ Initiate Emergency Plan ➢ Locate source/cause of AOC ➢ Use appropriate PPE ➢ Stop gas flow ➢ Make repairs/eliminate AOC
Pipeline Damage • Coating Damage • Corrosion Damage • Dents, Gouges, Scrapes, etc.	➢ Protect life & Property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC
Unplanned Status Change • Inoperable/Failure of a Pipeline Component • Stray Current on a Pipeline	➢ Protect life & property ➢ Notify appropriate personnel ➢ Initiate Emergency Plan as Needed ➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC
Inadequate Odorization or Reports of Gas Odor • Low odorization • Over odorization • Odor complaint	➢ Protect life & property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC

Adopted: March, 2012
Revised: July, 2013

Task 0961 Above Ground Supports and Anchors – Inspection, Preventive and Corrective Maintenance

From ASME B31Q:

Includes verification that the above ground supports and anchors are installed in accordance with specifications, prior to or during placing in service. This task also includes the repair or replacement, alteration, or refurbishment of above ground supports and anchors, and actions to keep the above ground supports and anchors functioning as specified.

(1) Identify requirements
(2) Visually inspect supports and anchors
(3) Perform preventive or corrective maintenance
(4) Recognize and react to Abnormal Operating Conditions
(5) Complete necessary documentation

Knowledge, skills, abilities and abnormal operating conditions for these tasks:

Knowledge of the properties of gas
Knowledge of ignition sources
Knowledge of the use and care of personal protective equipment
Knowledge of the impact of internal and external stresses
Knowledge of soil conditions and subsidence issues
Knowledge of insulated fittings
Knowledge of basic pipe fittings, supports, anchors and expansion joints
Ability to identify corrosion
Ability to read gas system pipeline drawings, specifications, and maps

Ability to recognize and react to the following abnormal operating conditions:

AOC Main Category & Examples of Specific AOCs	Reactions to AOC, as appropriate
Unplanned escape of product from a pipeline • Blowing/Escaping gas/Grade I leak	➢ Protect life & Property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Notify Fire/Emergency Responders ➢ Initiate Emergency Plan ➢ Locate source/cause of AOC ➢ Use appropriate PPE ➢ Stop gas flow ➢ Make repairs/eliminate AOC
Fire or Explosion • Fire on a pipeline • Explosion	➢ Protect life & Property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Notify Fire/Emergency Responders ➢ Initiate Emergency Plan ➢ Locate source/cause of AOC ➢ Use appropriate PPE ➢ Stop gas flow ➢ Make repairs/eliminate AOC
Pipeline Damage • Coating Damage • Corrosion Damage • Dents, Gouges, Scrapes, etc.	➢ Protect life & Property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC
Unplanned Pressure Deviation • No Pressure • Unplanned Decrease in Pressure • Unplanned Increase in Pressure	➢ Protect life & property ➢ Notify appropriate personnel ➢ Initiate Emergency Plan as Needed ➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC
Unplanned Status Change • Inoperable/Failure of a Pipeline Component • Stray Current on a Pipeline – Electric Shock	➢ Protect life & property ➢ Notify appropriate personnel ➢ Initiate Emergency Plan as Needed ➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC
Inadequate Odorization or Reports of Gas Odor • Low odorization • Over odorization • Odor complaint	➢ Protect life & property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC
Improper Installation/Misalignment of Components • Improper fitting/component installation • Misalignment of fittings/components	➢ Protect life & property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Make repairs/eliminate AOC

Adopted: March, 2012
Revised: July, 2013

Task 0971 Installation and Maintenance of Casing Spacers, Vents and Seals

From ASME B31Q:

Includes the installation of casing spacers, vents and seals. This task also includes the evaluation, repair or replacement, of casing vents and seals.

(1) Identify requirements
(2) Evaluate to determine if requirements are met
(3) Perform corrective maintenance
(4) Recognize and react to Abnormal Operating Conditions
(5) Complete necessary documentation

Knowledge, skills, abilities and abnormal operating conditions for these tasks:

Knowledge of the properties of gas
Knowledge of ignition sources
Knowledge of the use and care of personal protective equipment
Knowledge of cathodic protection
Knowledge of casing spacers, vents and seals
Knowledge of the use of insulators
Knowledge of spacing requirements
Ability to read gas system pipeline drawings, specifications, and maps

Ability to recognize and react to the following abnormal operating conditions:

AOC Main Category & Examples of Specific AOCs	Reactions to AOC, as appropriate
Unplanned escape of product from a pipeline • Blowing/Escaping gas/Grade I leak	➢ Protect life & Property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Notify Fire/Emergency Responders ➢ Initiate Emergency Plan ➢ Locate source/cause of AOC ➢ Use appropriate PPE ➢ Stop gas flow ➢ Make repairs/eliminate AOC
Fire or Explosion • Fire on a pipeline • Explosion	➢ Protect life & Property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Notify Fire/Emergency Responders ➢ Initiate Emergency Plan ➢ Locate source/cause of AOC ➢ Use appropriate PPE ➢ Stop gas flow ➢ Make repairs/eliminate AOC
Pipeline Damage • Coating Damage • Corrosion Damage • Dents, Gouges, Scrapes, etc.	➢ Protect life & Property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC
Unplanned Status Change • Inoperable/Failure of a Pipeline Component • Stray Current on a Pipeline – Electric Shock	➢ Protect life & property ➢ Notify appropriate personnel ➢ Initiate Emergency Plan as Needed ➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC
Inadequate Odorization or Reports of Gas Odor • Low odorization • Over odorization • Odor complaint	➢ Protect life & property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC
Improper Installation/Misalignment of Components • Improper fitting/component installation • Misalignment of fittings/components	➢ Protect life & property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Make repairs/eliminate AOC

Adopted: March, 2012
Revised: July, 2013

Task 0981 Backfilling

From ASME B31Q:

Includes visually inspecting backfill material, installation of pipe protective material (i.e. padding, shading, and rock shield), verification of firm support and placing backfill in lifts or layers as specified.

(1) Identify requirements
(2) Visually inspect backfill material
(3) Place material to provide firm support and protect pipe
(4) Recognize and react to Abnormal Operating Conditions
(5) Complete necessary documentation

Knowledge, skills, abilities and abnormal operating conditions for this task:

Knowledge of the properties of gas
Knowledge of ignition sources
Knowledge of the use and care of personal protective equipment
Knowledge of excavation and shoring safety
Knowledge of company standards for excavating equipment and backfill
Knowledge of minimum requirements for proper depth and clearance
Knowledge of appropriate and suitable backfill material
Knowledge of damage prevention requirements
Knowledge of proper support of pipe
Knowledge of tracer wire placement

Ability to recognize and react to the following abnormal operating conditions:

AOC Main Category & Examples of Specific AOCs	Reactions to AOC, as appropriate
Unplanned escape of product from a pipeline • Blowing/Escaping gas/Grade I leak	➢ Protect life & Property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Notify Fire/Emergency Responders ➢ Initiate Emergency Plan ➢ Locate source/cause of AOC ➢ Use appropriate PPE ➢ Stop gas flow ➢ Make repairs/eliminate AOC
Fire or Explosion • Fire on a pipeline • Explosion	➢ Protect life & Property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Notify Fire/Emergency Responders ➢ Initiate Emergency Plan ➢ Locate source/cause of AOC ➢ Use appropriate PPE ➢ Stop gas flow ➢ Make repairs/eliminate AOC
Pipeline Damage • Coating Damage • Corrosion Damage • Dents, Gouges, Scrapes, etc.	➢ Protect life & Property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC
Inadequate Odorization or Reports of Gas Odor • Low odorization • Over odorization • Odor complaint	➢ Protect life & property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC

Adopted: March, 2012
Revised: July, 2013

Pipeline Repair
Covered Tasks

Knowledge, Skills and Abilities
Abnormal Operation Conditions

Task 0201 Visual Inspection of Installed Pipe and Components for Mechanical Damage

From ASME B31Q:

Includes the inspection of installed pipe and components for the purpose of detecting mechanical damage (e.g. dents, gouges, cracks)

1) Identify requirements
2) Inspect protective coating
3) Inspect external surfaces of pipe and components
4) Recognize and react to AOCs
5) Complete necessary documentation

Knowledge, skills, abilities and abnormal operating conditions for this task:

Knowledge of the properties of gas
Knowledge of ignition sources
Knowledge of the use and care of personal protective equipment
Ability to recognize external corrosion

Ability to recognize and react to the following abnormal operating conditions:

AOC Main Category & Examples of Specific AOCs	Reactions to AOC, as appropriate
Unplanned escape of product from a pipeline • Blowing/Escaping gas/Grade I leak	➢ Protect life & Property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Notify Fire/Emergency Responders ➢ Initiate Emergency Plan ➢ Locate source/cause of AOC ➢ Use appropriate PPE ➢ Stop gas flow ➢ Make repairs/eliminate AOC
Fire or Explosion • Fire on a pipeline • Explosion	➢ Protect life & Property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Notify Fire/Emergency Responders ➢ Initiate Emergency Plan ➢ Locate source/cause of AOC ➢ Use appropriate PPE ➢ Stop gas flow ➢ Make repairs/eliminate AOC
Pipeline Damage • Coating Damage • Corrosion Damage • Dents, Gouges, Scrapes, etc.	➢ Protect life & Property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC
Inadequate Odorization or Reports of Gas Odor • Low odorization • Over odorization • Odor complaint	➢ Protect life & property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC

Adopted: March, 2012
Revised: July, 2013

Task 0681 Joining of Plastic Pipe – Stab Fittings

From ASME B31Q:

This task includes the joining and inspection of plastic pipe with stab fittings and inspection of completed joints.

1) Identify Requirements
2) Select fitting
3) Prepare pipe and fitting
4) Install fitting
5) Visually inspect completed joint
6) Recognize and react to Abnormal Operating Conditions
7) Complete necessary documentation

Knowledge, skills, abilities and abnormal operating conditions for this task:

Knowledge of the properties of gas
Knowledge of ignition sources
Knowledge of the use and care of personal protective equipment
Knowledge of requirements and use for various types of stab fittings
Knowledge of how to drain static charge from plastic pipe
Ability to install various types stab fittings

Ability to recognize and react to the following abnormal operating conditions:

AOC Main Category & Examples of Specific AOCs	Reactions to AOC, as appropriate
Unplanned escape of product from a pipeline • Blowing/Escaping gas/Grade I leak	➢ Protect life & Property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Notify Fire/Emergency Responders ➢ Initiate Emergency Plan ➢ Locate source/cause of AOC ➢ Use appropriate PPE ➢ Stop gas flow ➢ Make repairs/eliminate AOC
Fire or Explosion • Fire on a pipeline • Explosion	➢ Protect life & Property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Notify Fire/Emergency Responders ➢ Initiate Emergency Plan ➢ Locate source/cause of AOC ➢ Use appropriate PPE ➢ Stop gas flow ➢ Make repairs/eliminate AOC
Unplanned Status Change • Inoperable/Failure of a Pipeline Component • Stray Current on a Pipeline – Static Electricity	➢ Protect life & property ➢ Notify appropriate personnel ➢ Initiate Emergency Plan as Needed ➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC
Inadequate Odorization or Reports of Gas Odor • Low odorization • Over odorization • Odor complaint	➢ Protect life & property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC

Adopted: March, 2012
Revised: July, 2013

Task 0711 Joining of Pipe – Compression Couplings

From ASME B31Q:

This task includes the joining of pipe greater than 2 inch with compression coupling and inspection of completed joints.

1) Identify requirements
2) Select coupling
3) Prepare pipe and fitting
4) Install coupling
5) Visually inspect completed joint
6) Recognize and react to Abnormal Operating Conditions
7) Complete necessary documentation

Knowledge, skills, abilities and abnormal operating conditions for this task:

Knowledge of the properties of gas
Knowledge of ignition sources
Knowledge of the use and care of personal protective equipment
Knowledge of requirements and use for various types of compression coupling including tightening
Knowledge of basic cathodic protection principles
Knowledge of how to properly support pipeline around coupling to avoid stress or pullout
Knowledge of pipe and fitting coatings and inspection
Skill to select the most appropriate compression coupling for the application
Ability to apply the proper pipe and fitting protective coating
Ability to apply the specific torque to appropriately tighten the compression coupling

Ability to recognize and react to the following abnormal operating conditions:

AOC Main Category & Examples of Specific AOCs	Reactions to AOC, as appropriate
Unplanned escape of product from a pipeline • Blowing/Escaping gas/Grade I leak	➢ Protect life & Property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Notify Fire/Emergency Responders ➢ Initiate Emergency Plan ➢ Locate source/cause of AOC ➢ Use appropriate PPE ➢ Stop gas flow ➢ Make repairs/eliminate AOC
Fire or Explosion • Fire on a pipeline • Explosion	➢ Protect life & Property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Notify Fire/Emergency Responders ➢ Initiate Emergency Plan ➢ Locate source/cause of AOC ➢ Use appropriate PPE ➢ Stop gas flow ➢ Make repairs/eliminate AOC
Unplanned Status Change • Inoperable/Failure of a Pipeline Component • Stray Current on a Pipeline – Electric Shock	➢ Protect life & property ➢ Notify appropriate personnel ➢ Initiate Emergency Plan as Needed ➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC
Inadequate Odorization or Reports of Gas Odor • Low odorization • Over odorization • Odor complaint	➢ Protect life & property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC
Improper Installation/Misalignment of Components • Improper fitting/component installation • Misalignment of fittings/components	➢ Protect life & property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Make repairs/eliminate AOC

Adopted: March, 2012
Revised: July, 2013

Task 0721 Joining of Pipe – Threaded Joints

From ASME B31Q:

This task includes the joining of threaded pipe with treaded fittings, and the inspection of completed joints.

1) Identify requirements
2) Perform joining in accordance with requirements
3) Recognize & react to Abnormal Operating Conditions
4) Complete necessary documentation

Knowledge, skills, abilities and abnormal operating conditions for this task:

Knowledge of the properties of gas
Knowledge of ignition sources
Knowledge of the use and care of personal protective equipment
Knowledge of basic cathodic protection principles
Skill to recognize that pipe is properly treaded – not too long, too short, too deep etc.
Ability to apply the proper pipe wrap and protective fitting coating

Ability to recognize and react to the following abnormal operating conditions:

AOC Main Category & Examples of Specific AOCs	Reactions to AOC, as appropriate
Unplanned escape of product from a pipeline • Blowing/Escaping gas/Grade I leak	➢ Protect life & Property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Notify Fire/Emergency Responders ➢ Initiate Emergency Plan ➢ Locate source/cause of AOC ➢ Use appropriate PPE ➢ Stop gas flow ➢ Make repairs/eliminate AOC
Fire or Explosion • Fire on a pipeline • Explosion	➢ Protect life & Property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Notify Fire/Emergency Responders ➢ Initiate Emergency Plan ➢ Locate source/cause of AOC ➢ Use appropriate PPE ➢ Stop gas flow ➢ Make repairs/eliminate AOC
Unplanned Status Change • Inoperable/Failure of a Pipeline Component • Stray Current on a Pipeline – Electric Shock	➢ Protect life & property ➢ Notify appropriate personnel ➢ Initiate Emergency Plan as Needed ➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC
Inadequate Odorization or Reports of Gas Odor • Low odorization • Over odorization • Odor complaint	➢ Protect life & property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC
Improper Installation/Misalignment of Components • Improper fitting/component installation • Misalignment of fittings/components	➢ Protect life & property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Make repairs/eliminate AOC

Adopted: May, 2008
Revised: July, 2013

Task 0731 Joining of Pipe – Flange Assembly

From ASME B31Q:

This task includes the assembly of flanges, bolting in sequence and torqueing.

1) Identify requirements
2) Prepare flange surface
3) Install gasket
4) Align flanges
5) Install fasteners
6) Tighten fasteners (in specified sequence to specified torque)
7) Visually inspect completed joint
8) Recognize and react to Abnormal Operating Conditions
9) Complete necessary documentation

Knowledge, skills, abilities and abnormal operating conditions for this task:

Knowledge of the properties of gas
Knowledge of ignition sources
Knowledge of the use and care of personal protective equipment
Knowledge of requirements and use for various types of flanges, gaskets, and fasteners
Knowledge of required pressure ratings for materials
Knowledge of basic cathodic protection principles
Knowledge of how to properly support and align pipeline to avoid stress
Ability to apply the proper pipe and fitting protective coating
Ability to apply the specific torque, in sequence to appropriately tighten the flange

Ability to recognize and react to the following abnormal operating conditions:

AOC Main Category & Examples of Specific AOCs	Reactions to AOC, as appropriate
Unplanned escape of product from a pipeline • Blowing/Escaping gas/Grade I leak	➢ Protect life & Property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Notify Fire/Emergency Responders ➢ Initiate Emergency Plan ➢ Locate source/cause of AOC ➢ Use appropriate PPE ➢ Stop gas flow ➢ Make repairs/eliminate AOC
Fire or Explosion • Fire on a pipeline • Explosion	➢ Protect life & Property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Notify Fire/Emergency Responders ➢ Initiate Emergency Plan ➢ Locate source/cause of AOC ➢ Use appropriate PPE ➢ Stop gas flow ➢ Make repairs/eliminate AOC
Unplanned Status Change • Inoperable/Failure of a Pipeline Component • Stray Current on a Pipeline – Electric Shock	➢ Protect life & property ➢ Notify appropriate personnel ➢ Initiate Emergency Plan as Needed ➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC
Inadequate Odorization or Reports of Gas Odor • Low odorization • Over odorization • Odor complaint	➢ Protect life & property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC
Improper Installation/Misalignment of Components • Improper fitting/component installation • Misalignment of fittings/components	➢ Protect life & property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Make repairs/eliminate AOC

Adopted: May, 2008
Revised: July, 2013

Task 0991 Coating Application and Repair – Brushed or Rolled

From ASME B31Q:

Includes the surface preparation and application or repair of coatings using a brush or roller. This task includes painting to inhibit corrosion, and internal or external applications of coatings, on pipes, tanks, etc.

(10) Identify requirements
(11) Prepare surface
(12) Apply coating
(13) Inspect coating
(14) Recognize and react to Abnormal Operating Conditions
(15) If required, complete documentation

Knowledge, skills, abilities and abnormal operating conditions for these tasks:

Knowledge of the properties of gas
Knowledge of ignition sources
Knowledge of the use and care of personal protective equipment
Knowledge of coating material and characteristics
Knowledge of the causes of corrosion
Ability to prepare surface for coatings
Ability to apply mastic coatings
Ability to check product container label

Ability to recognize and react to the following abnormal operating conditions:

AOC Main Category & Examples of Specific AOCs	Reactions to AOC, as appropriate
Unplanned escape of product from a pipeline • Blowing/Escaping gas/Grade I leak	➢ Protect life & Property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Notify Fire/Emergency Responders ➢ Initiate Emergency Plan ➢ Locate source/cause of AOC ➢ Use appropriate PPE ➢ Stop gas flow ➢ Make repairs/eliminate AOC
Fire or Explosion • Fire on a pipeline • Explosion	➢ Protect life & Property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Notify Fire/Emergency Responders ➢ Initiate Emergency Plan ➢ Locate source/cause of AOC ➢ Use appropriate PPE ➢ Stop gas flow ➢ Make repairs/eliminate AOC
Pipeline Damage • Coating Damage • Corrosion Damage • Dents, Gouges, Scrapes, etc.	➢ Protect life & Property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC
Unplanned Status Change • Inoperable/Failure of a Pipeline Component • Stray Current on a Pipeline – Electric Shock	➢ Protect life & property ➢ Notify appropriate personnel ➢ Initiate Emergency Plan as Needed ➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC
Inadequate Odorization or Reports of Gas Odor • Low odorization • Over odorization • Odor complaint	➢ Protect life & property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC
Improper Installation/Misalignment of Components • Improper fitting/component installation • Misalignment of fittings/components	➢ Protect life & property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Make repairs/eliminate AOC

Adopted: March, 2012
Revised: July, 2013

Task 1001 Coating Application and Repair – Sprayed

From ASME B31Q:

This task includes the surface preparation and application or repair of coatings using a sprayer. This task includes painting to inhibit corrosion, and internal or external applications of coatings, on pipes, tanks, etc.

1) Identify requirements
2) Prepare surface
3) Apply coating
4) Inspect coating
5) Recognize and react to Abnormal Operating Conditions
6) Complete necessary documentation

Knowledge, skills, abilities and abnormal operating conditions for this task:

Knowledge of the properties of gas
Knowledge of ignition sources
Knowledge of the use and care of personal protective equipment
Knowledge of proper mixing and spraying techniques for various coatings
Knowledge of proper techniques for preparing the pipe to accept coating
Knowledge of the appropriate drying/curing times between applications
Skill to use spray equipment to ensure even coat and with an appropriate thickness
Skill to measure coating thickness
Ability to recognize proper coating

Ability to recognize and react to the following abnormal operating conditions:

AOC Main Category & Examples of Specific AOCs	Reactions to AOC, as appropriate
Unplanned escape of product from a pipeline • Blowing/Escaping gas/Grade I leak	➢ Protect life & Property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Notify Fire/Emergency Responders ➢ Initiate Emergency Plan ➢ Locate source/cause of AOC ➢ Use appropriate PPE ➢ Stop gas flow ➢ Make repairs/eliminate AOC
Fire or Explosion • Fire on a pipeline • Explosion	➢ Protect life & Property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Notify Fire/Emergency Responders ➢ Initiate Emergency Plan ➢ Locate source/cause of AOC ➢ Use appropriate PPE ➢ Stop gas flow ➢ Make repairs/eliminate AOC
Pipeline Damage • Coating Damage • Corrosion Damage • Dents, Gouges, Scrapes, etc.	➢ Protect life & Property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC
Unplanned Status Change • Inoperable/Failure of a Pipeline Component • Stray Current on a Pipeline – Electric Shock	➢ Protect life & property ➢ Notify appropriate personnel ➢ Initiate Emergency Plan as Needed ➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC
Inadequate Odorization or Reports of Gas Odor • Low odorization • Over odorization • Odor complaint	➢ Protect life & property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC
Improper Installation/Misalignment of Components • Improper fitting/component installation • Misalignment of fittings/components	➢ Protect life & property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Make repairs/eliminate AOC

Adopted: March, 2012
Revised: July, 2013

Task 1011 External Coating Application and Repair - Wrapped

From ASME B31Q:

Includes the surface preparation and application or repair of coatings using a wrap.

(1) Identify requirements
(2) Prepare surface
(3) Apply coating
(4) Inspect coating
(5) Recognize and react to Abnormal Operating Conditions
(6) If required, complete documentation

Knowledge, skills, abilities and abnormal operating conditions for these tasks:

Knowledge of the properties of gas
Knowledge of ignition sources
Knowledge of the use and care of personal protective equipment
Knowledge of causes of corrosion
Knowledge of coating material and characteristics
Ability to prepare surface for coating
Ability to apply tape coatings

Ability to recognize and react to the following abnormal operating conditions:

AOC Main Category & Examples of Specific AOCs	Reactions to AOC, as appropriate
Unplanned escape of product from a pipeline • Blowing/Escaping gas/Grade I leak	➢ Protect life & Property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Notify Fire/Emergency Responders ➢ Initiate Emergency Plan ➢ Locate source/cause of AOC ➢ Use appropriate PPE ➢ Stop gas flow ➢ Make repairs/eliminate AOC
Fire or Explosion • Fire on a pipeline • Explosion	➢ Protect life & Property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Notify Fire/Emergency Responders ➢ Initiate Emergency Plan ➢ Locate source/cause of AOC ➢ Use appropriate PPE ➢ Stop gas flow ➢ Make repairs/eliminate AOC
Pipeline Damage • Coating Damage • Corrosion Damage • Dents, Gouges, Scrapes, etc.	➢ Protect life & Property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC
Unplanned Status Change • Inoperable/Failure of a Pipeline Component • Stray Current on a Pipeline – Electric Shock	➢ Protect life & property ➢ Notify appropriate personnel ➢ Initiate Emergency Plan as Needed ➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC
Inadequate Odorization or Reports of Gas Odor • Low odorization • Over odorization • Odor complaint	➢ Protect life & property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC
Improper Installation/Misalignment of Components • Improper fitting/component installation • Misalignment of fittings/components	➢ Protect life & property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Make repairs/eliminate AOC

Adopted: March, 2012
Revised: July, 2013

Task 1041 Install Mechanical Clamps and Sleeves - Bolted

From ASME B31Q:

Includes the preparation, installation and inspection of bolted mechanical clamps and sleeves.

(1) Identify requirements
(2) Select and prepare clamp or sleeve
(3) Prepare pipe for installation of clamp or sleeve
(4) Install clamp or sleeve
(5) Recognize and react to Abnormal Operating Conditions
(6) Complete necessary documentation

Knowledge, skills, abilities and abnormal operating conditions for this task:

Knowledge of the properties of gas
Knowledge of ignition sources
Knowledge of the use and care of personal protective equipment
Knowledge of bolted joints
Knowledge of the material properties and installation of bolt sleeves
Knowledge of properties of piping material
Knowledge of MAOP
Knowledge of the installation and repair of bolted sleeves and clamps
Knowledge of basic corrosion principles
Knowledge of proper support and alignment after repair and backfilling
Ability to install and repair bolted sleeves and clamps
Ability to recognize corrosion or graphitization

Ability to recognize and react to the following abnormal operating conditions:

AOC Main Category & Examples of Specific AOCs	Reactions to AOC, as appropriate
Unplanned escape of product from a pipeline • Blowing/Escaping gas/Grade I leak	➢ Protect life & Property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Notify Fire/Emergency Responders ➢ Initiate Emergency Plan ➢ Locate source/cause of AOC ➢ Use appropriate PPE ➢ Stop gas flow ➢ Make repairs/eliminate AOC
Fire or Explosion • Fire on a pipeline • Explosion	➢ Protect life & Property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Notify Fire/Emergency Responders ➢ Initiate Emergency Plan ➢ Locate source/cause of AOC ➢ Use appropriate PPE ➢ Stop gas flow ➢ Make repairs/eliminate AOC
Pipeline Damage • Coating Damage • Corrosion Damage • Dents, Gouges, Scrapes, etc.	➢ Protect life & Property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC
Unplanned Status Change • Inoperable/Failure of a Pipeline Component • Stray Current on a Pipeline – Electric Shock	➢ Protect life & property ➢ Notify appropriate personnel ➢ Initiate Emergency Plan as Needed ➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC
Inadequate Odorization or Reports of Gas Odor • Low odorization • Over odorization • Odor complaint	➢ Protect life & property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC
Improper Installation/Misalignment of Components • Improper fitting/component installation • Misalignment of fittings/components	➢ Protect life & property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Make repairs/eliminate AOC

Adopted: March, 2012
Revised: July, 2013

Task 1141 Squeeze Off Plastic Pipe

From ASME B31Q:

Includes the squeeze off of plastic pipe. This also includes the selection, installation and removal of squeeze off tools.

(1) Identify requirements
(2) Verify segment(s) that requires squeeze off
(3) Complete notifications
(4) Install squeezer
(5) Squeeze pipe
(6) Monitor pressure
(7) Release and remove squeezer
(8) Mark squeeze point on pipe (9)
Recognize and react to AOCs
(10)Complete necessary documentation

Knowledge, skills, abilities and abnormal operating conditions for this task:

Knowledge of the properties of gas
Knowledge of ignition sources
Knowledge of the use and care of personal protective equipment
Knowledge of gas migration
Knowledge of special safety issues involved in blowing gas (static charge in plastic pipe, control of ignition sources, blowing gas near structures, electric power facilities)
Ability to operate tools per manufacturer's procedures
Ability to read gas system pipeline drawings and maps
Ability to follow plastic pipe manufacturer's procedures
Ability to use fire protection equipment

Ability to recognize and react to the following abnormal operating conditions:

AOC Main Category & Examples of Specific AOCs	Reactions to AOC, as appropriate
Unplanned escape of product from a pipeline • Blowing/Escaping gas/Grade I leak	➢ Protect life & Property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Notify Fire/Emergency Responders ➢ Initiate Emergency Plan ➢ Locate source/cause of AOC ➢ Use appropriate PPE ➢ Stop gas flow ➢ Make repairs/eliminate AOC
Fire or Explosion • Fire on a pipeline • Explosion	➢ Protect life & Property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Notify Fire/Emergency Responders ➢ Initiate Emergency Plan ➢ Locate source/cause of AOC ➢ Use appropriate PPE ➢ Stop gas flow ➢ Make repairs/eliminate AOC
Pipeline Damage • Coating Damage • Corrosion Damage • Dents, Gouges, Scrapes, etc.	➢ Protect life & Property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC
Unplanned Status Change • Inoperable/Failure of a Pipeline Component • Stray Current on a Pipeline – Static Electricity	➢ Protect life & property ➢ Notify appropriate personnel ➢ Initiate Emergency Plan as Needed ➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC
Inadequate Odorization or Reports of Gas Odor • Low odorization • Over odorization • Odor complaint	➢ Protect life & property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC

Adopted: March, 2012
Revised: July, 2013

Task 1151 Squeeze Off Steel Pipe

From ASME B31Q**:**

This task includes the squeeze off of steel pipe. This also includes the selection, installation and removal of squeeze off tools and monitoring pressure to assure system pressure requirements are maintained.

1) Identify requirements
2) Verify segment(s) that requires squeeze off
3) Complete notifications
4) Install squeezer
5) Squeeze pipe
6) Monitor pressure
7) Release and remove squeezer
8) Mark squeeze point on pipe
9) Recognize and react to Abnormal Operating Conditions
10) Complete necessary documentation

Knowledge, skills, abilities and abnormal operating conditions for this task:

Knowledge of the properties of gas
Knowledge of ignition sources
Knowledge of the use and care of personal protective equipment
Knowledge of operation of the hydraulic squeeze off equipment being used
Knowledge that squeezed steel must be replaced and is only a temporary shut down method
Knowledge of pipeline MAOP and operating pressures
Knowledge of proper purging techniques
Skill to properly use specific squeeze off equipment to obtain seal without splitting pipe
Skill at reading pressure gauges/recorders
Ability to operate fire protection equipment effectively
Ability to lift heavy objects/operate lifting equipment

Ability to recognize and react to the following abnormal operating conditions:

AOC Main Category & Examples of Specific AOCs	Reactions to AOC, as appropriate
Unplanned escape of product from a pipeline • Blowing/Escaping gas/Grade I leak	➢ Protect life & Property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Notify Fire/Emergency Responders ➢ Initiate Emergency Plan ➢ Locate source/cause of AOC ➢ Use appropriate PPE ➢ Stop gas flow ➢ Make repairs/eliminate AOC
Fire or Explosion • Fire on a pipeline • Explosion	➢ Protect life & Property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Notify Fire/Emergency Responders ➢ Initiate Emergency Plan ➢ Locate source/cause of AOC ➢ Use appropriate PPE ➢ Stop gas flow ➢ Make repairs/eliminate AOC
Pipeline Damage • Coating Damage • Corrosion Damage • Dents, Gouges, Scrapes, etc.	➢ Protect life & Property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC
Unplanned Status Change • Inoperable/Failure of a Pipeline Component • Stray Current on a Pipeline – Static Electricity	➢ Protect life & property ➢ Notify appropriate personnel ➢ Initiate Emergency Plan as Needed ➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC
Inadequate Odorization or Reports of Gas Odor • Low odorization • Over odorization • Odor complaint	➢ Protect life & property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC

Adopted: March, 2012
Revised: July, 2013

Tapping
Covered Tasks

Knowledge, Skills and Abilities
Abnormal Operation Conditions

Task 1101 Tapping a Pipeline With a Built-In Cutter

From ASME B31Q:

Includes tapping a pipe with an installed fitting that contains a built-in cutter.
(1) Identify requirements
(2) Perform the tap
(3) Isolate the tap
(4) Recognize and react to AOCs
(5) Complete necessary documentation

Knowledge, skill, abilities and abnormal operating conditions for this task:

Knowledge of the properties of gas
Knowledge of ignition sources
Knowledge of the use and care of personal protective equipment
Knowledge of piping material
Knowledge of MAOP
Skills in using and inspecting pressure gauges and pressure recording charts
Skills in basic pipe fittings
Skills in operating gas valves
Ability to operate tapping/stopping equipment according to manufacturer's procedures
Ability to read gas systems pipeline drawings and maps
Ability to use fire protection equipment

Ability to recognize and react to the following abnormal operating conditions:

AOC Main Category & Examples of Specific AOCs	Reactions to AOC, as appropriate
Unplanned escape of product from a pipeline • Blowing/Escaping gas/Grade I leak	➢ Protect life & Property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Notify Fire/Emergency Responders ➢ Initiate Emergency Plan ➢ Locate source/cause of AOC ➢ Use appropriate PPE ➢ Stop gas flow ➢ Make repairs/eliminate AOC
Fire or Explosion • Fire on a pipeline • Explosion	➢ Protect life & Property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Notify Fire/Emergency Responders ➢ Initiate Emergency Plan ➢ Locate source/cause of AOC ➢ Use appropriate PPE ➢ Stop gas flow ➢ Make repairs/eliminate AOC
Pipeline Damage • Coating Damage • Corrosion Damage • Dents, Gouges, Scrapes, etc.	➢ Protect life & Property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC
Unplanned Status Change • Inoperable/Failure of a Pipeline Component • Stray Current on a Pipeline – Electric Shock	➢ Protect life & property ➢ Notify appropriate personnel ➢ Initiate Emergency Plan as Needed ➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC
Inadequate Odorization or Reports of Gas Odor • Low odorization • Over odorization • Odor complaint	➢ Protect life & property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC
Improper Installation/Misalignment of Components • Improper fitting/component installation • Misalignment of fittings/components	➢ Protect life & property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Make repairs/eliminate AOC

Adopted: March, 2012
Revised: June, 2013

Meter Sets Covered Tasks

Knowledge, Skills and Abilities
Abnormal Operation Conditions

Task 1161 Installation of Customer Meters and Regulators – Residential and Small Commercial

From ASME B31Q:

Includes locating, and hanging/setting the meter and regulator. Attaching a meter bracket does not require qualification as long as a qualified individual completes the installation in accordance with the steps in this task. Proving the integrity of customer piping and lighting customer utilization equipment is not included.

(1) Identify requirements
(2) Identify meter(s) and regulator(s) to be installed
(3) Identify meter and regulator installation location
(4) Install or verify the installation of the meter bracket
(5) Install meter(s) and regulator(s)
(6) Install relief device as specified
(7) Recognize and react to Abnormal Operating Conditions
(8) Complete necessary documentation

Knowledge, skills, abilities and abnormal operating conditions for this task:

Knowledge of the properties of gas
Knowledge of ignition sources
Knowledge of the use and care of personal protective equipment
Knowledge of measurement principles
Knowledge of regulator principles
Knowledge of types of meters
Knowledge of proper meter handling
Knowledge of types of regulators
Knowledge of proper meter locations and protection
Knowledge of CP insulators and fittings
Knowledge of proper relief and regulator venting
Skills in basic pipe fittings

Ability to recognize and react to the following abnormal operating conditions:

AOC Main Category & Examples of Specific AOCs	Reactions to AOC, as appropriate	
Unplanned escape of product from a pipeline • Blowing/Escaping gas/Grade I leak	➢ Protect life & Property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Notify Fire/Emergency Responders ➢ Initiate Emergency Plan	➢ Locate source/cause of AOC ➢ Use appropriate PPE ➢ Stop gas flow ➢ Make repairs/eliminate AOC
Unplanned Flow Rate Deviation • Unplanned Increase in Flow • Unplanned Decrease in Flow & or No Flow	➢ Protect life & property ➢ Notify appropriate personnel ➢ Initiate Emergency Plan as Needed	➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC
Unplanned Status Change • Inoperable/Failure of a Pipeline Component • Stray Current on a Pipeline – Electric Shock	➢ Protect life & property ➢ Notify appropriate personnel ➢ Initiate Emergency Plan as Needed	➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC
Inadequate Odorization or Reports of Gas Odor • Low odorization • Over odorization • Odor complaint	➢ Protect life & property ➢ Prevent accidental ignition ➢ Notify appropriate personnel	➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC
Improper Installation/Misalignment of Components • Improper fitting/component installation • Misalignment of fittings/components	➢ Protect life & property ➢ Prevent accidental ignition	➢ Notify appropriate personnel ➢ Make repairs/eliminate AOC

Adopted: March, 2012
Revised: March, 2013

Task 1171 Installation of Customer Meters – Large Commercial and Industrial

From ASME B31Q:

Includes locating, and hanging/setting the meter. Attaching a meter bracket does not require qualification as long as a qualified individual completes the installation in accordance with the steps in this task. Proving the integrity of customer piping and lighting customer utilization equipment is not included.

(1) Identify requirements
(2) Identify meter(s) to be installed
(3) Identify meter installation location
(4) Install meter(s)
(5) Recognize and react to Abnormal Operating Conditions
(6) Complete necessary documentation

Knowledge, skills, abilities and abnormal operating conditions for this task:

Knowledge of properties of gas
Knowledge of ignition sources
Knowledge of use and care of personal protective equipment
Knowledge of basic measurement principles
Knowledge of types of meters
Knowledge of proper meter set locations and protection
Knowledge of bypass operations
Knowledge of mechanical fittings, flanges etc.
Knowledge of proper meter set alignment
Knowledge of meter set protection
Knowledge of CP insulators and fittings
Knowledge of proper meter handling
Skills in basic pipe fittings
Ability to read construction drawings and pipeline maps

Ability to recognize and react to the following abnormal operating conditions:

AOC Main Category & Examples of Specific AOCs	Reactions to AOC, as appropriate	
Unplanned escape of product from a pipeline • Blowing/Escaping gas/Grade I leak	➢ Protect life & Property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Notify Fire/Emergency Responders ➢ Initiate Emergency Plan	➢ Locate source/cause of AOC ➢ Use appropriate PPE ➢ Stop gas flow ➢ Make repairs/eliminate AOC
Unplanned Flow Rate Deviation • Unplanned Increase in Flow • Unplanned Decrease in Flow & or No Flow	➢ Protect life & property ➢ Notify appropriate personnel ➢ Initiate Emergency Plan as Needed	➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC
Unplanned Status Change • Inoperable/Failure of a Pipeline Component • Stray Current on a Pipeline – Electric Shock	➢ Protect life & property ➢ Notify appropriate personnel ➢ Initiate Emergency Plan as Needed	➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC
Inadequate Odorization or Reports of Gas Odor • Low odorization • Over odorization • Odor complaint	➢ Protect life & property ➢ Prevent accidental ignition ➢ Notify appropriate personnel	➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC
Improper Installation/Misalignment of Components • Improper fitting/component installation • Misalignment of fittings/components	➢ Protect life & property ➢ Prevent accidental ignition	➢ Notify appropriate personnel ➢ Make repairs/eliminate AOC

Adopted: March, 2012
Revised: March, 2013

Task 1181 Installing and Maintaining Customer Pressure Regulating, Limiting and Relief Device – Large Commercial and Industrial

From ASME B31Q

Includes installing and maintaining pressure regulating, limiting and relief device. It also includes locating vent and installation of vent piping

(1) Identify requirements
(2) Visually inspect customer pressure regulating, limiting and relief devices
(3) Test customer pressure regulating and limiting devices
(4) Test customer relief devices
(5) Install or maintain customer pressure regulating, limiting and relief devices
(6) Check and adjust operating pressure set point(s) of customer pressure regulating, limiting and relief devices
(7) Recognize and react to AOCs
(8) Complete necessary documentation

Knowledge, skills and abilities and abnormal operating conditions for this task:

Knowledge of properties of gas
Knowledge of ignition sources
Knowledge of use and care of personal protective equipment
Knowledge in the use and care of pressure measurement equipment
Knowledge of overpressure protection device operations
Knowledge of regulator station operations, if applicable
Knowledge of regulator operations
Knowledge of bypass operations
Knowledge of proper regulating, relief device and venting locations
Knowledge of MAOP
Knowledge of basic pipe fitting and supporting
Knowledge of CP insulators and fittings
Knowledge of basic corrosion principles
Knowledge of confined space entry
Skills in using, inspecting, and calibrating pressure recording devices
Skills in using and inspecting pressure gauges
Skills in using and inspecting telemeter devices
Skills in basic pipe fitting
Ability to recognize corrosion

Ability to recognize and react to the following abnormal operating conditions:

AOC Main Category & Examples of Specific AOCs	Reactions to AOC, as appropriate
Unplanned escape of product from a pipeline • Blowing/Escaping gas/Grade I leak	➢ Protect life & Property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Notify Fire/Emergency Responders ➢ Initiate Emergency Plan ➢ Locate source/cause of AOC ➢ Use appropriate PPE ➢ Stop gas flow ➢ Make repairs/eliminate AOC
Unplanned Status Change • Inoperable/Failure of a Pipeline Component • Stray Current on a Pipeline – Electric Shock	➢ Protect life & property ➢ Notify appropriate personnel ➢ Initiate Emergency Plan as Needed ➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC
Inadequate Odorization or Reports of Gas Odor • Low odorization • Over odorization • Odor complaint	➢ Protect life & property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC
Improper Installation/Misalignment of Components • Improper fitting/component installation • Misalignment of fittings/components	➢ Protect life & property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Make repairs/eliminate AOC

Adopted: March, 2012
Revised: March, 2013

Task 1191 Maintenance of Service Valves Upstream of Customer Meter

From ASME B31Q:

This task includes removing, replacing and maintaining service valves upstream of customer meter.

1) Identify requirements
2) Visually inspect
3) Maintain (lubricate, etc.)
4) Isolate valve
5) Remove and replace valve
6) Recognize and react to Abnormal Operating Conditions
7) Complete necessary documentation

Knowledge, skills, abilities and abnormal operating conditions for this task:

Knowledge of the properties of gas
Knowledge of ignition sources
Knowledge of the use and care of personal protective equipment Knowledge of operation and maintenance of different type of service valves Knowledge to how operation of service valve arrangement may impact customer Knowledge of various types of lubricants for servicing valves
Ability to use basic hand tools

Ability to recognize and react to the following abnormal operating conditions:

AOC Main Category & Examples of Specific AOCs	Reactions to AOC, as appropriate
Unplanned escape of product from a pipeline • Blowing/Escaping gas/Grade I leak	➢ Protect life & Property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Notify Fire/Emergency Responders ➢ Initiate Emergency Plan ➢ Locate source/cause of AOC ➢ Use appropriate PPE ➢ Stop gas flow ➢ Make repairs/eliminate AOC
Unplanned Flow Rate Deviation • Unplanned Increase in Flow • Unplanned Decrease in Flow & or No Flow	➢ Protect life & property ➢ Notify appropriate personnel ➢ Initiate Emergency Plan as Needed ➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC
Unplanned Status Change • Inoperable/Failure of a Pipeline Component • Stray Current on a Pipeline – Electric Shock	➢ Protect life & property ➢ Notify appropriate personnel ➢ Initiate Emergency Plan as Needed ➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC
Inadequate Odorization or Reports of Gas Odor • Low odorization • Over odorization • Odor complaint	➢ Protect life & property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC
Improper Installation/Misalignment of Components • Improper fitting/component installation • Misalignment of fittings/components	➢ Protect life & property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Make repairs/eliminate AOC

Adopted: March, 2012
Revised: March, 2013

Task 1201 Temporary Isolation of Service Lines and Service Discontinuance

From ASME B31Q:

Includes closing and locking service valves upstream of the customer meter or installation of a mechanical device or fitting to prevent the flow of gas.

(2) Identify requirements
(3) Discontinue service or isolate service line
(4) Recognize and react to Abnormal Operating Conditions
(5) If required, complete documentation

Knowledge, skills, abilities and abnormal operating conditions for these tasks:

Knowledge of properties of gas
Knowledge of ignition sources
Knowledge of the use and care of personal protective equipment
Knowledge of locking devices
Ability to install locking device properly

Ability to recognize and react to the following abnormal operating conditions:

AOC Main Category & Examples of Specific AOCs	Reactions to AOC, as appropriate
Unplanned escape of product from a pipeline • Blowing/Escaping gas/Grade I leak	➢ Protect life & Property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Notify Fire/Emergency Responders ➢ Initiate Emergency Plan ➢ Locate source/cause of AOC ➢ Use appropriate PPE ➢ Stop gas flow ➢ Make repairs/eliminate AOC
Unplanned Status Change • Inoperable/Failure of a Pipeline Component • Stray Current on a Pipeline – Electric Shock	➢ Protect life & property ➢ Notify appropriate personnel ➢ Initiate Emergency Plan as Needed ➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC
Inadequate Odorization or Reports of Gas Odor • Low odorization • Over odorization • Odor complaint	➢ Protect life & property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC

Adopted: March, 2012
Revised: March, 2013

Odorization Covered Tasks

Knowledge, Skills and Abilities
Abnormal Operation Conditions

Task 1211 Odorization - Periodic Sampling

From ASME B31Q:

Includes the periodic sampling of gas to verify concentration of odorant by use of instrumentation or verification of odor presence by sniff test

1) Identify requirements
2) Perform odorometer test
3) Recognize and react to AOCs
4) Complete necessary documentation

Knowledge, skills, abilities and abnormal operating conditions for this task:

Knowledge of the properties of gas
Knowledge of ignition sources
Knowledge of the use and care of personal protective equipment
Knowledge of proper odorant concentrations
Ability to smell odorant at a normal level.
Ability to use odorant testing equipment (if applicable – not required for sniff tests)
Ability to properly connect equipment to sampling point (if applicable)

Ability to recognize and react to the following abnormal operating conditions:

AOC Main Category & Examples of Specific AOCs	Reactions to AOC, as appropriate
Unplanned escape of product from a pipeline • Blowing/Escaping gas/Grade I leak	➢ Protect life & Property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Notify Fire/Emergency Responders ➢ Initiate Emergency Plan ➢ Locate source/cause of AOC ➢ Use appropriate PPE ➢ Stop gas flow ➢ Make repairs/eliminate AOC
Unplanned Status Change • Inoperable/Failure of a Pipeline Component • Stray Current on a Pipeline – Electric Shock	➢ Protect life & property ➢ Notify appropriate personnel ➢ Initiate Emergency Plan as Needed ➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC
Inadequate Odorization or Reports of Gas Odor • Low odorization • Over odorization • Odor complaint	➢ Protect life & property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC

Adopted: February, 2006
Revised: March, 2013

Task 1221 Odorization – Odorizer Inspection, Testing, Preventive and Corrective Maintenance

From ASME B31Q:

Includes the verification that the odorizer is functioning within specified parameters, after installation or replacement, and prior to or during placing in service. This task includes the repair, replacement, alteration or refurbishment of the odorizer, and actions to keep the odorizer operating safely and efficiently.

1) Identify requirements
2) Perform test equipment check
3) Visually inspect odorizer
4) Evaluate odorizer
5) Perform preventive or corrective maintenance
6) Check odorant concentration
7) Adjust odorant output
8) Recognize and react to Abnormal Operating Conditions
9) Complete necessary documentation

Knowledge, skills, abilities and abnormal operating conditions for this task:

Knowledge of the properties of gas
Knowledge of ignition sources
Knowledge of the use and care of personal protection equipment
Knowledge of proper odorant concentrations
Knowledge of safety procedures when handling odorant
Knowledge of operation and maintenance of odorizer
Ability to inspect, operate and maintain an odorizer

Ability to recognize and react to the following abnormal operating conditions:

AOC Main Category & Examples of Specific AOCs	Reactions to AOC, as appropriate
Unplanned escape of product from a pipeline • Blowing/Escaping gas/Grade I leak	➢ Protect life & Property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Notify Fire/Emergency Responders ➢ Initiate Emergency Plan ➢ Locate source/cause of AOC ➢ Use appropriate PPE ➢ Stop gas flow ➢ Make repairs/eliminate AOC
Unplanned Flow Rate Deviation • Unplanned Increase in Flow • Unplanned Decrease in Flow & or No Flow	➢ Protect life & property ➢ Notify appropriate personnel ➢ Initiate Emergency Plan as Needed ➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC
Unplanned Status Change • Inoperable/Failure of a Pipeline Component • Stray Current on a Pipeline – Electric Shock	➢ Protect life & property ➢ Notify appropriate personnel ➢ Initiate Emergency Plan as Needed ➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC
Inadequate Odorization or Reports of Gas Odor • Low odorization • Over odorization • Odor complaint	➢ Protect life & property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC

Adopted: February, 2008
Revised: March, 2013

Leak Investigation Covered Tasks

Knowledge, Skills and Abilities
Abnormal Operation Conditions

Task 1231 Inside Gas Leak Investigation

From ASME B31Q:

Includes the investigation of reported or discovered leaks of Operators lines inside building in relation to emergency response. This also includes initiation of precautionary actions (make safe). Repairing and proving the integrity of customer piping and lighting customer utilization equipment is not included.

(1) Identify requirements
(2) Perform test equipment check
(3) Perform leakage investigation
(4) Initiate precautionary actions
(5) Recognize and react to AOCs
(6) Complete necessary documentation

Knowledge, skills, abilities and abnormal operating conditions for this task:

Knowledge of the properties of gas
Knowledge of ignition sources
Knowledge of the use and care of personal protective equipment and fire protection equipment
Knowledge of gas migration
Knowledge of leak classification criteria
Knowledge and skills to perform a gas leak investigation to include understanding and usage of leak detection equipment (e.g. CGI, FI, etc.), gas in sewer, gas in duct and pinpointing.
Knowledge of make safe procedures.
Knowledge of carbon monoxide testing
Ability to conduct a bar hole leak investigation (for Outside Gas Leak Investigation)

Ability to recognize and react to the following abnormal operating conditions:

AOC Main Category & Examples of Specific AOCs	Reactions to AOC, as appropriate
Unplanned escape of product from a pipeline • Blowing/Escaping gas/Grade I leak	➢ Protect life & Property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Notify Fire/Emergency Responders ➢ Initiate Emergency Plan ➢ Locate source/cause of AOC ➢ Use appropriate PPE ➢ Stop gas flow ➢ Make repairs/eliminate AOC
Fire or Explosion • Fire on a pipeline • Explosion	➢ Protect life & Property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Notify Fire/Emergency Responders ➢ Initiate Emergency Plan ➢ Locate source/cause of AOC ➢ Use appropriate PPE ➢ Stop gas flow ➢ Make repairs/eliminate AOC
Unplanned Pressure Deviation • Unplanned Decrease in Pressure & or No Press. • Unplanned Increase in Pressure	➢ Protect life & property ➢ Notify appropriate personnel ➢ Initiate Emergency Plan as Needed ➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC
Unplanned Flow Rate Deviation • Unplanned Increase in Flow • Unplanned Decrease in Flow & or No Flow	➢ Protect life & property ➢ Notify appropriate personnel ➢ Initiate Emergency Plan as Needed ➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC
Unplanned Status Change • Inoperable/Failure of a Pipeline Component • Stray Current on a Pipeline – Electric Shock	➢ Protect life & property ➢ Notify appropriate personnel ➢ Initiate Emergency Plan as Needed ➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC
Inadequate Odorization or Reports of Gas Odor • Low odorization • Over odorization & or Odor complaint	➢ Protect life & property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC
Improper Installation/Misalignment of Components • Improper fitting/component installation • Misalignment of fittings/components	➢ Protect life & property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Make repairs/eliminate AOC

Adopted: March, 2012
Revised: July, 2013

Task 1241 Outside Gas Leak Investigation

From ASME B31Q:

Includes the investigation of reported or discovered outside leaks of the Operators lines. This also includes initiation of precautionary actions (make safe).

(1) Identify requirements
(2) Perform test equipment check
(3) Perform leakage investigation
(4) Initiate precautionary actions
(5) Visually inspect area of leakage
(6) Determine leak spread
(7) Grade (classify) the leak
(8) Complete necessary documentation

Knowledge, skills, abilities and abnormal operating conditions for this task:

Knowledge of the properties of gas
Knowledge of ignition sources
Knowledge of the use and care of personal protective equipment and fire protection equipment
Knowledge of gas migration
Knowledge of leak classification criteria
Knowledge and skills to perform a gas leak investigation to include understanding and usage of leak detection equipment (e.g. CGI, FI, etc.), gas in sewer, gas in duct and pinpointing.
Knowledge of make safe procedures.
Knowledge of vegetation growth for leak indication
Ability to conduct a bar hole leak investigation (for Outside Gas Leak Investigation)

Ability to recognize and react to the following abnormal operating conditions:

AOC Main Category & Examples of Specific AOCs	Reactions to AOC, as appropriate
Unplanned escape of product from a pipeline • Blowing/Escaping gas/Grade I leak	➢ Protect life & Property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Notify Fire/Emergency Responders ➢ Initiate Emergency Plan ➢ Locate source/cause of AOC ➢ Use appropriate PPE ➢ Stop gas flow ➢ Make repairs/eliminate AOC
Fire or Explosion • Fire on a pipeline • Explosion	➢ Protect life & Property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Notify Fire/Emergency Responders ➢ Initiate Emergency Plan ➢ Locate source/cause of AOC ➢ Use appropriate PPE ➢ Stop gas flow ➢ Make repairs/eliminate AOC
Unplanned Pressure Deviation • Unplanned Decrease in Pressure & or No Press. • Unplanned Increase in Pressure	➢ Protect life & property ➢ Notify appropriate personnel ➢ Initiate Emergency Plan as Needed ➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC
Unplanned Flow Rate Deviation • Unplanned Increase in Flow • Unplanned Decrease in Flow & or No Flow	➢ Protect life & property ➢ Notify appropriate personnel ➢ Initiate Emergency Plan as Needed ➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC
Unplanned Status Change • Inoperable/Failure of a Pipeline Component • Stray Current on a Pipeline – Electric Shock	➢ Protect life & property ➢ Notify appropriate personnel ➢ Initiate Emergency Plan as Needed ➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC
Inadequate Odorization or Reports of Gas Odor • Low odorization • Over odorization & or Odor complaint	➢ Protect life & property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC
Improper Installation/Misalignment of Components • Improper fitting/component installation • Misalignment of fittings/components	➢ Protect life & property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Make repairs/eliminate AOC

Adopted: March, 2012
Revised: July, 2013

Task 1261 Walking Gas Leakage Survey

From ASME B31Q:

Includes conducting a walking gas leak survey utilizing gas detection survey equipment, documentation, and reporting an emergency condition.

(1) Identify requirements
(2) Perform test equipment check
(3) Perform survey
(4) Recognize and react to Abnormal Operating Conditions
(5) Complete necessary documentation

Knowledge, skills, abilities and abnormal operating conditions for this task: Knowledge of the properties of gas and other hydrocarbons
Knowledge of ignition sources
Knowledge of the use and care of personal protective equipment
Knowledge of gas migration
Knowledge of documentation and requirements for reporting an emergency condition
Knowledge to recognize the presence of other underground utilities
Knowledge of leak classification criteria
Knowledge of leak detection equipment used including calibration and maintenance
Knowledge and skills to perform a gas leak survey to include understanding usage of leak detection equipment, gas in sewer, gas in duct and pinpointing
Knowledge of pipeline location
Knowledge of make safe procedures
Knowledge of visual leak indicators
Ability to use leak detection equipment
Ability to conduct a barhole leak investigation
Ability to conduct a leakage survey utilizing available openings and pinpoint leak sources
Ability to read gas system pipeline drawings and maps

Ability to recognize and react to the following abnormal operating conditions:

AOC Main Category & Examples of Specific AOCs	Reactions to AOC, as appropriate
Unplanned escape of product from a pipeline • Blowing/Escaping gas/Grade I leak	➢ Protect life & Property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Notify Fire/Emergency Responders ➢ Initiate Emergency Plan ➢ Locate source/cause of AOC ➢ Use appropriate PPE ➢ Stop gas flow ➢ Make repairs/eliminate AOC
Fire or Explosion • Fire on a pipeline • Explosion	➢ Protect life & Property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Notify Fire/Emergency Responders ➢ Initiate Emergency Plan ➢ Locate source/cause of AOC ➢ Use appropriate PPE ➢ Stop gas flow ➢ Make repairs/eliminate AOC
Unplanned Pressure Deviation • Unplanned Decrease in Pressure & or No Press. • Unplanned Increase in Pressure	➢ Protect life & property ➢ Notify appropriate personnel ➢ Initiate Emergency Plan as Needed ➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC
Unplanned Flow Rate Deviation • Unplanned Increase in Flow • Unplanned Decrease in Flow & or No Flow	➢ Protect life & property ➢ Notify appropriate personnel ➢ Initiate Emergency Plan as Needed ➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC
Unplanned Status Change • Inoperable/Failure of a Pipeline Component • Stray Current on a Pipeline – Electric Shock	➢ Protect life & property ➢ Notify appropriate personnel ➢ Initiate Emergency Plan as Needed ➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC
Inadequate Odorization or Reports of Gas Odor • Low odorization • Over odorization & or Odor complaint	➢ Protect life & property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC
Improper Installation/Misalignment of Components • Improper fitting/component installation • Misalignment of fittings/components	➢ Protect life & property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Make repairs/eliminate AOC

Adopted: February, 2008
Revised: July, 2013

Damage Prevention Covered Tasks

Knowledge, Skills and Abilities
Abnormal Operation Conditions

Task 1291 Locate Underground Pipelines

From ASME B31Q:

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 and react to AOCs
(7) Complete necessary documentation

Knowledge, skills, abilities and abnormal operating conditions for this task:

Knowledge of the properties of gas
Knowledge of ignition sources
Knowledge of the use and care of personal protective equipment- common
Knowledge in the use and care of electronic pipeline locating equipment
Knowledge of state laws, rules & regulations concerning underground damage prevention
Knowledge of the pipeline mark out techniques
Knowledge of how to identify the physical location of the locate request
Knowledge of how to recognize other underground utilities in the locate area
Ability to use pipe locating equipment and mark lines
Ability to read pipeline drawings and maps
Ability to recognize soil and surface conditions
Ability to locate by other means i.e. probing, measurement, pot holing

Ability to recognize and react to the following abnormal operating conditions:

AOC Main Category & Examples of Specific AOCs	Reactions to AOC, as appropriate
Unplanned escape of product from a pipeline • Blowing/Escaping gas/Grade I leak	➢ Protect life & Property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Notify Fire/Emergency Responders ➢ Initiate Emergency Plan ➢ Locate source/cause of AOC ➢ Use appropriate PPE ➢ Stop gas flow ➢ Make repairs/eliminate AOC
Fire or Explosion • Fire on a pipeline • Explosion	➢ Protect life & Property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Notify Fire/Emergency Responders ➢ Initiate Emergency Plan ➢ Locate source/cause of AOC ➢ Use appropriate PPE ➢ Stop gas flow ➢ Make repairs/eliminate AOC
Pipeline Damage • Coating Damage • Corrosion Damage • Dents, Gouges, Scrapes, etc.	➢ Protect life & Property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC
Unplanned Status Change • Inoperable/Failure of a Pipeline Component • Stray Current on a Pipeline – Electric Shock	➢ Protect life & property ➢ Notify appropriate personnel ➢ Initiate Emergency Plan as Needed ➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC
Inadequate Odorization or Reports of Gas Odor • Low odorization • Over odorization & or Odor complaint	➢ Protect life & property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC

Revised: May, 2013

Task 1301 Install and Maintain Pipeline Markers

From ASME B31Q:

Includes determining the location, placing and maintaining permanent pipeline markers
(1) Identify requirements
(2) Evaluate to determine if pipeline marker requirements are met
(3) Install or maintain line marker
(4) Recognize and react to AOCs
(5) Complete necessary documentation

Knowledge, skills, abilities and abnormal operating conditions for this task:

Knowledge of the properties of gas
Knowledge of ignition sources
Knowledge of regulatory requirements and company O & M plans for pipeline markers
Knowledge and ability to use electronic pipeline locating equipment
Knowledge of state laws, rules & regulations concerning damage prevention procedures
Ability to read gas system pipeline drawings and maps.

Ability to recognize and react to the following abnormal operating conditions:

AOC Main Category & Examples of Specific AOCs	Reactions to AOC, as appropriate
Unplanned escape of product from a pipeline • Blowing/Escaping gas/Grade I leak	➢ Protect life & Property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Notify Fire/Emergency Responders ➢ Initiate Emergency Plan ➢ Locate source/cause of AOC ➢ Use appropriate PPE ➢ Stop gas flow ➢ Make repairs/eliminate AOC
Fire or Explosion • Fire on a pipeline • Explosion	➢ Protect life & Property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Notify Fire/Emergency Responders ➢ Initiate Emergency Plan ➢ Locate source/cause of AOC ➢ Use appropriate PPE ➢ Stop gas flow ➢ Make repairs/eliminate AOC
Inadequate Odorization or Reports of Gas Odor • Low odorization • Over odorization & or Odor complaint	➢ Protect life & property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC
Improper Installation/Misalignment of Components • Improper fitting/component installation • Misalignment of fittings/components	➢ Protect life & property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Make repairs/eliminate AOC

Adopted: March, 2012
Revised: May, 2013

Task 1311 Inspect Pipeline Surface Conditions – Patrol Right of Way or Easement

From ASME B31Q:

This task includes performing right of way or easement patrol (e.g. walking, flying or driving) to visually identify signs of leaks, encroachments, conditions of the right of way, or any other signs of potential impact to pipeline safety or integrity. Includes reporting an emergency condition.

1) Identify requirements
2) Perform patrol
3) Recognize and react to Abnormal Operating Conditions
4) Complete necessary documentation

Knowledge, skills, abilities and abnormal operating conditions for this task:

Knowledge of the properties of gas
Knowledge of ignition sources
Knowledge of the use and care of personal protective equipment
Knowledge of gas migration
Knowledge of leak classification criteria
Knowledge of pipeline marking requirement
Skill to recognize signs of gas leak on various types of vegetation
Ability to use a combustible gas indicator
Ability to conduct a barhole leak investigation
Ability to recognize encroachment and other possible unsafe conditions along ROW
Ability to read gas system pipeline drawings and maps

Ability to recognize and react to abnormal operating conditions:

AOC Main Category & Examples of Specific AOCs	Reactions to AOC, as appropriate
Unplanned escape of product from a pipeline • Blowing/Escaping gas/Grade I leak	➢ Protect life & Property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Notify Fire/Emergency Responders ➢ Initiate Emergency Plan ➢ Locate source/cause of AOC ➢ Use appropriate PPE ➢ Stop gas flow ➢ Make repairs/eliminate AOC
Fire or Explosion • Fire on a pipeline • Explosion	➢ Protect life & Property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Notify Fire/Emergency Responders ➢ Initiate Emergency Plan ➢ Locate source/cause of AOC ➢ Use appropriate PPE ➢ Stop gas flow ➢ Make repairs/eliminate AOC
Pipeline Damage • Coating Damage • Corrosion Damage • Dents, Gouges, Scrapes, etc.	➢ Protect life & Property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC
Unplanned Status Change • Inoperable/Failure of a Pipeline Component • Stray Current on a Pipeline – Electric Shock	➢ Protect life & property ➢ Notify appropriate personnel ➢ Initiate Emergency Plan as Needed ➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC
Inadequate Odorization or Reports of Gas Odor • Low odorization • Over odorization & or Odor complaint	➢ Protect life & property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC

Revised: May, 2013

Task 1321 Damage Prevention During Excavation Activities by or On Behalf of the Operator

From ASME B31Q:

Includes assuring the performance of damage prevention activities during excavation activities (e.g. verifying underground pipelines are marked, providing required notifications, use of spotter/swamper to guide equipment operator, probing, hand digging, pot holing to verify location of bore-head, etc.)

(1) Identify requirements
(2) Implement damage prevention actions during excavation activities
(3) Recognize and react to AOCs
(4) Complete necessary documentation

Knowledge, skills, abilities and abnormal operating conditions for this task:

Knowledge of the properties of gas
Knowledge of ignition sources
Knowledge of the use of and care of personal protective equipment
Knowledge of the state laws, rules & regulations concerning damage prevention procedures.
Knowledge of the pipeline mark out techniques
Knowledge of the separation requirements of utilities
Knowledge of the techniques and protection for safe excavation
Ability to read pipeline drawings and maps
Ability to recognize external forces and land movement that could potentially jeopardize pipeline integrity

Ability to recognize and react to the following abnormal operating conditions:

AOC Main Category & Examples of Specific AOCs	Reactions to AOC, as appropriate
Unplanned escape of product from a pipeline • Blowing/Escaping gas/Grade I leak	➢ Protect life & Property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Notify Fire/Emergency Responders ➢ Initiate Emergency Plan ➢ Locate source/cause of AOC ➢ Use appropriate PPE ➢ Stop gas flow ➢ Make repairs/eliminate AOC
Fire or Explosion • Fire on a pipeline • Explosion	➢ Protect life & Property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Notify Fire/Emergency Responders ➢ Initiate Emergency Plan ➢ Locate source/cause of AOC ➢ Use appropriate PPE ➢ Stop gas flow ➢ Make repairs/eliminate AOC
Pipeline Damage • Coating Damage • Corrosion Damage • Dents, Gouges, Scrapes, etc.	➢ Protect life & Property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC
Unplanned Status Change • Inoperable/Failure of a Pipeline Component • Stray Current on a Pipeline – Electric Shock	➢ Protect life & property ➢ Notify appropriate personnel ➢ Initiate Emergency Plan as Needed ➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC
Inadequate Odorization or Reports of Gas Odor • Low odorization • Over odorization & or Odor complaint	➢ Protect life & property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC

Revised: May, 2013

Task 1331 Damage Prevention Inspection During Third Party Excavation or Encroachment Activities as Determined Necessary by Operator

From ASME B31Q:

Includes inspection of damage prevention activities during third party excavation or encroachment activity (e.g. verifying underground pipelines are marked, providing required notifications, use of spotter/swamper to guide equipment operator, probing, hand digging, pot holing to verify location of bore-head, etc.)

(1) Identify requirements

(2) Perform inspection to enforce damage prevention during and after third party excavation or encroachment activities

(3) Recognize and react to AOCs

(4) Complete necessary documentation

Knowledge, skills, abilities and abnormal operating conditions for this task:

Knowledge of the properties of gas
Knowledge of ignition sources
Knowledge of the use of and care of personal protective equipment
Knowledge of the state laws, rules & regulations concerning damage prevention procedures.
Knowledge of the pipeline mark out techniques
Knowledge of the separation requirements of utilities
Knowledge of the techniques and protection for safe excavation
Ability to read pipeline drawings and maps
Ability to recognize external forces and land movement that could potentially jeopardize pipeline integrity

Ability to recognize and react to the following abnormal operating conditions:

AOC Main Category & Examples of Specific AOCs	Reactions to AOC, as appropriate
Unplanned escape of product from a pipeline • Blowing/Escaping gas/Grade I leak	➢ Protect life & Property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Notify Fire/Emergency Responders ➢ Initiate Emergency Plan ➢ Locate source/cause of AOC ➢ Use appropriate PPE ➢ Stop gas flow ➢ Make repairs/eliminate AOC
Fire or Explosion • Fire on a pipeline • Explosion	➢ Protect life & Property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Notify Fire/Emergency Responders ➢ Initiate Emergency Plan ➢ Locate source/cause of AOC ➢ Use appropriate PPE ➢ Stop gas flow ➢ Make repairs/eliminate AOC
Pipeline Damage • Coating Damage • Corrosion Damage • Dents, Gouges, Scrapes, etc.	➢ Protect life & Property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC
Unplanned Status Change • Inoperable/Failure of a Pipeline Component • Stray Current on a Pipeline – Electric Shock	➢ Protect life & property ➢ Notify appropriate personnel ➢ Initiate Emergency Plan as Needed ➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC
Inadequate Odorization or Reports of Gas Odor • Low odorization • Over odorization & or Odor complaint	➢ Protect life & property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC

Revised: May, 2013

Task 1341 Provide or Assure Adequate Pipeline Support During Operator Initiated Excavation Activities

From ASME B31Q:

This task includes the actions necessary to provide or assure adequate pipeline support during excavation activities (e.g. installing bridging, bracing, etc.)

1) Identify requirements
2) Install bridging, bracing, or other specified support
3) Recognize and react to Abnormal Operating Conditions
4) Complete necessary documentation

Knowledge, skills, abilities and abnormal operating conditions for this task:

Knowledge of the properties of gas
Knowledge of ignition sources
Knowledge of the use and care of personal protective equipment
Knowledge of pipe materials and limitations
Knowledge of protection techniques and materials to protect exposed pipe from damage
Ability to install adequate bridging and bracing

Ability to recognize and react to the following abnormal operating conditions:

AOC Main Category & Examples of Specific AOCs	Reactions to AOC, as appropriate
Unplanned escape of product from a pipeline • Blowing/Escaping gas/Grade I leak	➢ Protect life & Property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Notify Fire/Emergency Responders ➢ Initiate Emergency Plan ➢ Locate source/cause of AOC ➢ Use appropriate PPE ➢ Stop gas flow ➢ Make repairs/eliminate AOC
Fire or Explosion • Fire on a pipeline • Explosion	➢ Protect life & Property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Notify Fire/Emergency Responders ➢ Initiate Emergency Plan ➢ Locate source/cause of AOC ➢ Use appropriate PPE ➢ Stop gas flow ➢ Make repairs/eliminate AOC
Pipeline Damage • Coating Damage • Corrosion Damage • Dents, Gouges, Scrapes, etc.	➢ Protect life & Property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC
Unplanned Status Change • Inoperable/Failure of a Pipeline Component • Stray Current on a Pipeline – Electric Shock	➢ Protect life & property ➢ Notify appropriate personnel ➢ Initiate Emergency Plan as Needed ➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC
Inadequate Odorization or Reports of Gas Odor • Low odorization • Over odorization & or Odor complaint	➢ Protect life & property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC

Revised: May, 2013

Purging Covered Tasks

Knowledge, Skills and Abilities
Abnormal Operation Conditions

Task 1651 Purging – Flammable or Inert Gas

From ASME B31Q

Includes ensuring adequate supply of gas, obtaining correct authorizations to purge, remove or take proper precautions for handling liquids in the line, installation of proper pressure gauges, operation of appropriate valves and maintaining correct pressures in the line.

Knowledge, skills, abilities and abnormal operating conditions for this task:

Knowledge of properties of gas
Knowledge of ignition sources
Knowledge of natural migration
Knowledge of the use and care of personal protective equipment
Knowledge of purging practices and safety
Knowledge of utilizing inert purge gas (if inert purge used)
Knowledge of special safety issues involved in blowing gas (Static charge in plastic pipe, control of ignition sources, blowing gas near structures, electric power facilities, etc.)
Ability to Control Gas Flow While Purging
Ability to Use a Combustible Gas Indicator
Skills in Operating Gas Valves
Skills in Basic Pipe Fitting (Threaded Steel)

Ability to recognize and react to the following abnormal operating conditions:

AOC Main Category & Examples of Specific AOCs	Reactions to AOC, as appropriate
Unplanned escape of product from a pipeline • Blowing/Escaping gas/Grade I leak	➢ Protect life & Property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Notify Fire/Emergency Responders ➢ Initiate Emergency Plan ➢ Locate source/cause of AOC ➢ Use appropriate PPE ➢ Stop gas flow ➢ Make repairs/eliminate AOC
Fire or Explosion • Fire on a pipeline • Explosion	➢ Protect life & Property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Notify Fire/Emergency Responders ➢ Initiate Emergency Plan ➢ Locate source/cause of AOC ➢ Use appropriate PPE ➢ Stop gas flow ➢ Make repairs/eliminate AOC
Unplanned Pressure Deviation • Unplanned Decrease in Pressure & or No Press. • Unplanned Increase in Pressure	➢ Protect life & property ➢ Notify appropriate personnel ➢ Initiate Emergency Plan as Needed ➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC
Unplanned Flow Rate Deviation • Unplanned Increase in Flow • Unplanned Decrease in Flow & or No Flow	➢ Protect life & property ➢ Notify appropriate personnel ➢ Initiate Emergency Plan as Needed ➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC
Unplanned Status Change • Inoperable/Failure of a Pipeline Component • Stray Current on a Pipeline – Elec. Shock (Static)	➢ Protect life & property ➢ Notify appropriate personnel ➢ Initiate Emergency Plan as Needed ➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC
Inadequate Odorization or Reports of Gas Odor • Low odorization • Over odorization & or Odor complaint	➢ Protect life & property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC

Adopted: March, 2012
Revised: July, 2013

Task 1701 Isolating, Abandoning and Deactivating Facilities

From ASME B31Q:

Isolate the line or facility by closing correct valves, blind flanges, or welding on end caps, purging the line and install locking devices as required.

Knowledge, skills, abilities and abnormal operating conditions for this task:

Knowledge of properties of gas
Knowledge of ignition sources
Knowledge of natural migration
Knowledge of code and O & M Plan requirements for abandonment
Knowledge of code and O & M Plan requirements for deactivation
Knowledge of code and O & M Plan requirements for isolation
Knowledge of the use and care of personal protective equipment
Knowledge of purging practices and safety
Knowledge of utilizing inert purge gas (if inert purge used)
Knowledge of special safety issues involved in blowing gas (Static charge in plastic pipe, control of ignition sources, blowing gas near structures, electric power facilities, etc.)
Ability to Control Gas Flow While Purging
Ability to Use a Combustible Gas Indicator
Skills in Operating Gas Valves
Skills in Basic Pipe Fitting (Threaded Steel)

Ability to recognize and react to the following abnormal operating conditions:

AOC Main Category & Examples of Specific AOCs	Reactions to AOC, as appropriate
Unplanned escape of product from a pipeline • Blowing/Escaping gas/Grade I leak	➢ Protect life & Property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Notify Fire/Emergency Responders ➢ Initiate Emergency Plan ➢ Locate source/cause of AOC ➢ Use appropriate PPE ➢ Stop gas flow ➢ Make repairs/eliminate AOC
Fire or Explosion • Fire on a pipeline • Explosion	➢ Protect life & Property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Notify Fire/Emergency Responders ➢ Initiate Emergency Plan ➢ Locate source/cause of AOC ➢ Use appropriate PPE ➢ Stop gas flow ➢ Make repairs/eliminate AOC
Unplanned Pressure Deviation • Unplanned Decrease in Pressure & or No Press. • Unplanned Increase in Pressure	➢ Protect life & property ➢ Notify appropriate personnel ➢ Initiate Emergency Plan as Needed ➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC
Unplanned Flow Rate Deviation • Unplanned Increase in Flow • Unplanned Decrease in Flow & or No Flow	➢ Protect life & property ➢ Notify appropriate personnel ➢ Initiate Emergency Plan as Needed ➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC
Unplanned Status Change • Inoperable/Failure of a Pipeline Component • Stray Current on a Pipeline – Elec. Shock (Static)	➢ Protect life & property ➢ Notify appropriate personnel ➢ Initiate Emergency Plan as Needed ➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC
Inadequate Odorization or Reports of Gas Odor • Low odorization • Over odorization & or Odor complaint	➢ Protect life & property ➢ Prevent accidental ignition ➢ Notify appropriate personnel ➢ Locate source/cause of AOC ➢ Make repairs/eliminate AOC

Adopted: March, 2006
Revised: July, 2013

Attachment D: Operator Qualification Management of Change Log

Per the Gas Piping Technology Committee Guidance:

In addition to communicating changes that affect covered tasks to the individuals who perform those covered tasks (including contractors), the operator should also consider communicating such changes to other individuals that may be affected by the change (e.g. evaluators, supervisors, program administrators). The change may be significant enough to require modifications to the qualification process, additional evaluation requirements, or a need to re-evaluate qualifications of any individual currently qualified for the affected tasks.

Types of Changes

1. Modifications to company policies or procedures
2. Changes in state or federal regulations
3. Use of new technology or equipment
4. New information from equipment or product manufacturers
5. Changes needed as a result of monitoring performance or program effectiveness

Level of Communication

The need to communicate changes will vary depending upon the impact of the change on the covered task. For a change that is not substantive (e.g. does not materially affect the knowledge, skills, or abilities required for a covered task), an operator may decide that communication is not necessary.

Timing of Communication

When the change needs to be implemented may also vary. The use of new equipment could be phased in if continued use of the existing equipment is adequate. This would permit the operator time to provide necessary communications and any required training or additional evaluations without disruption of operations and maintenance activities. However, communications related to changes in regulations that result in an existing non-covered operating or maintenance task becoming a covered task may be more urgent since effective dates of new or revised regulations may not provide such flexibility to achieve compliance to the operator qualification requirements. In cases where the operator is aware of an impending rule change (e.g. through monitoring of regulatory projects of the regulating agency), the operator may consider some level of communication prior to the issuance of the final rule (e.g. when a notice of proposed rulemaking is issued.)

Type of Communication

The type of communication may also vary based on the impact or complexity of the change. For example, changes that have limited impact or are minor procedural changes may require a simple communication regarding the change (e.g. written or oral communication or briefing). However, changes that are more substantive may require training or an orientation session, and in some cases, may involve additional evaluations. Methods for communication may include the following:

1. Written or oral instruction
2. Individual or group meetings
3. Tailgate or pre-job briefings
4. Training sessions
5. Technical mailings

Documentation of Communication

Operators should document the communications made related to these changes, including the identification of the individuals notified using Attachment D, “Operator Qualification Management of Change Communication Log”.

Notification of Significant Program Changes must be communicated to Federal/State regulatory agencies after the program has been reviewed for compliance.

Operator Qualification Management of Change Communication Log

Tracking #:		Effective Date of Change:	
Method of Communication:	Verbal: ☐ Written ☐ Demonstration ☐ Email ☐		
Affected Section(s) of Operator Qualification Plan			
Description of Change:			
Reason for Change:			

Signature of Affected Individuals	
Plan Administrator Signature	**Date:**

ATTACHMENT E: PHMSA OPERATOR QUALIFICATION PROTOCAL FORMS 14

ATTACHMENT F: PHMSA OPERATOR QUALIFICATION PROTOCOL FORM 15

_____

Utility/Company

_____

Plan Administrator (Protocol 3.01 §192.805/195.505)

NATURAL GAS OPERATOR QUALIFICATION PROGRAM

Adopted _____

Date

NATURAL GAS OPERATOR QUALIFICATION PROGRAM

A Model Program from the

IOWA
ASSOCIATION OF MUNICIPAL
UTILITIES

1735 NE 70th Avenue
Ankeny, Iowa 50021-9353
515/289-1999

Disclaimer of Warranty and Limitation of Liability

This model program has been developed by the Iowa Association of Municipal Utilities (IAMU) in conjunction with Minnesota Municipal Utilities Association (MMUA), Iowa Utilities Board (IUB), Minnesota Office of Pipeline Safety (MOPS) and both of the Natural Gas Safety Committees of IAMU and MMUA to promote the safe operation of municipal gas systems and compliance with federal regulation of gas pipeline operators.

This publication is designed to provide accurate and authoritative information in regard to the subject matter covered. It is furnished with the understanding that neither the Association nor its licensed agent is engaged in rendering legal or other professional service. If legal advice or other professional or expert assistance is required, the services of a competent professional person should be sought. This publication is provided "as is" without warranty of any kind, either expressed or implied, including but not limited to the implied warranties of merchantability and fitness for a particular purpose. The entire risk as to the quality, performance, and accuracy of the manual is with the holder.

PREFACE

This program has been developed by the Iowa Association of Municipal Utilities (IAMU) in conjunction with the Minnesota Municipal Utilities Association (MMUA) and their Natural Gas Safety Committees, the Iowa Utilities Board, and the Minnesota Office of Pipeline Safety, and will continually be amended and updated as deemed necessary.

In an effort to promote employee and gas system safety, the creation of this important operator qualification program was developed to assist operators in fulfilling the regulations set by the Pipeline and Hazardous Materials Safety Administration, U.S. Department of Transportations.

It is our intent to include all covered tasks, and procedures in this program. However, managers/supervisors are cautioned that some of the tasks that are performed on your system may be unique and therefore will have to be modified to your system.

It is the intent of this program that all persons in this OQ program are required to test for the fundamentals of natural gas, as a prerequisite to all competencies and skills. A training program for the fundamentals of natural gas must include: characteristics and hazards of natural gas, potential ignition sources: indoor and outdoor, recognizing emergency conditions and recognizing and reporting natural gas leaks.

Division 1 has sections that were intentionally left blank. These blanks are to be filled in by the Plan Administrator to customize the program to your system.

Division 7 is unique to this program and is intended for actual procedures and training materials used if different from the IAMU program, example; Fisher Regulator School, American Meter School.

Updates, changes, and other modifications to this program, other than those made by the Plan Administrator, will be done at IAMU's. Plan Administrator is responsible for implementation and modifications in this OQ program and is also responsible for all required documentation in support of this program. This would include documentation from outside contractors, mutual aid agreements and qualification.

(Protocols 1.01, 3.01, 5.02, 6.01, 8.01 §192.805/195.505)

If you wish to use Midwest Energy Association (MEA) training materials they may be obtained by contacting IAMU or directly to MEA at 651-289-9600.

Questions about the IAMU program and training materials used in this program should be directed to the IAMU offices by calling 515-289-1999.

NATURAL GAS OPERATOR QUALIFICATION PROGRAM
TABLE OF CONTENTS

DIVISION 3 – REQUIRED COMPETENCIES AND SKILLS

DIVISION 4 – RECORD KEEPING

DIVISION 5 – HANDS-ON PERFORMANCE QUALIFICATION (Forms)

INTRODUCTION

The gas operator qualification program is governed by the regulations of the U.S. Department of Transportation, Pipeline and Hazardous Materials Safety Administration (PHMSA). Those regulations are found in 49-CFR-191 and 192.

Format of this Program

This program is separated into eight divisions:

Division 1. PURPOSE AND SCOPE

The first part of the program explains the purpose and scope of the program. It explains the different methods for qualification, re-evaluation, notices of changes, training, record keeping, mutual aid, and also the time frames for re-qualification.

Division 2. COVERED TASKS

This division explains the procedures required of the gas operator, and the covered tasks associated with the procedure.

Division 3. REQUIRED COMPETENCIES AND SKILLS

In this division is an outline of the required competencies and skills, the method for qualification, the time frames for re-qualification, and suggested training references, these are suggested training references, if other training material is used; the operator should list it, and give an outline of it in Division 7.

Division 4. RECORD KEEPING

This division contains both the individual summary, which belongs to the individual performing the covered tasks, and the group summary, which belongs to the system that owns the plan.

Division 5. HANDS-ON PERFORMANCE QUALIFICATION (Forms)

Division five contains evaluation forms used in the evaluation of the hands-on skills and other documentation processes.

Division 6. WRITTEN EVALUATION OF COMPETENCIES AND SKILLS

In this division is a copy of the written evaluations used to help determine knowledge retention.

Division 7. TRAINING MATERIALS

This division is a list of training materials that operators use other than those found in Division 8 that are used in the qualification process.

Division 8. COURSE DESCRIPTIONS

The eighth division contains an outline of Midwest Energy Association's (MEA) training modules, which is reproduced by the Iowa Association of Municipal Utilities through an Agreement by the two parties.

PROTOCOLS/RULE REQUIRMENTS

Protocol questions are utilized to inspect OQ programs. The tables below reference divisions of the IAMU plan where the protocols are addressed.

PROTOCOL	RULE REQUIRMENT	IAMU SECTION ADDRESSED IN
1.01	§192.805/195.505	Preface, 1.15, Divisions 2, 3
1.02	§192.803/195.503 §192.805/195.505	1.3
1.03	§192.803/195.503	1.14
1.04	§192.803/195.503 §192.805/195.505	Preface, 1.9, 1.11, 1.14 Division 7
1.05	§192.809/195.509 Amdt 192-90, 8-20-01	Division 3
2.01	§192.801/195.501 §192.805/195.505	1.2, 1.10, 1.15, Division 2
2.02	§192.803/195.503 §192.805/195.505	Division 3
3.01	§192.805/195.505 §192.807/195.507	Cover page, Preface, 1.3, 1.12, Divisions 4a, 4b
3.02	§192.805/195.505	1.8, Division 5
4.01	§192.803/195.503 §192.805/195.505 §192.809/195.509	1.1, 1.7, Divisions 3, 5
4.02	§192.803/195.503	1.3, 1.9, 1.11, 1.16, Division 8
5.01	§192.805/195.505 Incident 191 Accident 195	1.9
5.02	§192.805/195.505	Preface, 1.15, Division 3
6.01	§192.805/195.505	Preface, 1.17, Division 5
7.01	§192.807/195.507	1.3, 1.12
8.01	§192.805/195.505	Preface, 1.10, Division 5 & 7

Acknowledgements

The basic content of the operator qualification program was developed by the Iowa Association of Municipal Utilities, Minnesota Municipal Utilities Association several operators and pipeline safety staff located in Iowa and Minnesota. Contributing persons include:
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Dan Morgan Owatonna Public Utilities
Bert Magstadt Watertown Municipal Utilities
SSOQ2 Government-Industry Taskforce
Security Integrity Foundation (SIF) Committee

Endorsement: Midwest Energy Association (MEA), training, testing, evaluation and record keeping materials are compatible with the IAMU OQ plan.

NATURAL GAS OPERATOR QUALIFICATION PROGRAM

1.1 PURPOSE. This program is intended to meet the requirements, effective April 27, 2001, of the Pipeline and Hazardous Materials Safety Administration (PHMSA), U.S. Department of Transportation, for natural gas operators. By following the provisions in this written program, individuals will be able to meet the October 28, 2002 requirements as specified in 192.809. Any persons performing covered tasks after October28, 2002 shall be qualified in accordance with this program. Work performance history review is not anticipated to be used as a qualification criteria, except it may be used for outside contractors performing certain covered tasks, that require separate documentation, as required by the O&M manual, for example; Leak surveys, cathodic protection, regulator inspection. Work performance history may not be used as the sole evaluation after October 28, 2002.
(Protocol 4.01 §192.809/195.509)

QUALIFICATION OF PIPELINE PERSONNEL
49CFR PART 192 Subpart N

192.801 SCOPE.

(a) This subpart prescribes the minimum requirements for operator qualification of individuals performing covered tasks on a pipeline facility.
(b) For the purpose of this subpart, a covered task is an activity, identified by the operator, that:

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

192.803 DEFINITONS.

Abnormal operating condition (AOC) means a condition identified by the operator that may indicate a malfunction of a component or deviation from normal operations that may:

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

Evaluation means 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
(d) Observation during
(e) Performance on the job
(f) On the job training
(g) Simulations
(h) Other forms of assessment.

Qualified means that an individual has been evaluated and can:

(a) Perform assigned covered tasks
(b) Recognize and react to abnormal operating conditions.

Amdt 192-90, Aug 20, 2001

192.805 QUALIFICATION.

Each operator shall have and follow a written qualification program. The program shall include provisions to:
(a) Identify covered tasks
(b) Ensure through evaluation that individuals performing covered tasks are qualified
(c) Allow individuals that are not qualified pursuant to this subpart to perform a covered task if directed and observed by an individual that is qualified
(d) Evaluate an individual if the operator has reason to believe that the individual's performance of a covered task contributed to an incident as defined in part 191
(e) Evaluate an individual if the operator has reason to believe that the individual is no longer qualified to perform a covered task
(f) Communicate changes that affect covered tasks to individuals performing those tasks
(g) Identify those covered tasks and the intervals at which evaluation of the individual's qualifications is needed.

192.807 RECORD KEEPING.

Each operator shall maintain records that demonstrate compliance with this subpart.

(a) Qualification records shall include:
1) Identification of qualified individual(s);
2) Identification of the covered tasks the individual is qualified to perform;
3) Date(s) of current qualification; and
4) Qualification method(s).

(b) Records supporting an individual's current qualification shall be maintained 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 period of five years.

Amdt 192-86 64 FR 46853, Aug 27, 1999

192.809 GENERAL.

Operators must have a written qualification program by April 27, 2001. Operators must complete the qualification of individuals performing covered tasks by October 28, 2002. Work performance history review may be used as a sole evaluation method for individuals who were performing a covered task prior to August 27, 1999.

After October 28, 2002, work performance history may not be used as a sole evaluation method.

Amdt 192-86 64 FR 46853, Aug 27, 1999

1.2 COVERED TASKS, COMPETENCIES AND SKILLS.

This qualification program is divided into specific covered tasks. There are several required competencies and skills for each covered task. Any person performing a covered task must be qualified in the competencies and skills required for that task. In addition, all affected persons, regardless of their performance of specific covered tasks, shall be required to demonstrate knowledge of the Fundamentals of Natural Gas.

(Protocol 2.01 §192.805/195.505)

METHOD USED FOR DETERMINING COVERED TASK LIST

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1.3 OUTSIDE CONTRACTORS.

Outside contractors performing a covered task shall qualify by one of the following methods:

1. May qualify through this program.
2. Shall perform the covered tasks under the direct supervision of a qualified individual.
3. Shall submit proof, prior to performing the task acceptable to the operator demonstrating acceptable qualification for the covered tasks by obtaining copies, as described in Section 1.12 of this Division, of the contractor's evaluations and ensure they address the same knowledge' skills' abilities and AOC's as your evaluations for the same tasks.

Outside contractors qualifications have to include the requirements as described in Section 1.16 of this Division.
The Plan Administrator will make sure the evaluations are documented e.g. test questions are written and observation evaluations include checklists indicating what is observed. List these evaluations in this OQ Program as evaluations you accept for these tasks.

(Protocols 1.02, 3.01, 4.02, 7.01 §192.803/195.503, §192.805/195.505, §192.807/195.507)
(Example) Qualified under Southern Cross leak detection school.

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Copies of the topics covered are on file.

1.4 QUALIFICATION BY WRITTEN / ORAL AND/OR HANDS-ON EVALUATION.

A written / oral and/or hands-on evaluation is required in each competency or skill. Not less than seventy percent of all questions must be answered correctly to pass the evaluation (this percentage may vary, check with your state pipeline safety regulators.) All of the required competencies or skills must be passed or re-training and successful evaluation must be completed on those that are not passed.

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1.5 QUALIFICATION BY PRE-TEST.

A general pre-test may be offered to establish specific knowledge areas. If the test is passed in all areas, at least seventy percent in each competency (this percentage may vary, check with your state pipeline safety regulators), then demonstration of proficiency through hands-on exercises may be used to establish qualification.

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1.6 RE-QUALIFICATION.

Examinations for re-qualification must be passed and documented within the time frames specified in Division 3.

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1.7 QUALIFICATION BY PERFORMANCE.

Qualification by work performance is defined as performing a covered task in a safe and effective manner for a period of at least five years. In other words, there have been no reportable gas-related accidents or incidents, (see definition, 1.9 of this Division), or AOC's as a direct result of the individual's work performance.

In the event that an employee is not qualified to perform a certain task, that person may become qualified by successfully performing the task under the direct supervision of an individual, selected by the Plan Administrator, whom is also qualified. The successful performance must be documented on the appropriate evaluation form (e.g. as contained in Division 5 of this program.)

Work performance history may not be used as sole evaluation method after October 28, 2002.

(Protocol 4.01 §192.803/195.503, §192.805/195.505)

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1.8 PERFORMING COVERED TASK UNDER DIRECT OBSERVATION OF QUALIFIED PERSON.

In the event that an employee is not qualified to perform a certain covered task, that person may perform the covered task if under direct observation of a person that is qualified.

Direct observation means, the observer must be in close enough proximity, in the immediate area, to be able to recognize, and react to an action that may create an abnormal operating condition or by not following proper practices, and take immediate action, to prevent it from occurring.

When performing direct observation the observer must appropriately document the observation. Form "Direct Observation of Unqualified Person Performing

Covered Task Under Direct Supervision of Qualified Individual" in Division 5 can be used to document the observation.

On-the-job training may not be used for fusion, welding, and tapping. Qualification for these covered tasks must be completed prior to performance on a system.

(Protocol 3.02 §192.805/195.505)

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1.9 RE-QUALIFICATON or RE-EVALUATION FOR CAUSE.

Re-evaluation of a person's qualification must be undertaken when his/her performance has created an unsafe environment, been the direct cause of personal injury, or if the Plan Administrator has reason to believe the person's performance of a covered task contributed to an *incident* defined in part 191.

Incident means any of the following events:

1. An event that involves a release of gas from a pipeline or liquefied natural gas *(LNG)* or gas from an LNG facility and (i) A death, or personal injury necessitating in-patient hospitalization; or (ii) Estimated property damage, excluding cost of gas lost, of the operator or others, or both, of $50,000 or more;[1] unintentional estimated gas loss of three million cubic feet or more.
2. An event that results in an emergency shutdown of an LNG facility.
3. An event that is significant, in the judgment of the operator, even though it did not meet the criteria of paragraphs (1) or (2).

If at any time the Plan Administrator has reason to believe that an individual is no longer qualified to perform a covered task, then that individual will have to be re-qualified by hands-on and written and/or oral examination (to same criteria as initial qualifications.) Reasons an individual may no longer be qualified may include: injury or physical limitation, procedures seldom or rarely performed, observation of an error or incorrect procedure, a near-miss incident, evidence of an error or incorrect procedure, or any other evidence the individual may need to be re-evaluated and re-qualified.

(Protocols 1.04, 4.02, 5.01 §192.803/195.503, §192.805/195.505)

[1] Incidents with lower property damage may need to be reported to state regulators. For example, Iowa defines a reportable incident as one with $15,000 of losses or more. These lower-threshold incidents require re-evaluation of qualification.

Re-Qualification will be determined by (the department head, the crew leader, or by a third party observer) as approved by the Plan Administrator.

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1.10 NOTICE OF CHANGES.

Plan Administrator will communicate i.e. meeting, e-mail, with all affected individuals and contractors to make them aware of any material change, or changes made on the system that require a change of procedures, including changes in the O&M and/or the Emergency Procedures. This meeting will occur as soon after such changes are made as practical, and documented as to the context and attendees using Form “Notice of Change” in Division 5. This may include qualification and re-qualification procedures, equipment change and upgrades, new material specifications, O&M activity and new tasks and evaluations.

(Protocol 2.01, 8.01 §192.801/195.501, §192.805/195.505)

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1.11 TRAINING.

The above requirements are accomplished through an on-going training program. This program includes workshops, classroom activities, and various other training methods that are designed to address the different covered tasks performed by each individual.

All training and evaluation shall be conducted by or be in accordance with this training and qualification program.

All hands-on activities will be conducted at the operator’s gas facility, a gas facility of similar design, the IAMU training facility or like facility, or at a workshop designated for the specific competencies and skills identified as covered tasks.

Any new or amended tasks addressed in Section 1.10 shall have appropriate training materials outlined in Division 7.

Retraining if qualifications are questioned will be conducted as per 1.9 of this Division “Reevaluation For Cause.”

(Protocol 1.04, 4.02 §192.803/195.503, §192.805/195.505)

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1.12 PROGRAM RECORDKEEPING.

Section 4 of this manual contains an Individual Qualification Summary (4a) as well as a Group Qualification Summary (4b). These forms will identify each of the qualified individuals, the covered tasks that each individual is qualified to perform, the dates of current qualification for each task, and the qualification methods. Form 4a is to be maintained by and is the property of the individual. Form 4b is to be maintained by the facility administrator and is the property of the gas facility. If forms 4a and 4b are not used, other appropriate recordkeeping methods may also be acceptable, such as, computer databases and workshop documentation, etc.

Records of individual qualification method, completion of workshop evaluation training records that support qualified person qualifications shall be maintained while the individual is performing the covered task. Prior qualifications and of persons that are no longer performing covered tasks, shall be retained for the time period of five years after the qualification expires.

IAMU maintain an off-site back up of documentation for the OQ records of its members.

(Protocols 3.01, 7.01 §192.807/195.507)

1.13 NEW CONSTRUCTION.

Will be regarded as an O&M activity i.e. pipe replacement, main additions regulator station upgrades

1.14 MUTUAL AID.

Both covered by this program or onsite training will be given on assigned covered tasks, prior to performing these tasks, and individuals will be listed.

Individuals from other entities performing covered tasks on behalf of the operator must be evaluated and qualified consistent with the operator's qualification program requirements prior to being allowed to perform covered tasks on the operator's system.

(Protocols 1.03, 1.04 §192.803/195.503)

List task that are required for Mutual Aid responders and list tasks below:

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1.15 QUALIFICATION METHODS.

Qualification methods and time frames required were established by a steering committee of system operators and regulatory personnel located in Iowa, and Minnesota. Due to the complexities and uniqueness of the tasks, some are knowledge based, and others are accomplished by performance.

Time frames used were determined in part by the frequencies the tasks are performed, the extent of AOC's that may be involved, and the difficulties in performing the tasks. The covered task list was partially derived from MEA training materials and IAMU and MMUA steering committees.

(Protocols 1.01, 2.01, 5.02 §192.801/195.501, §192.805/195.505)

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1.16 ABNORMAL OPERATING CONDITIONS

AOC's are listed in the training module descriptions as outlined in Division 8, and how to recognize and respond to them are included in the qualification method as outlined in Division 8.

Other training materials/method/school/workshops etc., need to ensure they cover the AOC's required for the task(s) and then listed in Division 7.

(Protocol 4.02 §192.803/195.503)

1.17 PROGRAM PERFORMANCE, EFFECTIVENESS and IMPROVEMENT

Plan Administrator is to evaluate the program as to performance, effectiveness and improvement.

Example: 1. Changing and or upgrading equipment procedures i.e. Notice of Change form in Division 5.

2. Recognize the need of re-qualification of employees.

Request for changes and/or additions to this plan should be documented by using the "Feedback Form" in Division 5. Copy to be filed at utility/company.

(Protocol 6.01 §192.805/195.505)

PROCEDURES WITH COVERED TASKS

The following activities would be considered "tasks" under 49 CFR 192. The competencies and/or skills listed as sections or subsections under each task are those identified in the operator qualification requirements of Division 3 of this program. Competency in fundamentals of natural gas is required for all covered tasks. (Protocols 1.01, 2.01 §192.805/195.505)

P-1 OPERATE VALVES, REGULATORS, AND RELIEF VALVES LOCATED AT TOWN BORDER STATION AND ALL DISTRICT REGULATOR STATIONS

Tasks:

a. Operating valves (open/close)
b. Changing pressure settings on regulators and relief valves

Required Competencies and Skills:

1 (all)	Fundamentals of natural gas
12.1	Operating valves (including emergency valves), regulators, and relief valves
12.2	Inspecting and maintaining pressure regulating and limiting stations

P-2 MAINTAIN REGULATOR STATIONS

Tasks:

a. Conducting shut down/Start up procedures
b. Operating by-pass
c. Performing lock-up
d. Stroking to full open
e. Adjusting to desired operating pressure
f. Inspecting gauges and/or chart recorders
g. Inspecting filters/valves/strainers
h. Inspecting for atmospheric corrosion
i. Inspecting for protection against third-party interference
j. Inspecting relief valve for damage
k. Checking relief set pressure
l. Checking capacity
m. Inspection of regulator relief valve, orifices, and seats

Required Competencies and Skills:

1 (all)	Fundamentals of natural gas
12.2	Inspecting and maintaining pressure regulating and limiting stations

P-3 CONDUCT LEAK SURVEYS

Tasks:

a. Operating flame ionization unit
b. Operating combustible gas indicator (and/or any other leak detection equipment used on the facility)
c. Operating electronic gas detector
d. Knowing the different leak classifications (distinguish the difference)
e. Conducting bar-hole leak investigation

Required Competencies and Skills:

1 (all)	Fundamentals of natural gas
5.1	Leak Classification
5.2	Procedures for Leak Surveys and Patrols
5.3	Combustible gas indicators
5.4	Electronic gas detectors
5.5	Flame ionization
5.6	Bar Hole Testing and Purging

P-4 OPERATE LINE LOCATOR

Tasks:

a. Locating inductively
b. Locating conductively
c. Proper placement of ground
d. Proper marking of facilities

Required Competencies and Skills:

1 (all)	Fundamentals of natural gas
3.1, 3.2, and/or 3.3, and 3.5	Operating line locator

P-5 INSTALL MAINS

Tasks:

a. Mapping
b. Record keeping
c. Selecting proper welding and/or fusion procedures
d. Installing tracer wire for plastic pipe
e. Installing valves and fittings
f. Conducting pressure tests
g. Purging
h. Plastic pipe repair

Required Competencies and Skills:

1 (all)	Fundamentals of natural gas
2.1	Documenting materials and installation records
2.2	Documenting maximum allowable operating pressure (MAOP)

2.4	Investigating and documenting line failure
3.5	System mapping
4 (all)	The field safety competencies and skills required for this task depend on the type and size of materials, method of construction, and choice of equipment.
7 (all)	The field safety competencies and skills required for this task depend on the type and size of materials, method of construction, and choice of equipment.
8 (all)	The construction - heavy equipment competencies and skills required for this task depend on the type and size of materials, method of construction, and choice of equipment.

P-6 INSTALL SERVICE LINES / REINSTATING SERVICE LINES

Tasks:

a. Mapping
b. Record keeping
c. Selecting proper welding and/or fusion procedures
d. Installing tracer wire for plastic pipe
e. Installing valves, pipe, including excess flow valves, and fittings
f. Pressure testing
g. Purging
h. Selecting proper riser and meter set
i. Plastic pipe repair

Required Competencies and Skills:

1 (all)	Fundamentals of natural gas
2.1	Documenting materials and installation records
2.2	Documenting maximum allowable operating pressure (MAOP)
2.4	Investigating and documenting line failure
3.5	System mapping
4 (all)	The field safety competencies and skills required for this task depend on the type and size of materials, method of construction, and choice of equipment.
7 (all)	The field safety competencies and skills required for this task depend on the type and size of materials, method of construction, and choice of equipment.
8 (all)	The construction - heavy equipment competencies and skills required for this task depend on the type and size of materials, method of construction, and choice of equipment.

P-7 CONDUCT LEAK INVESTIGATIONS

Tasks:

Procedures specified in Operating and Maintenance Plan

Required Competencies and Skills:

1 (all)	Fundamentals of natural gas
2.4	Investigating and documenting line failure
2.5	Accident reporting
5 (all)	Fundamentals of gas leaks and skill in operating appropriate leak detection equipment.
6.1	Carbon monoxide (CO) testing
6.2	Investigating leaks (indoor and outdoor)

P-8 OPERATE ODORANT LEVEL TESTING EQUIPMENT

Tasks:

Selecting appropriate location

Required Competencies and Skills:

1 (all)	Fundamentals of natural gas
11.3	Testing odorant level

P-9 PERFORM LEAK SURVEYS AND PIPELINE PATROLS

Tasks:

a. Identifying building or construction near line
b. Identifying soil subsidence
c. Identifying abnormalities in vegetation growth

Required Competencies and Skills:

1 (all)	Fundamentals of natural gas
4.5	Soil Subsidence
5.2	Procedures for Leak Surveys and Patrols

P-10 FILL ODORANT SYSTEM

Tasks:

a. Closing valves to isolate system
b. De-pressurizing tank
c. Filling according to procedures (differential type or injector)
d. Recording amount of odorant used
e. Closing valves to atmosphere
f. Opening proper valves to restore to use

Required Competencies and Skills:

1 (all)	Fundamentals of natural gas
11.1 or 11.2	Operating and maintaining differential odorant system Operating and maintaining injection odorant system

P-11 OPERATE BACKHOE

Tasks:

a. Loading and unloading
b. Conducting pre-operating inspection
c. Operating

Required Competencies and Skills:

1 (all)	Fundamentals of natural gas
8.1	Operating backhoe

P-12 OPERATE TRENCHER

Tasks:

a. Loading and unloading
b. Conducting pre-operating inspection
c. Operating

Required Competencies and Skills:

1 (all)	Fundamentals of natural gas
8.3	Operating trencher

P-13 JOIN PLASTIC PIPE BY FUSION (By Approved Procedures Only)

Tasks:

a. Performing butt fusion
b. Performing electro fusion
c. Performing saddle fusion
d. Performing socket fusion

Required Competencies and Skills:

1 (all)	Fundamentals of natural gas
7.11 Series	Plastic pipe joining (fusion) butt, electro, saddle, and/or socket

P-14 JOIN PLASTIC PIPE BY MECHANICAL COUPLING (By Approved Procedures Only)

Tasks:

a. Installing mechanical coupling fittings
b. Installing stab fittings
c. Installing compression tap saddle couplings

Required Competencies and Skills:

1 (all)	Fundamentals of natural gas
7.12 Series	Plastic pipe joining (mechanical couplings) mechanical, stab, and/or compression tap saddle

P-15 VISUALLY INSPECT FUSION JOINTS (By Approved Procedures Only)

Tasks:

Following approved fusion procedures

Required Competencies and Skills:

1 (all)	Fundamentals of natural gas
7.11 Series	Plastic pipe joining (fusion)

P-16 JOIN STEEL PIPE BY WELDING

Tasks:

Following approved welding procedures

Required Competencies and Skills:

1 (all)	Fundamentals of natural gas
7.14	Steel pipe joining by welding
7 (all)	The field safety competencies and skills required for this task depend on the type and size of materials, method of construction, and choice of equipment.

P-17 PROTECT WELDING FROM WEATHER

Tasks:

Following approved welding procedures

Required Competencies and Skills:

1 (all)	Fundamentals of natural gas
7.14	Steel pipe joining by welding

P-18 VISUALLY INSPECT COMPLETED WELD

Tasks:

Following approved welding procedures

Required Competencies and Skills:

1 (all)	Fundamentals of natural gas
7.14	Steel pipe joining by welding

P-19 TEST WELDERS

Tasks:

Following approved welding procedures

Required Competencies and Skills:

1 (all)	Fundamentals of natural gas
7.14	Steel pipe joining by welding

P-20 PREPARE WELD SURFACES (By Approved Welding Procedures Only)

Tasks:

Following approved welding procedures

Required Competencies and Skills:

1 (all)	Fundamentals of natural gas
7.14	Steel pipe joining by welding

P-21 JOIN STEEL PIPE BY MECHANICAL COUPLING (By Approved Procedures Only)

Tasks:

a. Installing bolted or boltless insulated couplings
b. Installing bolted or boltless non-insulating couplings

Required Competencies and Skills:

1 (all)	Fundamentals of natural gas
7.15	Steel pipe joining by mechanical couplings

P-22 INSPECT FOR INTERNAL CORROSION

TASKS:

a. Inspecting tapping coupons
b. Inspecting open ends

Required Competencies and Skills:

1 (all)	Fundamentals of natural gas
10.2	Internal corrosion

P-23 INSPECT FOR EXTERNAL CORROSION

Tasks:

a. Examining exposed pipelines
b. Examining coating for damage
c. Examining for pitting or scaling

Required Competencies and Skills:

1 (all)	Fundamentals of natural gas
10.3	External corrosion

P-24 INSPECT FOR ATMOSPHERIC CORROSION

Tasks:

a. Inspecting paint coverage
b. Inspecting for physical damage

Required Competencies and Skills:

1 (all)	Fundamentals of natural gas
10.4	Atmospheric corrosion

P-25 DETERMINE TYPE OF CORROSION (Localized or Generalized)

Tasks:

a. Inspecting for pitting
b. Inspecting for flaking or scaling

Required Competencies and Skills:

1 (all)	Fundamentals of natural gas
10.1	Cathodic protection
10.5	Coatings
10.6	Holiday detection (coating inspection)
10.7	Painting and jacketing above ground facilities

P-26 APPLY COATINGS

Tasks:

a. Applying hot field coating
b. Applying cold field coatings
c. Applying hot melt compound
d. Applying petrolatum tape
e. Applying mastic compounds
f. Primers
g. Paints

Required Competencies and Skills:

1 (all)	Fundamentals of natural gas
10.5	Coatings
10.7	Painting and jacketing above ground facilities

P-27 CONDUCT HOLIDAY DETECTION (Coating Inspection)

Tasks:

a. Visually inspecting
b. Using fault detection equipment

Required Competencies and Skills:

1 (all)	Fundamentals of natural gas
10.6	Holiday detection (coating inspection)

P-28 TAKE PIPE-TO-SOIL READINGS

Tasks:

a. Properly placing half-cell
b. Using voltmeter

Required Competencies and Skills:

1 (all)	Fundamentals of natural gas
10.1	Cathodic protection

P-29 INSPECT FOR DETERIORATION AND DAMAGE

Tasks:

a. Inspecting new pipe and fittings
b. Inspecting coatings
c. Inspecting for dents
d. Identifying stress points

Required Competencies and Skills:

1 (all)	Fundamentals of natural gas
7.13	Recognition of defective material
7.16	Damage prevention
10 (all)	Corrosion control

P-30 INSPECT DITCHES AND BACKFILLS

Tasks:

a. Looking for rocks
b. Looking for sharp objects
c. Inspecting trench bottoms

Required Competencies and Skills:

1 (all)	Fundamentals of natural gas
7.17	Application of padding and shielding

P-31 APPLY PADDING AND SHIELDING

Tasks:

Remediating risks associated with rocks, sharp objects, and rough trench bottoms

Required Competencies and Skills:

1 (all)	Fundamentals of natural gas
7.17	Application of padding and shielding

P-32 PAINT AND JACKET ABOVE GROUND FACILITIES

Tasks:

a. Protecting dielectric fittings
b. Protecting identification tags
c. Protecting regulator vents
d. Applying proper protective coating

Required Competencies and Skills:

1 (all)	Fundamentals of natural gas
10.7	Painting and jacketing above ground facilities

P-33 INSTALL CATHODIC PROTECTION (Sacrificial Anode System)

Tasks:

a. Attaching galvanic anode by thermite weld
b. Attaching galvanic anode by bolt-on-clamps
c. Attaching drive-in galvanic anode

Required Competencies and Skills:

1 (all)	Fundamentals of natural gas
10.8	Installation of cathodic protection (sacrificial anode system)

P-34 INSTALL IMPRESSED CURRENT SYSTEM

Tasks:

a. Installing rectifier
b. Installing anode bed
c. Connecting positive and negative leads to pipe and rectifier

Required Competencies and Skills:

1 (all)	Fundamentals of natural gas
10.9	Installation of impressed current system

P-35 VISUALLY INSPECT CATHODIC PROTECTION SYSTEM

Tasks:

a. Looking at test stations for physical damage
b. Looking at dielectric fittings
c. Looking for broken wires
d. Looking at rectifier units for damage

Required Competencies and Skills:

1 (all)	Fundamentals of natural gas
10.10	Inspection, monitoring cathodic protection system

P-36 MONITOR CATHODIC PROTECTION SYSTEM

Tasks:

a. Recording pipe-to-soil readings
b. Testing for AC Drain
c. Inspecting dielectric spacers
d. Inspecting DC Interference bond
e. Testing soil resistivity
f. Establishing current requirements
g. Inspecting reverse current switch diodes
h. Recording IR Drops
i. Testing casings – (100 mv)

Required Competencies and Skills:

1 (all)	Fundamentals of natural gas
10.10	Inspection, monitoring cathodic protection system

P-37 MAINTAINING CATHODIC PROTECTION SYSTEM

Tasks:

Remediating abnormalities found through visual inspection and monitoring

Required Competencies and Skills:

1 (all)	Fundamentals of natural gas
10.10	Inspection, monitoring cathodic protection

P-38 ELECTRICALLY ISOLATE SYSTEM

Tasks:

a. Installing or maintaining flange gaskets
b. Installing or maintaining weld-in insulating fittings
c. Installing or maintaining insulated meter spuds
d. Installing or maintaining insulated gas cocks
e. Installing or maintaining cathodic protection system isolation

Required Competencies and Skills:

1 (all)	Fundamentals of natural gas
10.8	Installation of cathodic protection (sacrificial anode system)
10.9	Installation of impressed current system
10.10	Inspection, monitoring cathodic protection system

P-39 INSPECT FOR INTERFERENCE OR STRAY CURRENTS

Tasks:

a. Using current interrupter
b. Using power supply

Required Competencies and Skills:

1 (all)	Fundamentals of natural gas
10.10	Inspection, monitoring cathodic protection system

P-40 TAPPING AND STOPPING STEEL PIPE

Tasks:

a. Installing tapping tees
b. Installing bottom-out fittings
c. Installing line stoppers
d. Installing bag stoppers
e. Installing expansion plugs

Required Competencies and Skills:

1 (all)	Fundamentals of natural gas
7.20 and/or 7.21	Tapping/Stopping steel pipe 1” through 4” Tapping/Stopping steel pipe 6” through 8”

P-41 TAPPING AND STOPPING POLYETHYLENE PIPE

Tasks:

a. Squeezing off
b. Performing hot-tap
c. Grounding

Required Competencies and Skills:

1 (all)	Fundamentals of natural gas
7.22	Tapping and stopping polyethylene pipe

P-42 INSPECT VAULT

Tasks:

a. Inspect physical integrity of vault
b. Inspecting integrity of steps
c. Inspecting for excess moisture and proper drainage
d. Inspecting ventilation equipment (vaults exceeding 200cf)

Required Competencies and Skills:

1 (all)	Fundamentals of natural gas
4.8	Confined Space Entry (Vaults, trenches, etc.)

P-43 ABANDON VAULTS

Tasks:

a. Installing line stops
b. Installing temporary bypass
c. Removing vault
d. Maintaining job site protection

Required Competencies and Skills:

1 (all)	Fundamentals of natural gas
4.9	Job site protection
4.11	Pressure testing
4.13	Excavation safety
4.8, 7.23 and 7.20, or 7.21, or 7.22	Confined space entry Vault abandonment Tapping/Stopping steel pipe 1” through 4” Tapping/Stopping steel pipe 6” through 8” Tapping and stopping polyethylene pipe
7.24	Vault abandonment

P-44 MAINTAIN KEY VALVES

Tasks:

a. Positioning valve key on valve
b. Closing and opening valve
c. Lubricating valve (determine correct amount required)
d. Valve mapping
e. Valve location
f. Verifying area of control (mapping)
g. Identifying valve material
h. Identifying valve size
i. Maintaining accessibility of valves

Required Competencies and Skills:

1 (all)	Fundamentals of natural gas
12.1	Operating valves (including key valves), regulators, and relief valves
12.3	Inspecting and maintaining key valves

P-45 INSPECT CUSTOMER METER SETS

Tasks:

a. Inspecting for proper location
b. Inspecting stop cock installation for easy access
c. Determining whether meter set insulated
d. Inspecting regulator installation for vent location/direction
e. Inspecting meter installation for flow direction

f. Checking for riser height and if meter set is level
g. Checking pressure and adjust (customer side)
h. Checking for lock-up
i. Testing for no-flow
j. Checking tracer wire, if poly pipe is used

Required Competencies and Skills:

1 (all)	Fundamentals of natural gas
6.7	Pressure Checks to Establish Gas Service
6.8	Establishing and Disconnecting Gas
10.4	Atmospheric corrosion

P-46 OPERATING PEAK SHAVING PLANT (Propane/Air Mixture/Injection)

Tasks:

a. Operating valves
b. Operating electric control panel
c. Adjusting temperature on vaporizer
d. Adjust injection pressure (Foxboro controller)
e. Operating compressor
f. Operating the specific gravity controller (Usually Ranarex controller)
g. Operate Bunson burner (If equipped)
h. Inspect gauges, charts for stabilization

Required Competencies and Skills:

1 (all)	Fundamentals of natural gas
13.1	Pre-start-up procedures
13.2	Start-up/operating procedures/shut down accordance with operators manual for specific equipment used

P-47 SYSTEM UPRATING (Increasing Pressure)

a. Inspecting meter sets (regulators, orifice size, internal relief)
b. Inspecting regulator/relief capacities
c. Leak survey
d. Bar hole testing

Required Competencies and Skills:

1 (all)	Fundamentals of natural gas
2.3/12.4	System uprating
2.2	Documenting MAOP
5.1	Leak classification
5.2	Procedures for leak surveys and patrols
5.3	Combustible gas indicators
5.4	Electronic gas detectors
5.5	Flame ionization
5.6	Bar hole testing and purging

REQUIRED COMPETENCIES AND SKILLS

(Protocols 1.05, 2.02, 4.01, 5.02 §192.803/195.503, §192.805/195.505, §192.809/195.509 Amdt 192-90, 8-20-01)

	Competencies and Skills	Original Qualification Method	Re-Qualif. Method	Re-Qualif. Period	Suggested Training Reference[1]
Sec. 1	**Fundamentals of Natural Gas**				
1.1	Characteristics and hazards of natural gas	Written evaluation	Written evaluation	36 months, not to exceed 39 months	Gas Fundamentals Training, MEA-101
1.2	Potential ignition sources: indoor and outdoor	Written evaluation	Written evaluation	36 months, not to exceed 39 months	Gas Fundamentals Training, MEA-102
1.3	Recognizing emergency conditions	Written evaluation	Written evaluation	36 months, not to exceed 39 months	Gas Fundamentals Training, MEA-103
1.4	Recognizing and reporting natural gas leaks	Written evaluation	Written evaluation	36 months, not to exceed 39 months	Gas Fundamentals Training, MEA-104
Sec. 2	**Record keeping**				
2.1	Documenting materials and installation records	Written evaluation	Written or hands-on eval.	36 months, not to exceed 39 months	Operator's workshop, O&M Manual MEA-402
2.2	Documenting maximum allowable operating pressure (MAOP)	Written evaluation	Written or hands-on eval.	36 months, not to exceed 39 months	Operator's Workshop, O&M Manual MEA-421
2.3	System up-rating	Written evaluation	Written or hands-on eval.	36 months, not to exceed 39 months	Operator's Workshop, MEA-521
2.4	Investigating and documenting line failure	Written evaluation	Written or hands-on eval.	36 months, not to exceed 39 months	Operator's Workshop, MEA-462
2.5	Accident reporting	Written evaluation	Written evaluation	36 months, not to exceed 39 months	Operator's Workshop, O&M Manual, MEA-103
Sec. 3	**Marking and Mapping Facilities**				
3.1	Locating facilities using the conductive method	Written and hands-on evaluation	Written or hands-on eval.	36 months, not to exceed 39 months	Operator's Workshop, Manufacturers' Procedures, MEA-402
3.2	Locating facilities using the inductive method	Written and hands-on evaluation	Written or hands-on eval.	36 months, not to exceed 39 months	Operator's Workshop, Manufacturers' Procedures, MEA-402
3.3	Locating facilities using the inductive method (two persons)	Written and hands-on evaluation	Written or hands-on eval.	36 months, not to exceed 39 months	Operator's Workshop, Manufacturers' Procedures, MEA-402
3.4	Determining depth through triangulation	Written and hands-on evaluation	Written or hands-on eval.	36 months, not to exceed 39 months	Operator's Workshop, Manufacturers' Procedures, MEA-402
3.5	System mapping	Written evaluation	Written or hands-on eval.	36 months, not to exceed 39 months	Operator's Workshop MEA-402

Sec. 4	**Fundamentals of Field Safety in Construction, Operation, and Maintenance**				
4.1	Personal protective equipment	Written evaluation	Written evaluation	36 months, not to exceed 39 months	OSHA compliance manual and training, MEA-111
4.2	Power tool safety	Written evaluation	Written evaluation	36 months, not to exceed 39 months	OSHA compliance manual and training, MEA-121
4.3	Proper firefighting techniques	Written evaluation	Written or hands-on eval.	36 months, not to exceed 39 months	Emergency Procedures Training, MEA-122
4.4	Controlling the accidental release of gas	Written evaluation	Written evaluation	36 months, not to exceed 39 months	Emergency Procedures Training, MEA-131
4.5	Soil subsidence	Written evaluation	Written evaluation	36 months, not to exceed 39 months	OSHA compliance manual and training, MEA-201
4.6	Atmospheric corrosion	Written evaluation	Written or hands-on eval.	36 months, not to exceed 39 months	Operator's Workshop, MEA-202
4.7	Recognizing unsafe meter sets	Written evaluation	Written or hands-on eval.	36 months, not to exceed 39 months	MEA-211
4.8	Confined space entry (vaults, trenches, etc.)	Written evaluation	Written or hands-on eval.	36 months, not to exceed 39 months	OSHA compliance manual and training, MEA-501
4.9	Job site protection	Written evaluation	Written or hands-on eval.	36 months, not to exceed 39 months	Compliance manual and training, MEA- MEA-401
4.10	Purging safety	Written evaluation	Written or hands-on eval.	36 months, not to exceed 39 months	Operator's Workshop, MEA-422
4.11	Pressure testing steel and plastic pipeline	Written evaluation	Written or hands-on eval.	36 months, not to exceed 39 months	Operator's Workshop, MEA-421
4.12	Abandoning facilities	Written evaluation	Written or hands-on eval.	36 months, not to exceed 39 months	Operator's Workshop, MEA-471
4.13	Excavation safety	Written evaluation	Written or hands-on eval.	36 months, not to exceed 39 months	OSHA compliance manual and training, MEA-404
Sec. 5	**Fundamentals of Gas Leaks - Survey and Response**				
5.1	Leak classification	Written evaluation	Written or hands-on eval.	36 months, not to exceed 39 months	Emergency Procedures Training, Gas Fundamentals Training, MEA-221
5.2	Procedures for leak surveys and patrols	Written evaluation	Written or hands-on eval.	36 months, not to exceed 39 months	Operator's Workshop, MEA-271
5.3	Combustible gas indicators	Written or Hands-on evaluation	Written or hands-on eval.	36 months, not to exceed 39 months	Operator's Workshop, Manufacturers' Procedures MEA-231

5.4	Electronic gas detectors	Written or Hands-on evaluation	Written or hands-on eval.	36 months, not to exceed 39 months	Operator's Workshop, Manufacturers' Procedures, MEA-231
5.4.1	Remote Methane Leak Detector	Hands-on evaluation	Hands-on evaluation	36 months, not to exceed 39 months	Locating Workshop, MEA-231
5.5	Flame ionization	Written or Hands-on evaluation	Written or hands-on eval.	36 months, not to exceed 39 months	Operator's Workshop, Manufacturers' Procedures MEA-232
5.6	Bar hole testing and purging	Written or Hands-on evaluation	Written or hands-on eval.	36 months, not to exceed 39 months	Operator's Workshop, MEA-261
Sec. 6	**Fundamentals of Customer Service**				
6.1	Carbon monoxide (CO) testing	Written evaluation	Written or hands-on eval.	36 months, not to exceed 39 months	Operator's Workshop, MEA-241
6.2	Investigating leaks	Written evaluation	Written or hands-on eval.	36 months, not to exceed 39 months	Operator's Workshop, MEA-272
6.3	Combustion and ventilation air requirements	Written evaluation	Written evaluation	36 months, not to exceed 39 months	Operator's Workshop, MEA-301
6.4	Pilot light operation – Auto pilot ignition	Written evaluation	Written or hands-on eval.	36 months, not to exceed 39 months	Operator's Workshop, MEA-311, 324
6.4.1	Pilot light operation – Electronic ignition	Written evaluation	Written or hands-on eval.	36 months, not to exceed 39 months	Operator's Workshop, MEA-311, 324
6.5	Gas-air adjustment	Written evaluation	Written evaluation	36 months, not to exceed 39 months	Operator's Workshop, MEA-312
6.6	Appliance venting	Written evaluation	Written or hands-on eval.	36 months, not to exceed 39 months	Operator's Workshop, MEA-313
6.7	Pressure checks to establish gas service	Written evaluation	Written or hands-on eval.	36 months, not to exceed 39 months	Operator's Workshop, MEA-321
6.8	Establishing and disconnecting gas	Written evaluation	Written or hands-on eval.	36 months, not to exceed 39 months	Operator's Workshop, MEA-322
Sec. 7	**Fundamentals of Construction**				
7.1	Pressure testing steel and plastic pipeline	Written evaluation	Written or hands-on eval.	36 months, not to exceed 39 months	Operator's Workshop, MEA-421
7.2	Procedures for abandoning facilities	Written evaluation	Written or hands-on eval.	36 months, not to exceed 39 months	Operator's Workshop, MEA-471
7.3	Cathodic protection (general) – pipe-to-soil	Written evaluation	Written or hands-on eval.	36 months, not to exceed 39 months	Operator's Workshop, MEA-431
7.3.1	Inspect rectifier	Written and hands-on evaluation	Written or hands-on eval.	36 months, not to exceed 39 months	Operator's Workshop, MEA-431
7.4	Constructing facilities across streets, railroads, and waterways	Written evaluation	Written evaluation	36 months, not to exceed 39 months	Operator's Workshop, MEA-453

7.5	Operating thermite welder	Written and hands-on evaluation	Written or hands-on eval.	36 months, not to exceed 39 months	Operator's Workshop, Manufacturers' Procedures, MEA-431
7.6	Installing tracer wire	Written evaluation	Written or hands-on eval.	36 months, not to exceed 39 months	Operator's Workshop, DOT Small Gas Operators Manual MEA-451, 452
7.7	Installing valves - Poly	Written Evaluation	Written or hands-on eval.	36 months, not to exceed 39 months	Operator's Workshop, MEA-451
7.7.1	Installing valves - Steel	Written Evaluation	Written or hands-on eval.	36 months, not to exceed 39 months	Operator's Workshop, MEA-451
7.8	Steel and cast iron repair fittings	Written and hands-on evaluation	Written or hands-on eval.	36 months, not to exceed 39 months	Operator's Workshop, Manufacturers' Procedures, MEA-461
7.9	Maintaining steel and cast iron mains	Written evaluation	Written evaluation	36 months, not to exceed 39 months	Operator's Workshop, MEA-462
7.10	Reinforcing steel and plastic mains	Written evaluation	Written evaluation	36 months, not to exceed 39 months	Fusion Workshop, MEA-463
7.11	Plastic pipe joining (butt fusion)	Hands-on evaluation	Hands-on evaluation	12 months, not to exceed 12 months	Fusion Workshop, MEA-411 (12 mo. unless waiver granted)
7.11.1	Plastic pipe joining (electro fusion)	Hands-on evaluation	Hands-on evaluation	12 months, not to exceed 12 months	Fusion Workshop, MEA-411 (12 mo. unless waiver granted)
7.11.2	Plastic pipe joining (saddle fusion)	Hands-on evaluation	Hands-on evaluation	12 months, not to exceed 12 months	Fusion Workshop, MEA-411 (12 mo. unless waiver granted)
7.11.3	Plastic pipe joining (socket fusion)	Hands-on evaluation	Hands-on evaluation	12 months, not to exceed 12 months	Fusion Workshop, MEA-411 (12 mo. unless waiver granted)
7.12	Plastic pipe joining (mechanical couplings)	Hands-on evaluation	Hands-on evaluation	12 months, not to exceed 12 months	Operator's Workshop, MEA-463 (12 mo. unless waiver granted)
7.12.1	Plastic pipe joining (mechanical stab fitting)	Hands-on evaluation	Hands-on evaluation	12 months, not to exceed 12 months	Operator's Workshop, MEA-463 (12 mo. unless waiver granted)
7.12.2	Plastic pipe joining (mechanical compression tap saddle)	Hands-on evaluation	Hands-on evaluation	12 months, not to exceed 12 months	Operator's Workshop, MEA-463 (12 mo. unless waiver granted)
7.13	Recognition of defective material	Written evaluation	Written or hands-on eval.	36 months, not to exceed 39 months	Operator's Workshop, MEA-411, 412, 421
7.14	Steel pipe joining by welding	Per approved welding procedures	Per approved welding procedures	12 months, not to exceed 12 months	Pipeline Welding Workshop, Qualified Welding Procedures
7.15	Steel pipe joining by mechanical couplings	Written and hands-on evaluation	Written or hands-on eval.	36 months, not to exceed 39 months	Operator's Workshop, Operator's Workshop, MEA-412

7.16	Damage prevention	Written evaluation	Written or hands-on eval.	36 months, not to exceed 39 months	Operator's Workshop, MEA-462
7.17	Application of padding and shielding	Written evaluation	Written evaluation	36 months, not to exceed 39 months	Operator's Workshop, MEA-453
7.18	Replacing emergency valves	Written evaluation	Written evaluation	36 months, not to exceed 39 months	Operator's Workshop, MEA-441, 511
7.19	Installing meter sets	Written evaluation	Written or hands-on eval.	36 months, not to exceed 39 months	Operator's Workshop, MEA-211, 322, 452
7.20	Tapping and stopping steel pipe 1" through 4"	Hands-on evaluation	Hands-on evaluation	36 months, not to exceed 39 months	Operator's Workshop, MEA-441
7.21	Tapping and stopping steel pipe 6" through 8"	Hands-on evaluation	Hands-on evaluation	36 months, not to exceed 39 months	Operator's Workshop, Manufacture's Procedures
7.22	Tapping, stopping, squeeze-off of polyethylene pipe	Hands-on evaluation	Hands-on evaluation	36 months, not to exceed 39 months	Operator's Workshop, MEA-451, 452
7.23	Abandonment of services	Written evaluation	Written evaluation	36 months, not to exceed 39 months	Operator's Workshop, MEA-471, 501
Sec. 8	**Fundamentals of Construction – Heavy Equipment Operation**				
8.1	Operating backhoe	Written and hands-on evaluation	Written or hands-on eval.	36 months, not to exceed 39 months	Operator's Workshop, MEA-403
8.2	Operating trencher	Hands-on evaluation	Hands-on eval.	36 months, not to exceed 39 months	Operator's Workshop, Manufacturers' Procedures, MEA-403
8.3	Operating boring equipment	Hands-on evaluation	Hands-on evaluation	36 months, not to exceed 39 months	Operator's Workshop, Manufacturers' Procedures
8.3.1	Operating mole equipment	Hands-on evaluation	Hands-on evaluation	36 months, not to exceed 39 months	Operator's Workshop, Manufacturers' Procedures
8.4	Ditch and backfill inspection	Written evaluation	Written or hands-on eval.	36 months, not to exceed 39 months	Operator's Workshop, MEA-404
Sec. 9	**Fundamentals of Measurement and Control**				
9.2	Odorization measurement and control	Written evaluation	Written evaluation	36 months, not to exceed 39 months	Operator's Workshop, MEA-251
Sec. 10	**Corrosion Control**				
10.1	Cathodic protection	Written evaluation	Written evaluation	36 months, not to exceed 39 months	Corrosion control workshop, MEA-431
10.2	Internal corrosion	Written evaluation	Written or hands-on eval.	36 months, not to exceed 39 months	Corrosion control workshop, MEA-431
10.3	External corrosion	Written evaluation	Written or hands-on eval.	36 months, not to exceed 39 months	Corrosion control workshop, MEA-431

10.4	Atmospheric corrosion	Written evaluation	Written or hands-on eval.	36 months, not to exceed 39 months	Corrosion control workshop, MEA-202
10.5	Coatings	Written evaluation	Written evaluation	36 months, not to exceed 39 months	Corrosion control workshop, MEA-431
10.6	Holiday detection (electronic coating inspection)	Written and hands-on evaluation	Written or hands-on eval.	36 months, not to exceed 39 months	Corrosion control workshop, MEA-431
10.6.1	Holiday detection (visual inspection of coating inspection)	Written and hands-on evaluation	Written or hands-on eval.	36 months, not to exceed 39 months	Corrosion control workshop, MEA-431
10.7	Painting and jacketing above ground facilities	Hands-on evaluation	Hands-on evaluation	36 months, not to exceed 39 months	Corrosion control workshop, MEA-202
10.8	Installation of cathodic protection (sacrificial anode system)	Written evaluation	Written or hands-on eval.	36 months, not to exceed 39 months	Corrosion control workshop, MEA-431
10.9	Installation of impressed current system (rectifier)	Written evaluation	Written or hands-on eval.	36 months, not to exceed 39 months	Corrosion control workshop, MEA-431
10.10	Inspection, monitoring cathodic protection system	Written evaluation	Written evaluation	36 months, not to exceed 39 months	Corrosion control workshop, MEA-431
Sec. 11	**Odorization**				
11.1	Operating and maintaining differential odorant system	Written and hands-on evaluation	Written or hands-on eval.	36 months, not to exceed 39 months	Operator's Workshop, O&M Manual, MEA-251
11.2	Operating and maintaining injection odorant system	Written and hands-on evaluation	Written or hands-on eval.	36 months, not to exceed 39 months	Operator's Workshop, O&M Manual, MEA-251
11.3	Testing odorant level	Written and hands-on evaluation	Written or hands-on eval.	36 months, not to exceed 39 months	Operator's Workshop, O&M Manual, MEA-251
Sec. 12	**Other Operating and Maintenance Skills**				
12.1	Operating valves (including emergency valves), regulators, and relief valves	Written evaluation	Written or hands-on eval.	36 months, not to exceed 39 months	Operator's Workshop, O&M Manual, MEA-244, 511, 512
12.2	Inspecting pressure regulating and limiting stations	Written or hands-on evaluation	Written or hands-on eval.	36 months, not to exceed 39 months	Operator's Workshop, O&M Manual, MEA-512
12.3	Inspecting and maintaining key valves	Written or hands-on evaluation	Written or hands-on eval.	36 months, not to exceed 39 months	Operator's Workshop, O&M Manual, MEA-511
12.4	System uprating	Written evaluation	Written or hands-on eval.	36 months, not to exceed 39 months	Operator's Workshop, O&M Manual, MEA-521

Sec. 13	**Operating Peak Shaving Plant (Propane/air mixture/injection)**				
13.1	Pre-start-up procedures	Hands-on evaluation	Hands-on evaluation	Initial, then 12 months, not to exceed 15 months	O&M Manual, Emergency shut down procedures
13.2	Start-up/operating procedures/shut down in accordance with operators manual for specific equipment	Hands-on evaluation	Hands-on evaluation	Initial, then 12 months, not to exceed 15 months	O&M Manual, Emergency shut down procedures

1Reference to operator training refers to workshops conducted by state and regional associations, such as the Iowa Association of Municipal Utilities and the Midwest Energy Association (formerly known as Midwest Gas Association), manufacturers and distributors of gas industry products and equipment, state regulatory agencies, and other organizations. Specific references to MEA materials are to training modules in the Midwest Energy Association's Operator Qualification Training series.

See Appendix 1 for MEA's training material cross-reference guide.

Division 4a of the Operator Qualification Program contains an Individual Qualification Summary. This form will identify the qualified individual, the covered tasks that each individual is qualified to perform, the dates of current qualification for each task, and the qualification methods. Form 4a is to be maintained by and is the property of the individual. If a form 4a is not used, other appropriate recordkeeping methods may also be acceptable, such as, computer databases and workshop documentation, etc. Training records that support qualified person qualifications shall be maintained while the individual is performing the covered task and of persons that are no longer performing covered tasks shall be retained for the time period of five years.

INDIVIDUAL QUALIFICATION SUMMARY

For

_____

(Employee Name)

This table is used to record the progress of an individual in successfully demonstrating qualification in a competency or skill required to perform tasks necessary for the operation of a natural gas system. A certificate for each competency or skill, which verifies qualification by written evaluation or performance evaluation, must be attached. (Protocol 3.01 §192.807/195.507)

	Competencies and Skills	Original Qualification Method	Re-Qualif. Method	Re-Qualif. Period	Original Date Qualified	Date Re-Qualified
Sec. 1	**Fundamentals of Natural Gas**					
1.1	Characteristics and hazards of natural gas	Written evaluation	Written evaluation	36 months, not to exceed 39 months		
1.2	Potential ignition sources: indoor and outdoor	Written evaluation	Written evaluation	36 months, not to exceed 39 months		
1.3	Recognizing emergency conditions	Written evaluation	Written evaluation	36 months, not to exceed 39 months		
1.4	Recognizing and reporting natural gas leaks	Written evaluation	Written evaluation	36 months, not to exceed 39 months		
Sec. 14	**Record keeping**					
2.1	Documenting materials and installation records	Written evaluation	Written or hands-on eval.	36 months, not to exceed 39 months		
2.2	Documenting maximum allowable operating pressure (MAOP)	Written evaluation	Written or hands-on eval.	36 months, not to exceed 39 months		

2.3	System up-rating	Written evaluation	Written or hands-on eval.	36 months, not to exceed 39 months		
2.4	Investigating and documenting line failure	Written evaluation	Written or hands-on eval.	36 months, not to exceed 39 months		
2.5	Accident reporting	Written evaluation	Written evaluation	36 months, not to exceed 39 months		
Sec. 3	**Marking and Mapping Facilities**					
3.1	Locating facilities using the conductive method	Written and hands-on evaluation	Written or hands-on eval.	36 months, not to exceed 39 months		
3.2	Locating facilities using the inductive method	Written and hands-on evaluation	Written or hands-on eval.	36 months, not to exceed 39 months		
3.3	Locating facilities using the inductive method (two persons)	Written and hands-on evaluation	Written or hands-on eval.	36 months, not to exceed 39 months		
3.4	Determining depth through triangulation	Written and hands-on evaluation	Written or hands-on eval.	36 months, not to exceed 39 months		
3.5	System mapping	Written evaluation	Written or hands-on eval.	36 months, not to exceed 39 months		
Sec. 4	**Fundamentals of Field Safety in Construction, Operation, and Maintenance**					
4.1	Personal protective equipment	Written evaluation	Written evaluation	36 months, not to exceed 39 months		
4.2	Power tool safety	Written evaluation	Written evaluation	36 months, not to exceed 39 months		
4.3	Proper firefighting techniques	Written evaluation	Written or hands-on eval.	36 months, not to exceed 39 months		
4.4	Controlling the accidental release of gas	Written evaluation	Written evaluation	36 months, not to exceed 39 months		
4.5	Soil subsidence	Written evaluation	Written evaluation	36 months, not to exceed 39 months		
4.6	Atmospheric corrosion	Written evaluation	Written or hands-on eval.	36 months, not to exceed 39 months		

4.7	Recognizing unsafe meter sets	Written evaluation	Written or hands-on eval.	36 months, not to exceed 39 months		
4.8	Confined space entry (vaults, trenches, etc.)	Written evaluation	Written or hands-on eval.	36 months, not to exceed 39 months		
4.9	Job site protection	Written evaluation	Written or hands-on eval.	36 months, not to exceed 39 months		
4.10	Purging safety	Written evaluation	Written or hands-on eval.	36 months, not to exceed 39 months		
4.11	Pressure testing steel and plastic pipeline	Written evaluation	Written or hands-on eval.	36 months, not to exceed 39 months		
4.12	Abandoning facilities	Written evaluation	Written or hands-on eval.	36 months, not to exceed 39 months		
4.13	Excavation safety	Written evaluation	Written or hands-on eval.	36 months, not to exceed 39 months		
Sec. 5	**Fundamentals of Gas Leaks - Survey and Response**					
5.1	Leak classification	Written evaluation	Written or hands-on eval.	36 months, not to exceed 39 months		
5.2	Procedures for leak surveys and patrols	Written evaluation	Written or hands-on eval.	36 months, not to exceed 39 months		
5.3	Combustible gas indicators	Written or Hands-on evaluation	Written or hands-on eval.	36 months, not to exceed 39 months (or new equip.)		
5.4	Electronic gas detectors	Written or Hands-on evaluation	Written or hands-on eval.	36 months, not to exceed 39 months (or new equip.)		
5.4.1	Remote Methane Leak Detector	Hands-on evaluation	Hands-on evaluation	36 months, not to exceed 39 months (or new equip.)		
5.5	Flame ionization	Written or Hands-on evaluation	Written or hands-on eval.	36 months, not to exceed 39 months (or new equip.)		
5.6	Bar hole testing and purging	Written or Hands-on evaluation	Written or hands-on eval.	36 months, not to exceed 39 months		

Sec. 6	**Fundamentals of Customer Service**					
6.1	Carbon monoxide (CO) testing	Written evaluation	Written or hands-on eval.	36 months, not to exceed 39 months		
6.2	Investigating leaks	Written evaluation	Written or hands-on eval.	36 months, not to exceed 39 months		
6.3	Combustion and ventilation air requirements	Written evaluation	Written evaluation	36 months, not to exceed 39 months		
6.4	Pilot light operation – Auto pilot ignition	Written evaluation	Written or hands-on eval.	36 months, not to exceed 39 months		
6.4.1	Pilot light operation – Electronic ignition	Written evaluation	Written or hands-on eval.	36 months, not to exceed 39 months		
6.5	Gas-air adjustment	Written evaluation	Written evaluation	36 months, not to exceed 39 months		
6.6	Appliance venting	Written evaluation	Written or hands-on eval.	36 months, not to exceed 39 months		
6.7	Pressure checks to establish gas service	Written evaluation	Written or hands-on eval.	36 months, not to exceed 39 months		
6.8	Establishing and disconnecting gas	Written evaluation	Written or hands-on eval.	36 months, not to exceed 39 months		
Sec. 7	**Fundamentals of Construction**					
7.1	Pressure testing steel and plastic pipeline	Written evaluation	Written or hands-on eval.	36 months, not to exceed 39 months		
7.2	Procedures for abandoning facilities	Written evaluation	Written or hands-on eval.	36 months, not to exceed 39 months		
7.3	Cathodic protection (general) – Pipe-to-soil	Written evaluation	Written or hands-on eval.	36 months, not to exceed 39 months		
7.3.1	Inspect rectifier	Written and hands-on evaluation	Written or hands-on eval.	36 months, not to exceed 39 months		
7.4	Constructing facilities across streets, railroads, and waterways	Written evaluation	Written evaluation	36 months, not to exceed 39 months		

7.5	Operating thermite welder	Written and hands-on evaluation	Written or hands-on eval.	36 months, not to exceed 39 months		
7.6	Installing tracer wire	Written Evaluation	Written or hands-on eval.	36 months, not to exceed 39 months		
7.7	Installing valves – Poly	Written Evaluation	Written or hands-on eval.	36 months, not to exceed 39 months		
7.7.1	Installing valves – Steel	Written Evaluation	Written or hands-on eval.	36 months, not to exceed 39 months		
7.8	Steel and cast iron repair fittings	Written and hands-on evaluation	Written or hands-on eval.	36 months, not to exceed 39 months		
7.9	Maintaining steel and cast iron Mains	Written Evaluation	Written evaluation	36 months, not to exceed 39 months		
7.10	Reinforcing steel and plastic mains	Written Evaluation	Written evaluation	36 months, not to exceed 39 months		
7.11	Plastic pipe joining (butt fusion)	Hands-on evaluation	Hands-on evaluation	12 months, not to exceed 12 months		
7.11.1	Plastic pipe joining (electro fusion)	Hands-on evaluation	Hands-on evaluation	12 months, not to exceed 12 months		
7.11.2	Plastic pipe joining (saddle fusion)	Hands-on evaluation	Hands-on evaluation	12 months, not to exceed 12 months		
7.11.3	Plastic pipe joining (socket fusion)	Hands-on evaluation	Hands-on evaluation	12 months, not to exceed 12 months		
7.12	Plastic pipe joining (mechanical couplings)	Hands-on evaluation	Hands-on evaluation	12 months, not to exceed 12 months		
7.12.1	Plastic pipe joining (mechanical stab fitting)	Hands-on evaluation	Hands-on evaluation	12 months, not to exceed 12 months		
7.12.2	Plastic pipe joining (mechanical compression tap saddle)	Hands-on evaluation	Hands-on evaluation	12 months, not to exceed 12 months		
7.13	Recognition of defective material	Written evaluation	Written or hands-on eval.	36 months, not to exceed 39 months		
7.14	Steel pipe joining by welding	Per approved welding procedures	Per approved welding procedures	12 months, not to exceed 12 months		

7.15	Steel pipe joining by mechanical couplings	Written and hands-on evaluation	Written or hands-on eval.	36 months, not to exceed 39 months		
7.16	Damage prevention	Written evaluation	Written or hands-on eval.	36 months, not to exceed 39 months		
7.17	Application of padding and shielding	Written evaluation	Written evaluation	36 months, not to exceed 39 months		
7.18	Replacing emergency valves	Written evaluation	Written evaluation	36 months, not to exceed 39 months		
7.19	Installing meter sets	Written evaluation	Written or hands-on eval.	36 months, not to exceed 39 months		
7.20	Tapping and stopping steel pipe 1” through 4”	Hands-on evaluation	Hands-on evaluation	36 months, not to exceed 39 months		
7.21	Tapping and stopping steel pipe 6” through 8”	Hands-on evaluation	Hands-on evaluation	36 months, not to exceed 39 months		
7.22	Tapping, stopping. And squeeze-off of polyethylene pipe	Hands-on evaluation	Hands-on evaluation	36 months, not to exceed 39 months		
7.23	Abandonment of services	Written evaluation	Written evaluation	36 months, not to exceed 39 months		
Sec. 8	**Fundamentals of Construction – Heavy Equipment Operation**					
8.1	Operating backhoe	Written and hands-on evaluation	Written or hands-on eval.	36 months, not to exceed 39 months		
8.2	Operating trencher	Hands-on evaluation	Hands-on evaluation	36 months, not to exceed 39 months		
8.3	Operating boring equipment	Hands-on evaluation	Hands-on evaluation	36 months, not to exceed 39 months		
8.3.1	Operating mole equipment	Hands-on evaluation	Hands-on evaluation	36 months, not to exceed 39 months		
8.4	Ditch and backfill inspection	Written evaluation	Written or hands-on eval.	36 months, not to exceed 39 months		

Sec. 9	**Fundamentals of Measurement and Control**					
9.2	Odorization measurement and control	Written evaluation	Written evaluation	36 months, not to exceed 39 months		
Sec. 10	**Corrosion Control**					
10.1	Cathodic protection	Written evaluation	Written evaluation	36 months, not to exceed 39 months		
10.2	Internal corrosion	Written evaluation	Written or hands-on eval.	36 months, not to exceed 39 months		
10.3	External corrosion	Written evaluation	Written or hands-on eval.	36 months, not to exceed 39 months		
10.4	Atmospheric corrosion	Written evaluation	Written or hands-on eval.	36 months, not to exceed 39 months		
10.5	Coatings	Written evaluation	Written evaluation	36 months, not to exceed 39 months		
10.6	Holiday detection (electronic coating inspection)	Written and hands-on evaluation	Written or hands-on eval.	36 months, not to exceed 39 months		
10.6.1	Holiday detection (visual inspection of coating)	Written and hands-on evaluation	Written or hands-on eval.	36 months, not to exceed 39 months		
10.7	Painting and jacketing above ground facilities	Hands-on evaluation	Hands-on evaluation	36 months, not to exceed 39 months		
10.8	Installation of cathodic protection (sacrificial anode system)	Written evaluation	Written or hands-on eval.	36 months, not to exceed 39 months		
10.9	Installation of impressed current system (rectifier)	Written evaluation	Written or hands-on eval.	36 months, not to exceed 39 months		
10.10	Inspection, monitoring cathodic protection system	Written evaluation	Written evaluation	36 months, not to exceed 39 months		
Sec. 11	**Odorization**					
11.1	Operating and maintaining differential odorant system	Written and hand-on evaluation	Written or hands-on eval.	36 months, not to exceed 39 months		

11.2	Operating and maintaining injection odorant system	Written and hands-on evaluation	Written or hands-on eval.	36 months, not to exceed 39 months		
11.3	Testing odorant level	Written and hands-on evaluation	Written or hands-on eval.	36 months, not to exceed 39 months		
Sec. 12	**Other Operating and Maintenance Skills**					
12.1	Operating valves (including emergency valves), regulators, and relief valves	Written evaluation	Written or hands-on eval.	36 months, not to exceed 39 months		
12.2	Inspecting pressure regulating and limiting stations	Written or hands-on evaluation	Written or hands-on eval.	36 months, not to exceed 39 months		
12.3	Inspecting and maintaining key valves	Written or hands-on evaluation	Written or hands-on eval.	36 months, not to exceed 39 months		
12.4	System uprating	Written evaluation	Written or hands-on eval.	36 months, not to exceed 39 months		
Sec. 13	**Operating Peak Shaving Plant** (Propane/Air mixture/Injection)					
13.1	Pre-start-up procedure	Hands-on	Hands-on evaluation	Initial, then 12 months, not to exceed 15 months		
13.2	Start-up/operating procedures/shut down	Hands-on	Hands-on evaluation	Initial, then 12 months, not to exceed 15 months		
Sec. ___	**Other**					

Division 4b of the Operator Qualification Program contains a Group Qualification Summary. This form will identify each of the qualified individuals, the covered tasks that each individual is qualified to perform, and the dates of current qualification for each task. Form 4b is to be maintained by the facility administrator and is the property of the gas facility. If forms 4b are not used, other appropriate recordkeeping methods may also be acceptable, such as, computer databases and workshop documentation, etc. Training records that support qualified person qualifications shall be maintained while the individual is performing the covered task and of persons that are no longer performing covered tasks shall be retained for the time period of five years.

OPERATOR QUALIFICATION (GROUP) SUMMARY

For

_____

(Name of Utility/Organization)

Where the employer copy of individual qualification summaries and related written and hands-on performance evaluations are retained in individual employee records or elsewhere, this table may be used by the operator to summarize the individual qualifications of all or a group of individuals who perform tasks necessary for the operation of a natural gas system.

(Protocol 3.01 §192.807/195.507)

Competencies and Skills		(List date of current qualification for each individual)					
Sec. 1	**Fundamentals of Natural Gas**						
1.1	Characteristics and hazards of natural gas						
1.2	Potential ignition sources: indoor and outdoor						
1.3	Recognizing emergency conditions						
1.4	Recognizing and reporting natural gas leaks						
Sec. 2	**Record keeping**						
2.1	Documenting materials and installation records						
2.2	Documenting maximum allowable operating pressure (MAOP)						
2.3	System up-rating						
2.4	Investigating and documenting line failure						
2.5	Accident reporting						

Sec. 3	**Marking and Mapping Facilities**						
3.1	Locating facilities using the conductive method						
3.2	Locating facilities using the inductive method						
3.3	Locating facilities using the inductive method (two persons)						
3.4	Determining depth through triangulation						
3.5	System mapping						
Sec. 4	**Fundamentals of Field Safety in Construction, Operation, and Maintenance**						
4.1	Personal protective equipment						
4.2	Power tool safety						
4.3	Proper firefighting techniques						
4.4	Controlling the accidental release of gas						
4.5	Soil subsidence						
4.6	Atmospheric corrosion						
4.7	Recognizing unsafe meter sets						
4.8	Confined space entry (vaults, trenches, etc.)						
4.9	Job site protection						
4.10	Purging safety						
4.11	Pressure testing steel and plastic pipeline						
4.12	Abandoning facilities						
4.13	Excavation safety						
Sec. 5	**Fundamentals of Gas Leaks - Survey and Response**						
5.1	Leak classification						
5.2	Procedures for leak surveys and patrols						
5.3	Combustible gas indicators						

5.4	Electronic gas detectors						
5.4.1	Remote Methane Leak Detector						
5.5	Flame ionization						
5.6	Bar hole testing and purging						
Sec. 6	**Fundamentals of Customer Service**						
6.1	Carbon monoxide (CO) testing						
6.2	Investigating leaks						
6.3	Combustion and ventilation air requirements						
6.4	Pilot light operation – Auto pilot ignition						
6.4.1	Pilot light operation – Electronic ignition						
6.5	Gas-air adjustment						
6.6	Appliance venting						
6.7	Pressure checks to establish gas service						
6.8	Establishing and disconnecting gas						
Sec. 7	**Fundamentals of Construction**						
7.1	Pressure testing steel and plastic pipeline						
7.2	Procedures for abandoning facilities						
7.3	Cathodic protection (general) – Pipe-to-soil						
7.3.1	Inspect rectifier						
7.4	Constructing facilities across streets, railroads, and waterways						
7.5	Operating thermite welder						
7.6	Installing tracer wire						
7.7	Installing valves – Poly						
7.7.1	Installing valves - Steel						
7.8	Steel and cast iron repair fittings						

7.9	Maintaining steel and cast iron Mains						
7.10	Reinforcing steel and plastic mains						
7.11	Plastic pipe joining (butt fusion)						
7.11.1	Plastic pipe joining (electro fusion)						
7.11.2	Plastic pipe joining (saddle fusion)						
7.11.3	Plastic pipe joining (socket fusion)						
7.12	Plastic pipe joining (mechanical couplings)						
7.12.1	Plastic pipe joining (mechanical stab fitting)						
7.12.2	Plastic pipe joining (mechanical compression tap saddle)						
7.13	Recognition of defective material						
7.14	Steel pipe joining by welding						
7.15	Steel pipe joining by mechanical couplings						
7.16	Damage prevention						
7.17	Application of padding and shielding						
7.18	Replacing emergency valves						
7.19	Installing meter sets						
7.20	Tapping and stopping steel pipe 1” through 4”						
7.21	Tapping and stopping steel pipe 6” through 8”						
7.22	Tapping, stopping, and squeeze-off of polyethylene pipe						
7.23	Abandonment of services						
Sec. 8	**Fundamentals of Construction – Heavy Equipment Operation**						
8.1	Operating backhoe						
8.2	Operating trencher						

8.3	Operating boring equipment						
8.3.1	Operating mole equipment						
8.4	Ditch and backfill inspection						
Sec. 9	**Fundamentals of Measurement and Control**						
9.2	Odorization measurement and control						
Sec. 10	**Corrosion Control**						
10.1	Cathodic protection						
10.2	Internal corrosion						
10.3	External corrosion						
10.4	Atmospheric corrosion						
10.5	Coatings						
10.6	Holiday detection (electronic coating inspection)						
10.6.1	Holiday detection (visual inspection of coating)						
10.7	Painting and jacketing above ground facilities						
10.8	Installation of cathodic protection (sacrificial anode system)						
10.9	Installation of impressed current system (rectifier)						
10.10	Inspection, monitoring cathodic protection system						
Sec. 11	**Odorization**						
11.1	Operating and maintaining differential odorant system						
11.2	Operating and maintaining injection odorant system						
11.3	Testing odorant level						
Sec. 12	**Other Operating and Maintenance Skills**						
12.1	Operating valves (including emergency valves), regulators, and relief valves						

12.2	Inspecting pressure regulating and limiting stations						
12.3	Inspecting and maintaining key valves						
12.4	System uprating						
Sec. 13	**Operating Peak Shaving Plant** (Propane/Air mixture/Injection)						
13.1	Pre-Start-up procedures						
13.2	Start-up/operating procedures/ shut down						
Sec. ___	**Other**						

EVALUATION OF HANDS-ON SKILLS

Division 5 of the Operator Qualification Program contains evaluating and qualifying hands-on demonstrations of skills necessary to perform tasks on gas systems. Operators may use the forms in Division 5 or attend appropriate workshops in obtaining qualification or re-evaluation. Appropriate documentation forms, attendance records, or manufacturers' procedures maybe used in lieu of the forms supplied in Division 5.

When performing direct observation the observer must appropriately document the observation, form "Direct Observation of Unqualified Person Performing Covered Task Under Direct Supervision of Qualified Individual" in Division 5 can be used to document the observation.

When communication of notice of change use form "Notice of Change"

When communicating a request for change and/or additions to this plan use form "Feedback Form."

(Protocols 3.02, 4.01, 8.01, 1.17 §192.805/195.505, §192.803/195.503)

NOTICE OF CHANGE

This page may be reproduced as needed for recording changes to the Operator Qualification Program.

Utility/Company: _____

Date of Change: _____

Task(s) Impacted		O&M Procedure(s) Impacted		Regulations Impacted		Incidents, For Cause, Near Miss		Industry Accidents	
Yes	No	Yes	No	Yes	No	Yes	No	Yes	No

What Communicated: (Attach any supporting documentation.)

_____
_____
_____
_____

How Communicated:

_____
_____

Tasks Impacted:

_____
_____
_____

Individuals Impacted:

Name of Individual(s) receiving the changes associated with the performance of covered tasks.	Place an "X" in the boxes below when communication is completed for that individual

Name and Position of Person Processing the Change:

_____

After completing this form file in Division 7.

FEEDBACK FORM

Utility/Company: _____

Address: _____

Phone: _____ **Date:** _____

Change or Addition Requested:

_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____

Person Requesting Change:

_____

When form completed file copy in utility/company files.

Response:

_____
_____
_____
_____
_____
_____
_____
_____

Plan Administrator and date:

_____

Competency/skill: Direct Observation of Unqualified Person Performing Covered Task Under Direct Supervision of Qualified Individual

DATE: _____

LOCATION:

_____
_____
_____
(Address and/or GPS Location)

TASK BEING PERFORMED:

_____
_____
_____
_____
_____
_____

PROCEDURES USED:

_____
_____
_____
_____
_____
_____
_____
_____
_____
_____

Unqualified Individuals Name: _____I.D. Number: _____
(Print)

Number of unqualified persons being observed at one time: _____

_____ _____
Qualified Observer Signature **Unqualified Individual Signature**

Competency/skill: 2.1 Documenting material and installation records

Qualified observer instructions:

1. For the performance steps below, observe the participant and check "Go" for successful completion of the step **or** "No Go" if remediation of the step is required.
2. A "No Go" rating on any of the steps constitutes a "No Go" for the entire performance skill. Performance skills must be completed with 100% accuracy.
3. Both the individual taking the performance evaluation and the qualified observer must sign this form upon completion of the evaluation.

Performance Step Analysis		Go	No Go
Reports needed depending upon type of work completed			
1	Completed the following reports in the O&M Plan • Pipeline Test Report and/or, • Bellhole Report and/or, • Pipeline Purge Test Report and/or, • No-Flow Test Report		
2	Filled out any other required report(s)		
3	Filed records and updated maps and maintain for life of the facility. Update DIMP records		
Comments:			

Participant Name: _____ **I.D. Number:** _____

Test Date: _____ **Location:** _____

Evaluation: ☐ **Qualified** ☐ **Not Qualified**

_____ _____

Qualified Observer Signature Participant Signature

Competency/skill: 2.2 Documenting MAOP

Qualified observer instructions:

1. For the performance steps below, observe the participant and check "Go" for successful completion of the step **or** "No Go" if remediation of the step is required.
2. A "No Go" rating on any of the steps constitutes a "No Go" for the entire performance skill. Performance skills must be completed with 100% accuracy.
3. Both the individual taking the performance evaluation and the qualified observer must sign this form upon completion of the evaluation.

Performance Step Analysis		**Go**	**No Go**
Document pressure tests with operating pressures over 100 psig or 30% SMYS			
1	Completed the Pipeline Test Report found in the O&M Plan		
2	File records and maintain for life of the facility. Update DIMP records		
Comments:			

Participant Name: _____ **I.D. Number:** _____

Test Date: _____ **Location:** _____

Evaluation: ❑ **Qualified** ❑ **Not Qualified**

_____ _____

Qualified Observer Signature Participant Signature

Competency/skill: 2.3 System uprating

Qualified observer instructions:

1. For the performance steps below, observe the participant and check "Go" for successful completion of the step **or** "No Go" if remediation of the step is required.
2. A "No Go" rating on any of the steps constitutes a "No Go" for the entire performance skill. Performance skills must be completed with 100% accuracy.
3. Both the individual taking the performance evaluation and the qualified observer must sign this form upon completion of the evaluation.

Performance Step Analysis		Go	No Go
1	Determined if system can be uprated		
2	Developed a specific uprating procedure/plan for system and all personnel understand plan		
3	Notified customers whose service will be interrupted		
4	Changed out service regulators, pipe, equipment, fittings that may have need higher pressure		
5	Leaks surveyed just before pressure increase and classify and repair according to leak classification		
6	Raised pressure in increments or steps and conducted a leak survey after each pressure increase		
7	Monitored pressure at key locations in system during uprating.		
8	Made a final leak survey when the uprating was finished		
9	Documented the system uprating activities. Update DIMP records		
Comments:			

Participant Name: _____ **I.D. Number:** _____

Test Date: _____ **Location:** _____

Evaluation: ☐ **Qualified** ☐ **Not Qualified**

_____ _____

Qualified Observer Signature Participant Signature

Competency/skill: 2.4 Investigating and documenting line failure

Qualified observer instructions:

1. For the performance steps below, observe the participant and check "Go" for successful completion of the step **or** "No Go" if remediation of the step is required.
2. A "No Go" rating on any of the steps constitutes a "No Go" for the entire performance skill. Performance skills must be completed with 100% accuracy.
3. Both the individual taking the performance evaluation and the qualified observer must sign this form upon completion of the evaluation.

Performance Step Analysis		Go	No Go
1	Investigate high priority areas, business districts, schools, construction areas, pipelines beneath continuous pavement between building to building, urban areas and areas with history of leakage or corrosion		
2	Completed the following reports in the O&M Plan • Pipeline Test Report and/or, • Bellhole Report and/or, • Pipeline Purge Test Report and/or, • No-Flow Test Report and/or • Pipeline Accident Investigation Report and/or, • Dig-in Report and/or, • Mechanical Fitting Failure Report		
3	Filled out any other required report(s) and/or notify National Response Center and IUB Duty Officer		
4	Filed records and updated maps and maintain for life of the facility. Update DIMP records		
Comments:			

Participant Name: _____ **I.D. Number:** _____

Test Date: _____ **Location:** _____

Evaluation: ☐ **Qualified** ☐ **Not Qualified**

_____ _____

Qualified Observer Signature Participant Signature

Competency/skill: 3.1 Locate facilities using the conductive method

Qualified observer instructions:

1. For the performance steps below, observe the participant and check "Go" for successful completion of the step **or** "No Go" if remediation of the step is required.
2. A "No Go" rating on any of the steps constitutes a "No Go" for the entire performance skill. Performance skills must be completed with 100% accuracy.
3. Both the individual taking the performance evaluation and the qualified observer must sign this form upon completion of the evaluation.

Performance Step Analysis		Go	No Go
Connect the Transmitter			
1	Connect the transmitter cable to a metal riser pipe or locator wire, with the transmitter as far from the connection as the cable will allow.		
2	Insert the ground rod/plate to one side and away from the pipe, as far from the transmitter as the other connecting cable will allow.		
3	Pour a small amount of water at the ground site to increase conductivity.		
Locate the Pipe			
4	Set the receiver sensitivity control to the low range.		
5	Hold the receiver parallel with the pipe and in a vertical position.		
6	Sweep the receiver close to the ground using short, smooth moves without swinging or rocking.		
7	Find and mark the general location of the pipe by listening for the loudest signal.		
8	Hold the receiver face-up in a horizontal position.		
9	Adjust the sensitivity control to **medium** or **high**.		
10	Sweep the receiver back and forth over the general location, perpendicular to the pipe.		
11	Find the null and mark its location according to Company policy.		
Comments:			

Participant Name: _____ **I.D. Number:** _____

Test Date: _____ **Location:** _____

Evaluation: ☐ **Qualified** ☐ **Not Qualified**

_____ _____

Qualified Observer Signature Participant Signature

Competency/skill: 3.2 Locate facilities using the inductive method (one person)

Qualified observer instructions:

1. For the performance steps below, observe the participant and check "Go" for successful completion of the step **or** "No Go" if remediation of the step is required.
2. A "No Go" rating on any of the steps constitutes a "No Go" for the entire performance skill. Performance skills must be completed with 100% accuracy.
3. Both the individual taking the performance evaluation and the qualified observer must sign this form upon completion of the evaluation.

Performance Step Analysis		Go	No
Position the Transmitter			
1	Place the transmitter over the pipe at a 45^0 angle to its length.		
2	Set the receiver range switch and start with the receiver and transmitter at least 30' apart.		
3	Holding the receiver parallel with the pipe and in a vertical position, walk toward the pipe from one side.		
4	When the **maximum signal** occurs, stop and mark the spot on the ground directly below the receiver.		
5	Move the transmitter and place it on the mark in a vertical position, parallel to and directly above the pipe.		
6	Take the receiver back down the pipeline at least 30 feet away from the transmitter.		
7	Sweep the receiver back and forth over the pipe close to the ground, using short, smooth moves with receiver parallel to transmitter and vertical.		
8	Move the transmitter to the second mark and return to the first mark.		
Locate the Pipe			
9	Sweep the receiver loose to the ground using short, smooth moves.		
10	Listen for the maximum signal to find the general location of the pipe.		
Pinpoint and Mark the Pipe			
11	Hold the receiver face-up in a horizontal position.		
12	Adjust the sensitivity control to **medium** or **high**.		
13	Sweep the receiver back and forth over the general location, perpendicular to the pipe.		
14	Find the null and mark its location according to Company policy.		
See reverse side for any comments:			

Participant Name: _____ **I.D. Number:** _____

Test Date: _____ **Location:** _____

Evaluation: ☐ **Qualified** ☐ **Not Qualified**

_____ _____

Qualified Observer Signature Participant Signature

Competency/skill: 3.3 Locate facilities using the inductive method (two persons)

Qualified observer instructions:

1. For the performance steps below, observe the participant and check "Go" for successful completion of the step **or** "No Go" if remediation of the step is required.
2. A "No Go" rating on any of the steps constitutes a "No Go" for the entire performance skill. Performance skills must be completed with 100% accuracy.
3. Both the individual taking the performance evaluation and the qualified observer must sign this form upon completion of the evaluation.

Performance Step Analysis		Go	No Go
Position the Transmitter			
1	Start with the receiver and transmitter at least 30` apart.		
2	Keep the units parallel and walk toward the pipe.		
3	Set receiver down at the spot where the signal is the strongest and direct the second person to move transmitter back and forth to fine tune the signal.		
4	When the signal is strongest, place the transmitter on the ground in a vertical position parallel to and directly above the pipe.		
Locate the pipe			
5	Sweep the receiver back and forth over the pipe, close to ground, using short, smooth moves with receiver parallel to transmitter and vertical.		
6	Listen for the maximum volume of the signal.		
Pinpoint and mark the pipe			
7	Hold the receiver face-up in a horizontal position.		
8	Adjust the sensitivity control to **medium** or **high**.		
9	Sweep the receiver back and forth over the general location, perpendicular to the pipe.		
10	Find the null and mark its location according to Company policy.		
Comments:			

Participant Name: _____ **I.D. Number:** _____

Test Date: _____ **Location:** _____

Evaluation: ☐ **Qualified** ☐ **Not Qualified**

_____ _____

Qualified Observer Signature Participant Signature

Competency/skill: 3.4 Determining depth through triangulation

Qualified observer instructions:

1. For the performance steps below, observe the participant and check "Go" for successful completion of the step **or** "No Go" if remediation of the step is required.
2. A "No Go" rating on any of the steps constitutes a "No Go" for the entire performance skill. Performance skills must be completed with 100% accuracy.
3. Both the individual taking the performance evaluation and the qualified observer must sign this form upon completion of the evaluation.

Performance Step Analysis		**Go**	**No Go**
Triangulate the pipe			
1	Set the sensitivity control on the receiver to **medium** or **high**.		
2	Hold the receiver as close to the ground as possible at a 45^0 angle (check the depth level indicator on the receiver).		
3	Begin directly above the pipe and move the receiver slowly, at a right angle, away from the pipe.		
4	At the null, mark the spot directly below the center of the receiver.		
Calculate the depth			
5	Measure the distance from this mark to the mark for the pinpointed center of the pipe.		
6	Subtract the distance from the center of the receiver to the ground.		
7	Correctly state the approximate pipe depth.		
8	Document according to Company procedures.		
Comments:			

Participant Name: _____ **I.D. Number:** _____

Test Date: _____ **Location:** _____

Evaluation: ☐ **Qualified** ☐ **Not Qualified**

_____ _____

Qualified Observer Signature Participant Signature

Competency/skill: 3.5 System mapping

Qualified observer instructions:

1. For the performance steps below, observe the participant and check "Go" for successful completion of the step **or** "No Go" if remediation of the step is required.
2. A "No Go" rating on any of the steps constitutes a "No Go" for the entire performance skill. Performance skills must be completed with 100% accuracy.
3. Both the individual taking the performance evaluation and the qualified observer must sign this form upon completion of the evaluation.

Performance Step Analysis		Go	No Go
Updating system maps			
1	Take accurate measurements off of fixed landmarks, and/or GPS readings of all piping, equipment, fittings and anything else on system that special notes need to be added to maps or GIS		
2	Documented all types and make of all of the structure on system		
3	Update maps, hard copy, electronic and/or GIS system		
4	Update DIMP records		
Comments:			

Participant Name: _____ **I.D. Number:** _____

Test Date: _____ **Location:** _____

Evaluation: ❑ **Qualified** ❑ **Not Qualified**

_____ _____

Qualified Observer Signature Participant Signature

Competency/skill: 4.3 Proper firefighting techniques

Qualified observer instructions:

1. For the performance steps below, observe the participant and check "Go" for successful completion of the step **or** "No Go" if remediation of the step is required.
2. A "No Go" rating on any of the steps constitutes a "No Go" for the entire performance skill. Performance skills must be completed with 100% accuracy.
3. Both the individual taking the performance evaluation and the qualified observer must sign this form upon completion of the evaluation.

Performance Step Analysis		Go	No Go
1	Test the ABC extinguisher: 1. Place in upright position 2. Stand to side 3. Hold nozzle away from body 4. Depress plunger 5. Point nozzle in air and apply a quick squeeze to release a small amount of chemical		
2	Take a position approx. 8 to 10 feet upwind of the fire with the extinguisher ready		
3	Point nozzle at front edge of fire and squeeze nozzle, releasing powder		
4	Walk towards fire, continuing to release powder, and aim powder stream to the base of the fire		
5	Move the stream of powder into the flow of gas, extinguishing the fire by sweeping the area of the source of fire		
6	When the fire is out, back away from the extinguished fire and stand by in case of a reflash		
Comments:			

Participant Name: _____ **I.D. Number:** _____

Test Date: _____ **Location:** _____

Evaluation: ☐ **Qualified** ☐ **Not Qualified**

_____ _____

Qualified Observer Signature Participant Signature

Competency/skill: 4.6 Atmospheric corrosion

Qualified observer instructions:

1. For the performance steps below, observe the participant and check "Go" for successful completion of the step **or** "No Go" if remediation of the step is required.
2. A "No Go" rating on any of the steps constitutes a "No Go" for the entire performance skill. Performance skills must be completed with 100% accuracy.
3. Both the individual taking the performance evaluation and the qualified observer must sign this form upon completion of the evaluation.

Performance Step Analysis		**Go**	**No Go**
Recognizing atmospheric corrosion			
1	Recognize normal rust (above grade) as surface oxidation		
2	Recognize local pitting (above grade) as atmospheric corrosion		
3	Recognize general pitting (above grade) as atmospheric corrosion		
4	Record all atmospheric corrosion patrolling efforts		
5	Report actual or potential atmospheric corrosion		
Comments:			

Participant Name: _____ **I.D. Number:** _____

Test Date: _____ **Location:** _____

Evaluation: ☐ **Qualified** ☐ **Not Qualified**

_____ _____

Qualified Observer Signature Participant Signature

Competency/skill: 4.7 Recognizing unsafe meter sets

Qualified observer instructions:

1. For the performance steps below, observe the participant and check "Go" for successful completion of the step **or** "No Go" if remediation of the step is required.
2. A "No Go" rating on any of the steps constitutes a "No Go" for the entire performance skill. Performance skills must be completed with 100% accuracy.
3. Both the individual taking the performance evaluation and the qualified observer must sign this form upon completion of the evaluation.

Performance Step Analysis		Go	No Go
1	If indoor meter, is it readily accessible. Make sure it is not: • In an enclosed space • In a living area • Within 3 feet of a possible ignition source		
2	If outdoor meter, is it: • Protected from water runoff, falling objects, and damage by vehicles, lawn mowers, etc. • At least 3 feet from any source of ignition • A safe distance from any air intakes and windows		
3	The meter set has not been covered by: earth movement, structures or additions, trees or bushes or other obstructions		
4	Checked meter set for damage		
5	Piping is not bent or under stress from the building wall or other objects		
6	If plastic service line underground, it was not under stress		
7	Meter set and all associated piping is no rusting or pitting		
8	Paint and other coating is in good condition; not peeling or flaking		
9	Reported any unsafe condition to utility for corrective action		
Comments:			

Participant Name: _____ **I.D. Number:** _____

Test Date: _____ **Location:** _____

Evaluation: ☐ **Qualified** ☐ **Not Qualified**

_____ _____

Qualified Observer Signature Participant Signature

Competency/skill: 4.8 Confined space entry (vaults, trenches, etc.)

Qualified observer instructions:

1. For the performance steps below, observe the participant and check "Go" for successful completion of the step **or** "No Go" if remediation of the step is required.
2. A "No Go" rating on any of the steps constitutes a "No Go" for the entire performance skill. Performance skills must be completed with 100% accuracy.
3. Both the individual taking the performance evaluation and the qualified observer must sign this form upon completion of the evaluation.

Performance Step Analysis		Go	No Go
1	If confined space permit is required, have it and make sure all information is correct.		
2	Check for warning signs near excavation or vault.		
3	Check for lockout/tagout points.		
4	If needed, install shoring equipment at excavations.		
5	Before entry, test atmosphere for oxygen deficiency, toxic substances, and particulate material.		
6	Before entry, check with CGI, if gas found ventilate.		
7	Review area for possible sources of accidental ignition. Take appropriate precautions e.g. fire extinguisher or eliminate source.		
8	On vault, if it does not fully open station a least 1 worker at entrance before entry.		
9	Wear all required PPE and rescue equipment e.g. fire retardant clothing, SCBA, body harness.		
10	Inspect all safety & rescue equipment before use.		
11	If needed, provide appropriate lighting for work area.		
12	If needed, provide pumps or other water removal equipment.		
13	If feeling dizzy or light-headed in vault or excavation, leave the vault immediately.		
14	If person outside of vault or excavation, the worker inside becomes unconscious, remove them by rescue harness & lift device. Maintain voice contact with each other at all times.		
15	If assistance is needed, call for help immediately through dispatcher or local rescue service. (Preplan what resources are capable to perform this type of rescue)		
Comments:			

Participant Name: _____ **I.D. Number:** _____

Test Date: _____ **Location:** _____

Evaluation: ❑ **Qualified** ❑ **Not Qualified**

_____ _____

Qualified Observer Signature Participant Signature

Competency/skill: 4.9 Job site protection

Qualified observer instructions:

1. For the performance steps below, observe the participant and check "Go" for successful completion of the step **or** "No Go" if remediation of the step is required.
2. A "No Go" rating on any of the steps constitutes a "No Go" for the entire performance skill. Performance skills must be completed with 100% accuracy.
3. Both the individual taking the performance evaluation and the qualified observer must sign this form upon completion of the evaluation.

Performance Step Analysis		Go	No Go
1	Pre-plan job so that notifications were given to residents, business owners, post office and emergency crews. Pre-plan also included reviewing all necessary traffic protection equipment and device distances. It is suggested to have a written plan in high speed, high traffic volume to insure you have enough devices		
2	Set up jobsite according to the MUTCD book starting away from the job site and work towards it		
3	Have appropriate PPE's, vests, hardhats, etc…		
4	If needed, flagger(s) with appropriate training and equipment are stationed		
5	Maintain warning devices during the entire job		
6	Remove devices starting at the job site and work away from it		
Comments:			

Participant Name: _____ **I.D. Number:** _____

Test Date: _____ **Location:** _____

Evaluation: ☐ **Qualified** ☐ **Not Qualified**

_____ _____

Qualified Observer Signature Participant Signature

Competency/skill: 4.10 Purging safety

Qualified observer instructions:

1. For the performance steps below, observe the participant and check "Go" for successful completion of the step **or** "No Go" if remediation of the step is required.
2. A "No Go" rating on any of the steps constitutes a "No Go" for the entire performance skill. Performance skills must be completed with 100% accuracy.
3. Both the individual taking the performance evaluation and the qualified observer must sign this form upon completion of the evaluation.

Performance Step Analysis		Go	No Go
1	Eliminates sources of ignition		
2	Ensures that the area above the pipe where gas will vent is safe (no air intakes, windows, etc.)		
3	Opens the valve to purge air out as rapidly as possible (Takes care not to trip excess flow valve, if present)		
4	Closes the valve when gas odor is detected (CGI reading, etc.)		
Comments:			

Participant Name: _____ **I.D. Number:** _____

Test Date: _____ **Location:** _____

Evaluation: ❑ **Qualified** ❑ **Not Qualified**

_____ _____

Qualified Observer Signature Participant Signature

Competency/skill: 4.11 Pressure testing steel & plastic pipeline

Qualified observer instructions:

1. For the performance steps below, observe the participant and check "Go" for successful completion of the step **or** "No Go" if remediation of the step is required.
2. A "No Go" rating on any of the steps constitutes a "No Go" for the entire performance skill. Performance skills must be completed with 100% accuracy.
3. Both the individual taking the performance evaluation and the qualified observer must sign this form upon completion of the evaluation.

Performance Step Analysis		Go	No Go
Prepare the Pressure Test			
1	Isolate the test segment by sealing any open ends.		
2	Reinforce compression joints as required.		
3	Connect the pressure testing equipment.		
Conduct the Test			
4	Pressurize the line to the calculated test pressure.		
5	If a pipe segment will be tested to 20% or more of SMYS, and if the test medium is natural gas, inert gas, or air: -Make a leak test at a pressure between 100 psig and the pressure required to produce a hoop stress of 20% of SMYS. -Walk the line to check for leaks while holding the hoop stress at approx. 20% of SMYS. -Bring the pressure up to test pressure for a minimum of 1 hour or as required.		
Determine the Test Results			
6	Compare the readings before and after the test. (If there is any pressure drop during the test, consider whether the drop was produced by temp change.)		
Locate & Repair Leaks			
7	If the pressure drop was 1 psig or more below initial pressure, repair.		
8	After the repair, repeat the test.		
Prepare the Pipe For Operation			
9	Purge and tie in the pipe.		
10	Remove any temporary reinforcements, as required.		
Documentation			
11	Document test per O&M.		
See reverse side for any comments:			

Participant Name: _____ **I.D. Number:** _____

Test Date: _____ **Location:** _____

Evaluation: ☐ **Qualified** ☐ **Not Qualified**

_____ _____

Qualified Observer Signature Participant Signature

Competency/skill: 4.12 Abandoning facilities

Qualified observer instructions:

1. For the performance steps below, observe the participant and check "Go" for successful completion of the step **or** "No Go" if remediation of the step is required.
2. A "No Go" rating on any of the steps constitutes a "No Go" for the entire performance skill. Performance skills must be completed with 100% accuracy.
3. Both the individual taking the performance evaluation and the qualified observer must sign this form upon completion of the evaluation.

Performance Step Analysis		Go	No Go
1	Ensure proper purging of gas prior to abandonment/deactivation		
2	Properly seal both ends of pipeline segment prior to backfilling		
3	Record location of abandoned/deactivated pipeline facility when not removed		
4	Properly backfill excavation area(s) taking care not to damage live pipeline facilities and other utilities nearby		
5	Update all records and maps to show abandoned line(s), update DIMP records		
Comments:			

Participant Name: _____ **I.D. Number:** _____

Test Date: _____ **Location:** _____

Evaluation: ☐ **Qualified** ☐ **Not Qualified**

_____ _____

Qualified Observer Signature Participant Signature

Competency/skill: 4.13 Excavation safety

Qualified observer instructions:

1. For the performance steps below, observe the participant and check "Go" for successful completion of the step **or** "No Go" if remediation of the step is required.
2. A "No Go" rating on any of the steps constitutes a "No Go" for the entire performance skill. Performance skills must be completed with 100% accuracy.
3. Both the individual taking the performance evaluation and the qualified observer must sign this form upon completion of the evaluation.

Performance Step Analysis		Go	No Go
1	Have a Competent Person trained to evaluate site		
2	Follow the Excavation and Trenching Clipboard System – Job Planning found in the IAMU O&M Plan		
3	Complete the Initial Safety Checklist (found in the O&M Plan)		
4	Complete the Soil Testing Results sheet (O&M)		
5	Complete Daily Inspection Report sheet (O&M)		
Comments:			

Participant Name: _____ **I.D. Number:** _____

Test Date: _____ **Location:** _____

Evaluation: ☐ **Qualified** ☐ **Not Qualified**

_____ _____

Qualified Observer Signature Participant Signature

Competency/skill: 5.1 Leak classification

Qualified observer instructions:

1. For the performance steps below, observe the participant and check "Go" for successful completion of the step **or** "No Go" if remediation of the step is required.
2. A "No Go" rating on any of the steps constitutes a "No Go" for the entire performance skill. Performance skills must be completed with 100% accuracy.
3. Both the individual taking the performance evaluation and the qualified observer must sign this form upon completion of the evaluation.

Performance Step Analysis		Go	No Go
1	Recognizes Class 1 leaks: Leak inside building Leak at building perimeter (outside) Company policies for Grade 1 leaks Any leak which can be seen, heard or felt		
2	Understands reaction to a Class 1 leak: Make area safe protecting life and property first Record company required information and schedule leak for immediate repair		
3	Recognize Class 2 and Class 3 leaks: Leak on exposed company piping and appurtenances Company policies for Grade 2 leak Any Class 3 leak which may migrate underground frost conditions		
4	React to Class 2 and Class 3 leak: Record company required information		
Comments:			

Participant Name: _____ **I.D. Number:** _____

Test Date: _____ **Location:** _____

Evaluation: ☐ **Qualified** ☐ **Not Qualified**

_____ _____

Qualified Observer Signature Participant Signature

Competency/skill: 5.2 Leak surveys and patrols

Qualified observer instructions:

1. For the performance steps below, observe the participant and check “Go” for successful completion of the step **or** “No Go” if remediation of the step is required.
2. A “No Go” rating on any of the steps constitutes a “No Go” for the entire performance skill. Performance skills must be completed with 100% accuracy.
3. Both the individual taking the performance evaluation and the qualified observer must sign this form upon completion of the evaluation.

Performance Step Analysis		Go	No Go
1	Identify available openings(over and inside manhole covers, catch basins, sewer openings, telephone duct openings, fire/traffic signal boxes, curb line/pavement/sidewalk cracks, basement/foundation cracks, vaults and other available surface openings)		
2	Sketch mains and service lines in survey area\ including available openings and other surveyed structures.		
3	Determines leak source using survey data according to company procedures		
4	Understands when a barhole leak survey is necessary in order to assist in determining the leak sources		
5	Utilizes vegetative survey analysis as a supplement to instrument survey		
6	Able to conduct effective survey with wind, ice/snow surface sealing conditions		
7	Prepares leak investigation/survey reports, diagrams and forms		
Comments:			

Participant Name: _____ **I.D. Number:** _____

Test Date: _____ **Location:** _____

Evaluation: ☐ **Qualified** ☐ **Not Qualified**

_____ _____

Qualified Observer Signature Participant Signature

Competency/skill: 5.3 Combustible gas indicators

Qualified observer instructions:

1. For the performance steps below, observe the participant and check “Go” for successful completion of the step **or** “No Go” if remediation of the step is required.
2. A “No Go” rating on any of the steps constitutes a “No Go” for the entire performance skill. Performance skills must be completed with 100% accuracy.
3. Both the individual taking the performance evaluation and the qualified observer must sign this form upon completion of the evaluation.

Performance Step Analysis		Go	No Go
1	Turn on power		
2	Warm up battery check		
3	Set zero in fresh air		
4	Test gas in L.E.L. mode		
5	Test gas in U.E.L. mode		
6	Clear machine in fresh air		
7	Shut down		
8	Store in proper manner		
Comments:			

Participant Name: _____ **I.D. Number:** _____

Test Date: _____ **Location:** _____

Evaluation: ☐ **Qualified** ☐ **Not Qualified**

_____ _____

Qualified Observer Signature Participant Signature

Competency/skill: 5.4 Electronic gas detectors

Qualified observer instructions:

1. For the performance steps below, observe the participant and check “Go” for successful completion of the step **or** “No Go” if remediation of the step is required.
2. A “No Go” rating on any of the steps constitutes a “No Go” for the entire performance skill. Performance skills must be completed with 100% accuracy.
3. Both the individual taking the performance evaluation and the qualified observer must sign this form upon completion of the evaluation.

Performance Step Analysis		**Go**	**No Go**
Start Up / Shut Down			
1	Turn on power / Allow for warm up		
2	Check battery power		
3	Set zero in fresh air		
4	Test gas in L.E.L. mode		
5	Test gas in U.E.L. mode		
6	Purge in fresh air		
7	Shut down		
8	Store in proper containment		
Comments:			

Participant Name: _____ **I.D. Number:** _____

Test Date: _____ **Location:** _____

Evaluation: ☐ **Qualified** ☐ **Not Qualified**

_____ _____

Qualified Observer Signature Participant Signature

Competency/skill: 5.4.1 Remote methane leak detector (RMLD)

Qualified observer instructions:

1. For the performance steps below, observe the participant and check "Go" for successful completion of the step **or** "No Go" if remediation of the step is required.
2. A "No Go" rating on any of the steps constitutes a "No Go" for the entire performance skill. Performance skills must be completed with 100% accuracy.
3. Both the individual taking the performance evaluation and the qualified observer must sign this form upon completion of the evaluation.

Performance Step Analysis		**Go**	**No Go**
Start Up / Shut Down			
1	Depress power button		
2	Adjust volume		
3	Alarm detection threshold		
4	Perform self-test – ppm-m, then document test		
5	Return to DMD Mode		
6	Survey 15' – 20' ahead of operator (not to exceed 100')		
7	Survey in sweeping motion		
8	Shut down		
9	Store in proper containment		
Comments:			

Participant Name: _____ **I.D. Number:** _____

Test Date: _____ **Location:** _____

Evaluation: ☐ **Qualified** ☐ **Not Qualified**

_____ _____

Qualified Observer Signature Participant Signature

Competency/skill: 5.5 Flame ionization

Qualified observer instructions:

1. For the performance steps below, observe the participant and check "Go" for successful completion of the step **or** "No Go" if remediation of the step is required.
2. A "No Go" rating on any of the steps constitutes a "No Go" for the entire performance skill. Performance skills must be completed with 100% accuracy.
3. Both the individual taking the performance evaluation and the qualified observer must sign this form upon completion of the evaluation.

Performance Step Analysis		**Go**	**No Go**
Visual inspection and filter change			
1	Visually inspect the FI unit to detect any damage or flaws.		
2	Check the intake cone filter. Install a new filter so that it is properly seated according to manufacturers and Company specifications.		
3	Check the in-line filter. Install a new filter so that it is properly seated according to manufacturers and Company specifications.		
4	Check the probe. Clean if dirty.		
Refueling			
5	Connect the FI unit to the fuel supply tank.		
6	Fill the FI unit fuel tanks to the proper level.		
7	Safely disconnect the FI unit from the fuel supply, ensuring that all connections are appropriately closed.		
Calibrating			
8	Make sure that the FI unit has been tested for accuracy.		
9	Turn the FI unit **POWER** and the **IGNITION** to **ON**.		
10	Set the **SENSITIVITY** to **50 PPM**.		
11	Hold the sensor head (intake cone) over the test cup of the certified 50 ppm gas sample.		
12	Turn the 50 ppm gas sample **ON** at **MINIMUM** flow.		
13	Watch the needle on the FI unit for full deflection.		
14	If the needle does not reach full deflection in 3 seconds, report the unit according to Company policy.		
See reverse side for any comments:			

Participant Name: _____ **I.D. Number:** _____

Test Date: _____ **Location:** _____

Evaluation: ☐ **Qualified** ☐ **Not Qualified**

_____ _____

Qualified Observer Signature Participant Signature

Competency/skill: 5.6 Bar hole testing and purging

Qualified observer instructions:

1. For the performance steps below, observe the participant and check "Go" for successful completion of the step **or** "No Go" if remediation of the step is required.
2. A "No Go" rating on any of the steps constitutes a "No Go" for the entire performance skill. Performance skills must be completed with 100% accuracy.
3. Both the individual taking the performance evaluation and the qualified observer must sign this form upon completion of the evaluation.

Performance Step Analysis		Go	No Go
1	Make bar holes at 10' intervals		
2	Inserts hose or probe tube into barholes at proper depth		
3	Recording of barhole test readings on diagram		
4	Establish extent of leak		
5	Establish strongest reading		
6	Allow to vent / Re-test		
7	Locate approximate location of leak		
8	Document prior to digging		
9	Classify leak		
Comments:			

Participant Name: _____ **I.D. Number:** _____

Test Date: _____ **Location:** _____

Evaluation: ☐ **Qualified** ☐ **Not Qualified**

_____ _____

Qualified Observer Signature Participant Signature

Competency/skill: 6.1 Carbon monoxide testing

Qualified observer instructions:

1. For the performance steps below, observe the participant and check “Go” for successful completion of the step **or** “No Go” if remediation of the step is required.
2. A “No Go” rating on any of the steps constitutes a “No Go” for the entire performance skill. Performance skills must be completed with 100% accuracy.
3. Both the individual taking the performance evaluation and the qualified observer must sign this form upon completion of the evaluation.

Performance Step Analysis		**Go**	**No Go**
Start up / Shut down			
1	Turn on power; allow to warm up.		
2	Check battery power.		
3	Set zero in fresh air.		
4	Purge in fresh air.		
5	Shut down.		
6	Store in proper container.		
Comments:			

Participant Name: _____ **I.D. Number:** _____

Test Date: _____ **Location:** _____

Evaluation: ☐ **Qualified** ☐ **Not Qualified**

_____ _____

Qualified Observer Signature Participant Signature

Competency/skill: 6.2 Leak investigation (inside)

Qualified observer instructions:

1. For the performance steps below, observe the participant and check "Go" for successful completion of the step **or** "No Go" if remediation of the step is required.
2. A "No Go" rating on any of the steps constitutes a "No Go" for the entire performance skill. Performance skills must be completed with 100% accuracy.
3. Both the individual taking the performance evaluation and the qualified observer must sign this form upon completion of the evaluation.

Performance Step Analysis		Go	No Go
1	Clear and zero CGI at curbside or outside of building in a gas-free atmosphere		
2	Knock on building entrance door and never uses a doorbell or phone		
3	Make personal identification to occupant(s), and begins inside leakage survey		
4	Begin leak survey inside threshold of building, starting near or at ceiling level progressing downward to floor level. Continues survey throughout building including additional upper/lower floors, as applicable, paying close attention to gas appliance locations. Additional testing for gas migrating from outside the structure may be required		
5	Interpret any positive CGI gas reading relative to flammability range of natural gas and the potential necessity for evacuation of occupant(s)		
6	Provide evacuation and shelter assistance to occupant(s), as necessary		
7	Recognize when to implement gas company Emergency Response Plan, as necessary		
8	Request Fire and/or Police assistance, as necessary		
9	Eliminate gas source and ignition sources, as necessary, based on survey results		
10	Record all activities on appropriate company forms		
Comments:			

Participant Name: _____ **I.D. Number:** _____

Test Date: _____ **Location:** _____

Evaluation: ☐ **Qualified** ☐ **Not Qualified**

_____ _____

Qualified Observer Signature Participant Signature

Competency/skill: 6.4 Automatic pilot ignition

Qualified observer instructions:

1. For the performance steps below, observe the participant and check "Go" for successful completion of the step **or** "No Go" if remediation of the step is required.
2. A "No Go" rating on any of the steps constitutes a "No Go" for the entire performance skill. Performance skills must be completed with 100% accuracy.
3. Both the individual taking the performance evaluation and the qualified observer must sign this form upon completion of the evaluation.

Performance Step Analysis		Go	No Go
1	Shut off all gas to the appliance		
2	Turn the thermostat all the way down		
3	Wait 5 minutes until gas is completely vented		
4	Turn on the gas to the pilot		
5	Turn the control knob to the pilot position		
6	Press the pilot button and light the pilot using a lighter stick or match		
7	Wait 30 seconds, then release pilot button		
8	Turn on the main gas valve		
9	Turn up the thermostat to make sure the system heats up properly		
10	Cycle the system on and off to check thermostat and pilot safety		
Comments:			

Participant Name: _____ **I.D. Number:** _____

Test Date: _____ **Location:** _____

Evaluation: ☐ **Qualified** ☐ **Not Qualified**

_____ _____

Qualified Observer Signature Participant Signature

Competency/skill: 6.4.1 Electronic ignition

Qualified observer instructions:

1. For the performance steps below, observe the participant and check “Go” for successful completion of the step **or** “No Go” if remediation of the step is required.
2. A “No Go” rating on any of the steps constitutes a “No Go” for the entire performance skill. Performance skills must be completed with 100% accuracy.
3. Both the individual taking the performance evaluation and the qualified observer must sign this form upon completion of the evaluation.

Performance Step Analysis		Go	No Go
1	Check all wiring connections		
2	Make sure the thermostat is set to low		
3	Turn on the main gas supply and the manual valve on the gas valve		
4	Turn on the electrical power		
5	Set the thermostat to high		
6	With the main burner on, cycle the thermostat off, then on again		
7	With the main burner on, turn the manual gas valve off • Wait until all flame is out, then turn the manual gas valve on again		
8	If this is a lockout system, whit the main burner on, turn the manual gas valve off		
9	To restart the system, turn the thermostat to low for up to 1 minute, then set it high again, and turn the main valve back on		
10	Visually determine that the main burner is burning properly, as it was during the pre-installation safety inspection procedure • Adjust the primary air shutter(s) as required		
11	Check the manifold pressure • Adjust pressure regulator (if necessary) to match the original input		
Comments:			

Participant Name: _____ **I.D. Number:** _____

Test Date: _____ **Location:** _____

Evaluation: ☐ **Qualified** ☐ **Not Qualified**

_____ _____

Qualified Observer Signature Participant Signature

Competency/skill: 6.6 Appliance venting

Qualified observer instructions:

1. For the performance steps below, observe the participant and check "Go" for successful completion of the step **or** "No Go" if remediation of the step is required.
2. A "No Go" rating on any of the steps constitutes a "No Go" for the entire performance skill. Performance skills must be completed with 100% accuracy.
3. Both the individual taking the performance evaluation and the qualified observer must sign this form upon completion of the evaluation.

Performance Step Analysis		Go	No Go
Checks when establishing gas			
1	Check vent size		
2	Visually check vent piping for rust, scale, or carbon		
3	Make sure there is no flue size reduction from the draft diverter to the vent connector		
4	Ensure vent connectors are unobstructed		
5	Check proper rise on horizontal vent runs		
6	Ensure that vent connectors do not pass through combustible partitions		
7	Ensure that vents do not connect to a chimney serving a solid-fuel-burning appliance		
8	If necessary, perform a Match Test to check for adequate draft		
9	If venting system is not working, combustion products vent at the relief opening. Do not put appliances into service with unacceptable venting conditions		
10	If conditions are unacceptable; Shut off and Red Tag the appliance		
11	Inform the customer and have the customer sign the order		
Comments:			

Participant Name: _____ **I.D. Number:** _____

Test Date: _____ **Location:** _____

Evaluation: ☐ **Qualified** ☐ **Not Qualified**

_____ _____

Qualified Observer Signature Participant Signature

Competency/skill: 6.7 Pressure checks to establish gas service

Qualified observer instructions:

1. For the performance steps below, observe the participant and check "Go" for successful completion of the step **or** "No Go" if remediation of the step is required.
2. A "No Go" rating on any of the steps constitutes a "No Go" for the entire performance skill. Performance skills must be completed with 100% accuracy.
3. Both the individual taking the performance evaluation and the qualified observer must sign this form upon completion of the evaluation.

Performance Step Analysis		Go	No Go
Checking regulator outlet pressure			
1	Disconnect the inlet or outlet swivel from the meter. There may also be a tap in the meter bar		
2	Connect the manometer or spring gauge to the pressure testing adapter		
3	Open the meter stopcock slowly		
4	With the gas flowing, measure the pressure		
5	Adjust the regulator to the demand flow rate. Turn the adjustment screw: counter-clockwise to decrease pressure; clockwise to increase pressure		
6	Repair the regulator if necessary. If can't repair – replace.		
Checking lockup pressure			
7	After checking the outlet pressure, stop the flow of gas		
8	Measure the lockup pressure – on typical residential, should be no more than 1" water column above the outlet pressure.		
Checking appliance outlet pressure			
9	Attach manometer or spring gauge to the appliance regulator or the appliance manifold – read the pressure Remember that when an appliance is equipped with its own regulator you are no longer measuring the house regulator pressure		
Comments:			

Participant Name: _____ **I.D. Number:** _____

Test Date: _____ **Location:** _____

Evaluation: ☐ **Qualified** ☐ **Not Qualified**

_____ _____

Qualified Observer Signature Participant Signature

Competency/skill: 6.8 Establishing and disconnecting gas

Qualified observer instructions:

1. For the performance steps below, observe the participant and check "Go" for successful completion of the step **or** "No Go" if remediation of the step is required.
2. A "No Go" rating on any of the steps constitutes a "No Go" for the entire performance skill. Performance skills must be completed with 100% accuracy.
3. Both the individual taking the performance evaluation and the qualified observer must sign this form upon completion of the evaluation.

Performance Step Analysis		Go	No Go
Establishing gas			
1	Verified that appliances and piping are sized and/or installed correctly.		
2	Inspected meter and regulator were sized correctly and capable of controlling gas flow.		
3	Meter is in good condition and isolated electrically.		
4	Pressurize the line to the calculated test pressure.		
5.	Tested regulator outlet pressure and lock-up pressure.		
6.	Performed a low flow test then a shut-in test.		
Disconnecting gas			
7.	Closed the stopcock and recorded the meter reading.		
(one of the following was completed)			
8.	Locked or otherwise secure the valve controlling gas to the service, or		
9.	Installed a mechanical device or fitting in the service line, or meter		
10.	Disconnect the customer's piping from the gas supply.		
See reverse side for any comments:			

Participant Name: _____ **I.D. Number:** _____

Test Date: _____ **Location:** _____

Evaluation: ❑ **Qualified** ❑ **Not Qualified**

_____ _____

Qualified Observer Signature Participant Signature

Competency/skill: 7.1 Pressure testing steel & plastic pipeline

Qualified observer instructions:

1. For the performance steps below, observe the participant and check "Go" for successful completion of the step **or** "No Go" if remediation of the step is required.
2. A "No Go" rating on any of the steps constitutes a "No Go" for the entire performance skill. Performance skills must be completed with 100% accuracy.
3. Both the individual taking the performance evaluation and the qualified observer must sign this form upon completion of the evaluation.

Performance Step Analysis		Go	No Go
Prepare the Pressure Test			
1	Isolate the test segment by sealing any open ends.		
2	Reinforce compression joints as required.		
3	Connect the pressure testing equipment.		
Conduct the Test			
4	Pressurize the line to the calculated test pressure.		
5	If a pipe segment will be tested to 20% or more of SMYS, and if the test medium is natural gas, inert gas, or air: -Make a leak test at a pressure between 100 psig and the pressure required to produce a hoop stress of 20% of SMYS. -Walk the line to check for leaks while holding the hoop stress at approx. 20% of SMYS. -Bring the pressure up to test pressure for a minimum of 1 hour or as required.		
Determine the Test Results			
6	Compare the readings before and after the test. (If there is any pressure drop during the test, consider whether the drop was produced by temp change.)		
Locate & Repair Leaks			
7	If the pressure drop was 1 psig or more below initial pressure, repair.		
8	After the repair, repeat the test.		
Prepare the Pipe For Operation			
9	Purge and tie in the pipe.		
10	Remove any temporary reinforcements, as required.		
Documentation			
11	Document test per O&M.		
See reverse side for any comments:			

Participant Name: _____ **I.D. Number:** _____

Test Date: _____ **Location:** _____

Evaluation: ☐ **Qualified** ☐ **Not Qualified**

_____ _____

Qualified Observer Signature Participant Signature

Competency/skill: 7.2 Abandoning facilities

Qualified observer instructions:

1. For the performance steps below, observe the participant and check "Go" for successful completion of the step **or** "No Go" if remediation of the step is required.
2. A "No Go" rating on any of the steps constitutes a "No Go" for the entire performance skill. Performance skills must be completed with 100% accuracy.
3. Both the individual taking the performance evaluation and the qualified observer must sign this form upon completion of the evaluation.

Performance Step Analysis		Go	No Go
1	Ensure proper purging of gas prior to abandonment/deactivation		
2	Properly seal both ends of pipeline segment prior to backfilling		
3	Record location of abandoned/deactivated pipeline facility when not remove		
4	Properly backfill excavation area(s) taking care not to damage live pipeline facilities and other utilities nearby		
5	Update all records and maps to show abandoned line(s)		
Comments:			

Participant Name: _____ **I.D. Number:** _____

Test Date: _____ **Location:** _____

Evaluation: ☐ **Qualified** ☐ **Not Qualified**

_____ _____

Qualified Observer Signature Participant Signature

Competency/skill: 7.3 Cathodic protection - Pipe-to-soil

Qualified observer instructions:

1. For the performance steps below, observe the participant and check “Go” for successful completion of the step **or** “No Go” if remediation of the step is required.
2. A “No Go” rating on any of the steps constitutes a “No Go” for the entire performance skill. Performance skills must be completed with 100% accuracy.
3. Both the individual taking the performance evaluation and the qualified observer must sign this form upon completion of the evaluation.

Performance Step Analysis		**Go**	**No Go**
Performing Pipe-To-Soil			
1	Charge half-cell.		
2	Check calibration (voltage resistance).		
3	Connection to voltmeter (+).		
4	Connection to Voltmeter (-).		
5	Connect lead to half-cell.		
6	Connect lead to system.		
7	Take voltage reading.		
8	Documentation.		
Comments:			

Participant Name: _____ **I.D. Number:** _____

Test Date: _____ **Location:** _____

Evaluation: ☐ **Qualified** ☐ **Not Qualified**

_____ _____

Qualified Observer Signature Participant Signature

Competency/skill: 7.3.1 Inspect rectifier and obtain reading

Qualified observer instructions:

1. For the performance steps below, observe the participant and check “Go” for successful completion of the step **or** “No Go” if remediation of the step is required.
2. A “No Go” rating on any of the steps constitutes a “No Go” for the entire performance skill. Performance skills must be completed with 100% accuracy.
3. Both the individual taking the performance evaluation and the qualified observer must sign this form upon completion of the evaluation.

Performance Step Analysis		**Go**	**No Go**
Performing inspection of rectifier and obtain readings			
1	Check cabinet with back of hand		
2	Check condition of cabinet		
3	Check voltage and current gauges		
4	Check rheostat setting and record		
5	Measure amps across the shunt and record		
6	Take voltage from line side and record		
7	Take pipe to soil reading and record		
Comments:			

Participant Name: _____ **I.D. Number:** _____

Test Date: _____ **Location:** _____

Evaluation: ☐ **Qualified** ☐ **Not Qualified**

_____ _____

Qualified Observer Signature Participant Signature

Competency/skill: 7.5 Operating thermite welder

Qualified observer instructions:

1. For the performance steps below, observe the participant and check "Go" for successful completion of the step **or** "No Go" if remediation of the step is required.
2. A "No Go" rating on any of the steps constitutes a "No Go" for the entire performance skill. Performance skills must be completed with 100% accuracy.
3. Both the individual taking the performance evaluation and the qualified observer must sign this form upon completion of the evaluation.

Performance Step Analysis		Go	No Go
Preparing the pipe			
1	Place fire extinguisher upwind.		
2	Put on personal protective equipment including gloves and eye protection.		
3	Remove coating from 3" x 3" area at weld location.		
4	Use wire brush and file to clean pipe to shiny metal.		
Preparing the wire			
5	Strip 2" insulation from wire.		
6	Scrape, file, or sand the bare end clean.		
7	Crimp copper sleeve on wire.		
8	Wrap wire around pipe and twist it.		
9	Inspect mold for defects and correct size.		
10	Place steel disk in mold.		
11	Place welding and starting powder into the mold.		
Preparing the mold			
12	Place mold on pipe at prepared location.		
13	Insert wire in mold.		
14	Set the mold with wire parallel to the pipe.		
15	Hold mold firmly		
16	Ignite with sparking gun.		
17	Tape to test weld.		
Making the weld			
18	Repair coating.		
Comments: (see reverse)			

Participant Name: _____ **I.D. Number:** _____

Test Date: _____ **Location:** _____

Evaluation: ☐ **Qualified** ☐ **Not Qualified**

_____ _____

Qualified Observer Signature Participant Signature

Competency/skill: 7.6 Installing tracer wire

Qualified observer instructions:

1. For the performance steps below, observe the participant and check "Go" for successful completion of the step **or** "No Go" if remediation of the step is required.
2. A "No Go" rating on any of the steps constitutes a "No Go" for the entire performance skill. Performance skills must be completed with 100% accuracy.
3. Both the individual taking the performance evaluation and the qualified observer must sign this form upon completion of the evaluation.

Performance Step Analysis		Go	No Go
1	Cover pipe 6" to maintain gap.		
2	Splice & water proof connections.		
3	Leave slack for settling.		
4	Inspect pipe for coating break.		
5	Thermite weld wire to pipe and coat.		
6	Backfill with clean spoil.		
7	Add fittings (size and type) to map and DIMP plan		
Comments: (see reverse)			

Participant Name: _____ **I.D. Number:** _____

Test Date: _____ **Location:** _____

Evaluation: ☐ **Qualified** ☐ **Not Qualified**

_____ _____

Qualified Observer Signature Participant Signature

Competency/skill: 7.7 Installing valve poly)

Qualified observer instructions:

1. For the performance steps below, observe the participant and check “Go” for successful completion of the step **or** “No Go” if remediation of the step is required.
2. A “No Go” rating on any of the steps constitutes a “No Go” for the entire performance skill. Performance skills must be completed with 100% accuracy.
3. Both the individual taking the performance evaluation and the qualified observer must sign this form upon completion of the evaluation.

Performance Step Analysis		Go	No Go
1	Expose pipe		
2	Squeeze off line or otherwise isolate		
3	Cut out section of pipe to accommodate valve		
4	Connect valve using approved method		
5	Remove squeeze off		
6	Leak test connections		
7	Restore service to effected area		
8	Add new valve to maps and records		
9	Add fitting (size and type) to map and update DIMP plan		
Comments:			

Participant Name: _____ **I.D. Number:** _____

Test Date: _____ **Location:** _____

Evaluation: ☐ **Qualified** ☐ **Not Qualified**

_____ _____

Qualified Observer Signature Participant Signature

Competency/skill: 7.7.1 Installing valve (steel)

Qualified observer instructions:

1. For the performance steps below, observe the participant and check “Go” for successful completion of the step **or** “No Go” if remediation of the step is required.
2. A “No Go” rating on any of the steps constitutes a “No Go” for the entire performance skill. Performance skills must be completed with 100% accuracy.
3. Both the individual taking the performance evaluation and the qualified observer must sign this form upon completion of the evaluation.

Performance Step Analysis		Go	No Go
1	Expose pipe		
2	Stop off line or otherwise isolate		
3	Cut out section of pipe to accommodate valve		
4	Connect valve using approved method (either weld or flanged)		
5	Remove stop off and install completion plug and cap		
6	Leak test connections		
7	Restore service to effected area		
8	Add new valve to maps and records		
9	Add stopple fitting (size and type) to map and update DIMP plan		
Comments:			

Participant Name: _____ **I.D. Number:** _____

Test Date: _____ **Location:** _____

Evaluation: ☐ **Qualified** ☐ **Not Qualified**

_____ _____

Qualified Observer Signature Participant Signature

Competency/skill: 7.8 Steel and cast iron repair fittings

Qualified observer instructions:

1. For the performance steps below, observe the participant and check "Go" for successful completion of the step **or** "No Go" if remediation of the step is required.
2. A "No Go" rating on any of the steps constitutes a "No Go" for the entire performance skill. Performance skills must be completed with 100% accuracy.
3. Both the individual taking the performance evaluation and the qualified observer must sign this form upon completion of the evaluation.

Performance Step Analysis		Go	No Go
1	Check atmosphere in bell hole.		
2	Check pipe condition for replacement.		
3	Clean coating and other foreign material adequately.		
4	Lubricate gasket material.		
5	Torque bolts in proper sequence.		
6	Check for leaks/other damage.		
7	Properly coat before backfilling.		
Comments:			

Participant Name: _____ **I.D. Number:** _____

Test Date: _____ **Location:** _____

Evaluation: ❑ **Qualified** ❑ **Not Qualified**

_____ _____

Qualified Observer Signature Participant Signature

Competency/skill: 7.11 Plastic pipe joining (butt fusion)

Qualified observer instructions:

1. For the performance steps below, observe the participant and check "Go" for successful completion of the step **or** "No Go" if remediation of the step is required.
2. A "No Go" rating on any of the steps constitutes a "No Go" for the entire performance skill. Performance skills must be completed with 100% accuracy.
3. Both the individual taking the performance evaluation and the qualified observer must sign this form upon completion of the evaluation.

Performance Step Analysis		Go	No Go
1	Clean inside and outside of the pipe, then securely fasten the pipe to be joined. Check alignment of the ends and adjust as needed.		
2	The pipe ends must be faced to establish a clean, parallel mating surface. Check alignment, if not aligned, re-adjust and re-face.		
3	Have heater tool set to proper temperature. Install the heater in the fusion machine and bring the pipe ends into full contact with the heater with moderate pressure. Then relax pressure and heat until desired rolled bead develops.		
4	Remove heater tool, then quickly inspect the pipe ends for proper melt. (No concaved surface) Then immediately bring the molten pipe ends together with sufficient fusion force to form a double rollback bead against the pipe wall.		
5	Hold under fusion force until joint has cooled adequately. Avoid pulling, installation or rough handling for an additional 30 minutes or longer for thicker walled pipe. .		
6	Visual inspect. If for qualification, conduct a strap test according to the latest revision of the PPI standard.		
Comments:			

Participant Name: _____ **I.D. Number:** _____

Test Date: _____ **Location:** _____

Evaluation: ❑ **Qualified** ❑ **Not Qualified**

_____ _____

Qualified Observer Signature Participant Signature

Competency/skill: 7.11.1 Plastic pipe joining (electrofusion)

Qualified observer instructions:

1. For the performance steps below, observe the participant and check "Go" for successful completion of the step **or** "No Go" if remediation of the step is required.
2. A "No Go" rating on any of the steps constitutes a "No Go" for the entire performance skill. Performance skills must be completed with 100% accuracy.
3. Both the individual taking the performance evaluation and the qualified observer must sign this form upon completion of the evaluation.

Performance Step Analysis		Go	No Go
1	Clean pipe ends and ensure that pipe ends are cut squarely removing any cuts, scratches or grooves.		
2	Mark the stab depth on pine ends. Mark O.D. with "Sharpie" and surface pipe ends using the properly sized scraper until all sharpie marks are removed.		
3	Insert pipe ends into fitting. When fusing a tapping tee, prepare the fusion area surface of the main. Ensure that the prepared surface extends beyond the intended melt bead area.		
4	Apply properly sized fitting clamps to maintain fitting and pipe alignment.		
5	Attach electrofusion machine leads to the machine and fitting. Scan the fitting code / or depending on machine, the machine will read the fitting size and type when started. Turn on machine.		
6	Press the fusion button. Fusion and cooling times before rough handling and leak test pressure application, will appear on the machine read out.		
7	After prescribed cooling time, remove leads from fitting and remove alignment clamps.		
Comments:			

Participant Name: _____ **I.D. Number:** _____

Test Date: _____ **Location:** _____

Evaluation: ❑ **Qualified** ❑ **Not Qualified**

_____ _____

Qualified Observer Signature Participant Signature

Competency/skill: 7.11.2 Plastic pipe joining (saddle fusion)

Qualified observer instructions:

1. For the performance steps below, observe the participant and check "Go" for successful completion of the step **or** "No Go" if remediation of the step is required.
2. A "No Go" rating on any of the steps constitutes a "No Go" for the entire performance skill. Performance skills must be completed with 100% accuracy.
3. Both the individual taking the performance evaluation and the qualified observer must sign this form upon completion of the evaluation.

Performance Step Analysis		Go	No Go
1	Install and center saddle fusion tool (tool) onto the pipe; pipe needs to be clean and in a dry location. Secure the tool to the pipe.		
2	Abrade the fusion surface larger than the area covered by the fitting base of the pipe with a 50-60 grit paper. After abrading, brush residue away with a clean, dry cloth.		
3	Abrade the fusion surface of the fitting with 50-60 grit paper; remove all dust and residue.		
4	Insert the fitting in the tool, loosely. Using the tool, move the fitting base against the main pipe and apply about 100 pounds-force to seat the fitting. Secure the fitting in the tool.		
5	The heater must be fitted with the correct heater adapters. The temperature of the heater surface must be 490-510° F. Place the heater on the pipe centered beneath the fitting base. Immediately move the fitting against the heater faces, apply the initial heat force, usually 3-5 seconds.		
6	Reduce initial heat force to the heat soak force until desired time or bead-up. At the end of the heat process, remove the tool from the fitting and pipe with a quick snap. Quickly check the melt pattern for even pattern.		
7	Press the fitting onto the pipe, within 3 seconds, and apply fusion force for the recommend time, depending on pipe size; generally 5-10 minutes. Assembly should cool for additional 30 minutes before rough handling or tapping.		
Comments:			

Participant Name: _____ **I.D. Number:** _____

Test Date: _____ **Location:** _____

Evaluation: ☐ **Qualified** ☐ **Not Qualified**

_____ _____

Qualified Observer Signature Participant Signature

Competency/skill: 7.11.3 Plastic pipe joining (socket fusion)

Qualified observer instructions:

1. For the performance steps below, observe the participant and check "Go" for successful completion of the step **or** "No Go" if remediation of the step is required.
2. A "No Go" rating on any of the steps constitutes a "No Go" for the entire performance skill. Performance skills must be completed with 100% accuracy.
3. Both the individual taking the performance evaluation and the qualified observer must sign this form upon completion of the evaluation.

Performance Step Analysis		**Go**	**No Go**
1	Prepare pipe end by cutting off damaged or oval ends, cut squarely with pipe cutter. Clean and dry pipe end and fitting, both inside and out. Chamfer end of pipe, remove shavings and burrs inside pipe end.		
2	Set the depth measurement and place the cold ring clamp on the pipe.		
3	Place the fitting in socket fitting holder and tighten.		
4	Clean and dry pipe and fitting mating surfaces.		
5	Set heater to proper temperature. Firmly seat the socket fitting on the male adapter on the heater. Place the female adapter of the heater over the end of the pipe, firmly against the cold ring clamp. Heat the pipe end and fitting socket for the time required.		
6	Simultaneously remove the pipe and fitting straight out from the tool, using a snap action.		
7	Quickly inspect the heated parts to make sure all surfaces have been melted properly. Immediately firmly push the melted fitting squarely on the pipe until it makes firm contact with the cold ring clamp. Don't twist or rotate the fitting.		
8	Hold the fitting firmly in place for the total cooling time. Remove clamp, inspect the joint.		
Comments:			

Participant Name: _____ **I.D. Number:** _____

Test Date: _____ **Location:** _____

Evaluation: ☐ **Qualified** ☐ **Not Qualified**

_____ _____

Qualified Observer Signature Participant Signature

Competency/skill: 7.12 Plastic pipe joining (mechanical couplings)

Qualified observer instructions:

1. For the performance steps below, observe the participant and check "Go" for successful completion of the step **or** "No Go" if remediation of the step is required.
2. A "No Go" rating on any of the steps constitutes a "No Go" for the entire performance skill. Performance skills must be completed with 100% accuracy.
3. Both the individual taking the performance evaluation and the qualified observer must sign this form upon completion of the evaluation.

Performance Step Analysis		Go	No Go
1	Cut ends of pipe square		
2	Clean ends of pipe		
3	Measure ends of pipe for insertion		
4	Install locking collar and insert		
5	Install locking collar over insert		
6	Repeat steps 1 through 5		
Comments:			

Participant Name: _____ **I.D. Number:** _____

Test Date: _____ **Location:** _____

Evaluation: ☐ **Qualified** ☐ **Not Qualified**

_____ _____

Qualified Observer Signature Participant Signature

Competency/skill: 7.12.1 Plastic pipe joining (mechanical stab fitting)

Qualified observer instructions:

1. For the performance steps below, observe the participant and check "Go" for successful completion of the step **or** "No Go" if remediation of the step is required.
2. A "No Go" rating on any of the steps constitutes a "No Go" for the entire performance skill. Performance skills must be completed with 100% accuracy.
3. Both the individual taking the performance evaluation and the qualified observer must sign this form upon completion of the evaluation.

Performance Step Analysis		Go	No Go
1	Cut the pipe end squarely at a point where the gasket sealing surface of the fitting will be on a smooth, abrasion free surface.		
2	Clean thoroughly to ensure there is no dirt, grease, oil, etc., on the outside of the pipe.		
3	Use the appropriate chamfering tool, for the fitting type, to cut a chamfer on the end of the pipe.		
4	Mark the stab depth on the pipe. The stab depth is noted on the fitting package. It is the approximate distance from the fitting to the end of the fitting body.		
5	Stab the pipe into the fitting so that the stab depth mark is visible within 1/8" of the moisture seal. - The pipe must bottom out in the fitting. - When pressure is applied or the pipe is pulled on, the reference mark may move slightly.		
6	Pull on the pipe to make sure the gripper ring is working.		
7	Repeat steps 1 through 6 for the other end of pipe.		
Comments:			

Participant Name: _____ **I.D. Number:** _____

Test Date: _____ **Location:** _____

Evaluation: ❑ **Qualified** ❑ **Not Qualified**

_____ _____

Qualified Observer Signature Participant Signature

Competency/skill: 7.12.2 Plastic pipe joining (mechanical compression tap saddle)

Qualified observer instructions:

1. For the performance steps below, observe the participant and check "Go" for successful completion of the step **or** "No Go" if remediation of the step is required.
2. A "No Go" rating on any of the steps constitutes a "No Go" for the entire performance skill. Performance skills must be completed with 100% accuracy.
3. Both the individual taking the performance evaluation and the qualified observer must sign this form upon completion of the evaluation.

Performance Step Analysis		Go	No Go
1	Mounting surface must be clean and free of cuts and scratches.		
2	Place top and bottom half of saddle on main, inset bolts and tighten in a crisscross pattern, taking care not to rotate saddle on the main. Tighten the bolts until the O-ring is compressed to the main outer edge. Bolt torque should not exceed 60 foot pounds.		
Tapping Main			
3	Remove cap, then insert drive key into punch. Guide bushing should be seated in top of saddle after beginning tap.		
4	Screw punch down until stop on drive key contacts the top of the tee. (The tap is now complete.)		
5	To allow flow thru the service, back punch up until the top of punch is flush with top of tee. It is important that the punch does not protrude above tee.		
6	Replace cap. Screw down until snug – Careful Do Not Over Tighten		
Comments:			

Participant Name: _____ **I.D. Number:** _____

Test Date: _____ **Location:** _____

Evaluation: ❑ **Qualified** ❑ **Not Qualified**

_____ _____

Qualified Observer Signature Participant Signature

Competency/skill: 7.13 Recognition of defective material

Qualified observer instructions:

1. For the performance steps below, observe the participant and check “Go” for successful completion of the step **or** “No Go” if remediation of the step is required.
2. A “No Go” rating on any of the steps constitutes a “No Go” for the entire performance skill. Performance skills must be completed with 100% accuracy.
3. Both the individual taking the performance evaluation and the qualified observer must sign this form upon completion of the evaluation.

Performance Step Analysis		Go	No Go
1	Remove soil for pipe inspection.		
2	Inspect damaged area.		
3	Determine defective area.		
4	Clean and make proper repairs.		
5	Return to service.		
Comments:			

Participant Name: _____ **I.D. Number:** _____

Test Date: _____ **Location:** _____

Evaluation: ☐ **Qualified** ☐ **Not Qualified**

_____ _____

Qualified Observer Signature Participant Signature

Competency/skill: 7.15 Steel pipe joining by mechanical couplings

Qualified observer instructions:

1. For the performance steps below, observe the participant and check “Go” for successful completion of the step **or** “No Go” if remediation of the step is required.
2. A “No Go” rating on any of the steps constitutes a “No Go” for the entire performance skill. Performance skills must be completed with 100% accuracy.
3. Both the individual taking the performance evaluation and the qualified observer must sign this form upon completion of the evaluation.

Performance Step Analysis		Go	No Go
Prepare coupling and pipe			
1	Disassemble, if necessary, and soap gaskets and pipe ends.		
2	Clean the pipe ends thoroughly. (Remove all wrapping, oil, loose scale, rust, cutter burrs and anything else that could prevent gasket seating.)		
3	Place end nuts, retainer cups, and soapy gaskets on the pipe ends. (Line up the pipe ends, leaving at least 1/4" gap.)		
Install coupling			
4	Measure the coupling body to manufacturers’ specifications. (Mark the measurement on one pipe end.)		
5	Place the coupling on pipe with the end of coupling body at the mark. (Make sure that the coupling body is clean.)		
6	Slide gaskets and retainer cups into place. (Slide the retainer cups against the gaskets.)		
7	Slide end nuts or caps into place. (Gradually tighten and torque to specification. If the coupling is hydraulic, inject grease or hydraulic fluid.)		
8	Check electrical continuity. (If using a non-insulated coupling be sure there is continuity. If using an insulated coupling be sure there is electrical isolation.)		
9	Clean away soap and other foreign material.		
10	Wrap the exposed coupling and pipe to ensure corrosion protection.		
See reverse side for any comments:			

Participant Name: _____ **I.D. Number:** _____

Test Date: _____ **Location:** _____

Evaluation: ☐ **Qualified** ☐ **Not Qualified**

_____ _____

Qualified Observer Signature Participant Signature

Competency/skill: 7.16 Damage prevention

Qualified observer instructions:

1. For the performance steps below, observe the participant and check "Go" for successful completion of the step **or** "No Go" if remediation of the step is required.
2. A "No Go" rating on any of the steps constitutes a "No Go" for the entire performance skill. Performance skills must be completed with 100% accuracy.
3. Both the individual taking the performance evaluation and the qualified observer must sign this form upon completion of the evaluation.

Performance Step Analysis		Go	No Go
1	Ensure utility locates have been requested and obtained prior to excavation		
2	Observe operation of, or operates excavation tools/equipment, taking care not to damage coating or piping		
3	Observe third party excavation activities for damage prevention as in Item 1		
4	Ensure proper backfill material, that is free of rocks and other debris, is used		
5	Ensure proper soil compaction around piping		
6	Protect and supports gas facilities during backfill procedure		
7	Ensure stoppage of excavation of excavation when pipe coating and/or material is damaged		
Comments:			

Participant Name: _____ **I.D. Number:** _____

Test Date: _____ **Location:** _____

Evaluation: ❑ **Qualified** ❑ **Not Qualified**

_____ _____

Qualified Observer Signature Participant Signature

Competency/skill: 7.19 Installing meter sets

Qualified observer instructions:

1. For the performance steps below, observe the participant and check "Go" for successful completion of the step **or** "No Go" if remediation of the step is required.
2. A "No Go" rating on any of the steps constitutes a "No Go" for the entire performance skill. Performance skills must be completed with 100% accuracy.
3. Both the individual taking the performance evaluation and the qualified observer must sign this form upon completion of the evaluation.

Performance Step Analysis		Go	No Go
1	Verified proper location of meter set in terms of safety and damage prevention.		
2	Have all associated pipe and fitting to install meter.		
3	Verified that the insides of any piping used in the installation are clean and free of obstructions.		
4	Used pipe joint material only on the male threads of the pipe being connected.		
5	Tightened each fitting sufficiently to provide a gas-tight seal.		
6	The meter was installed in a manner that presents a neat appearance and is adequately supported. Meter is adequately supported.		
7	Tested for leaks		
8	Document installation.		
Comments:			

Participant Name: _____ **I.D. Number:** _____

Test Date: _____ **Location:** _____

Evaluation: ☐ **Qualified** ☐ **Not Qualified**

_____ _____

Qualified Observer Signature Participant Signature

Competency/skill: 7.20 Tapping and stopping steel pipe 1" through 4"

Qualified observer instructions:

1. For the performance steps below, observe the participant and check "Go" for successful completion of the step **or** "No Go" if remediation of the step is required.
2. A "No Go" rating on any of the steps constitutes a "No Go" for the entire performance skill. Performance skills must be completed with 100% accuracy.
3. Both the individual taking the performance evaluation and the qualified observer must sign this form upon completion of the evaluation.

Performance Step Analysis		Go	No Go
1	Install fitting to pipe		
2	Set up tapping machine		
3	Install valve / tapping machine		
4	Make tap through pipe		
5	Remove machine / close valve		
6	Set up and install stop in machine		
7	Perform stop in pipe		
8	Remove stop		
9	Install completion plug and wrap pipe		
Comments:			

Participant Name: _____ **I.D. Number:** _____

Test Date: _____ **Location:** _____

Evaluation: ☐ **Qualified** ☐ **Not Qualified**

_____ _____

Qualified Observer Signature Participant Signature

Competency/skill: 7.21 Tapping and stopping steel pipe 6” through 8”

Qualified observer instructions:

1. For the performance steps below, observe the participant and check “Go” for successful completion of the step **or** “No Go” if remediation of the step is required.
2. A “No Go” rating on any of the steps constitutes a “No Go” for the entire performance skill. Performance skills must be completed with 100% accuracy.
3. Both the individual taking the performance evaluation and the qualified observer must sign this form upon completion of the evaluation.

Performance Step Analysis		Go	No Go
1	Install fitting to pipe		
2	Set up tapping machine		
3	Install valve / tapping machine		
4	Make tap through pipe		
5	Remove machine / close valve		
6	Set up and install stop in machine		
7	Perform stop in pipe		
8	Remove stop		
9	Install completion plug and wrap pipe		
Comments:			

Participant Name: _____ **I.D. Number:** _____

Test Date: _____ **Location:** _____

Evaluation: ☐ **Qualified** ☐ **Not Qualified**

_____ _____

Qualified Observer Signature Participant Signature

Competency/skill: 7.22 Tapping, stopping and squeeze-off of polyethylene pipe

Qualified observer instructions:

1. For the performance steps below, observe the participant and check "Go" for successful completion of the step **or** "No Go" if remediation of the step is required.
2. A "No Go" rating on any of the steps constitutes a "No Go" for the entire performance skill. Performance skills must be completed with 100% accuracy.
3. Both the individual taking the performance evaluation and the qualified observer must sign this form upon completion of the evaluation.

Performance Step Analysis		**Go**	**No Go**
Squeeze-Off			
1	Select proper squeeze-off tool regarding main/service diameter and pressure regime		
2	Properly eliminate static electrical potential on blowing plastic piping using company approved materials and standards		
3	Demonstrate plastic squeeze-off (manual or hydraulic) utilizing proper squeeze bars, stop settings		
4	Adhere to company separation standards regarding squeeze-off near fusion joints		
5	Perform company approved marking of squeeze-off area prior to trench backfilling		
Tapping and stopping			
6	Sidewall fusion		
7	Remove cap		
8	Turn Allen lead clockwise till bottoms out		
9	Turn counter-clockwise till 1 thread end from the top		
10	Replace cap on top of tee		
11	Test to manufacturers procedure		
Comments:			

Participant Name: _____ **I.D. Number:** _____

Test Date: _____ **Location:** _____

Evaluation: ❑ **Qualified** ❑ **Not Qualified**

_____ _____

Qualified Observer Signature Participant Signature

Competency/skill: 8.1 Operating backhoe

Qualified observer instructions:

1. For the performance steps below, observe the participant and check "Go" for successful completion of the step **or** "No Go" if remediation of the step is required.
2. A "No Go" rating on any of the steps constitutes a "No Go" for the entire performance skill. Performance skills must be completed with 100% accuracy.
3. Both the individual taking the performance evaluation and the qualified observer must sign this form upon completion of the evaluation.

Performance Step Analysis		Go	No Go
1	Check fluid levels		
2	Visual check of tires		
3	Visual check of outriggers		
4	Visual check of levers / controls		
5	Start up procedures		
6	Proper positioning of machine		
7	Operate control levers		
8	Proper placement of dirt		
9	Shut down procedures		
Comments:			

Participant Name: _____ **I.D. Number:** _____

Test Date: _____ **Location:** _____

Evaluation: ☐ **Qualified** ☐ **Not Qualified**

_____ _____

Qualified Observer Signature Participant Signature

Competency/skill: 8.2 Operating trenchers

Qualified observer instructions:

1. For the performance steps below, observe the participant and check “Go” for successful completion of the step **or** “No Go” if remediation of the step is required.
2. A “No Go” rating on any of the steps constitutes a “No Go” for the entire performance skill. Performance skills must be completed with 100% accuracy.
3. Both the individual taking the performance evaluation and the qualified observer must sign this form upon completion of the evaluation.

Performance Step Analysis		Go	No Go
1	Visual inspection		
2	Check fluid levels		
3	Check safety locks		
4	Start up procedures		
5	Proper placement of trencher		
6	Engage digger chain		
7	Lower boom to proper depth		
8	Engage forward motion		
9	Shut down procedures		
Comments:			

Participant Name: _____ **I.D. Number:** _____

Test Date: _____ **Location:** _____

Evaluation: ☐ **Qualified** ☐ **Not Qualified**

_____ _____

Qualified Observer Signature Participant Signature

Competency/skill: 8.3 Operating boring equipment

Qualified observer instructions:

1. For the performance steps below, observe the participant and check "Go" for successful completion of the step **or** "No Go" if remediation of the step is required.
2. A "No Go" rating on any of the steps constitutes a "No Go" for the entire performance skill. Performance skills must be completed with 100% accuracy.
3. Both the individual taking the performance evaluation and the qualified observer must sign this form upon completion of the evaluation.

Performance Step Analysis		Go	No Go
1	Visual inspection		
2	Check fluid levels		
3	Start up procedures		
4	Engage boring rod		
5	Proper angle and anchoring of machine		
6	Proper rotation of bore rod		
7	Travel speed of bore rod		
8	Check rotational speed of rod		
9	Check location of bore rod		
Comments:			

Participant Name: _____ **I.D. Number:** _____

Test Date: _____ **Location:** _____

Evaluation: ❑ **Qualified** ❑ **Not Qualified**

_____ _____

Qualified Observer Signature Participant Signature

Competency/skill: 8.3.1 Operating mole equipment

Qualified observer instructions:

1. For the performance steps below, observe the participant and check "Go" for successful completion of the step **or** "No Go" if remediation of the step is required.
2. A "No Go" rating on any of the steps constitutes a "No Go" for the entire performance skill. Performance skills must be completed with 100% accuracy.
3. Both the individual taking the performance evaluation and the qualified observer must sign this form upon completion of the evaluation.

Performance Step Analysis		Go	No Go
1	Visual inspection		
2	Check fluid levels		
3	Start up procedures		
4	Engage boring rod		
5	Proper angle and anchoring of machine		
6	Proper rotation of bore rod		
7	Travel speed of bore rod		
8	Check location of bore rod		
Comments:			

Participant Name: _____ **I.D. Number:** _____

Test Date: _____ **Location:** _____

Evaluation: ☐ **Qualified** ☐ **Not Qualified**

_____ _____

Qualified Observer Signature Participant Signature

Competency/skill: 8.4 Ditch and backfill inspection

Qualified observer instructions:

1. For the performance steps below, observe the participant and check “Go” for successful completion of the step **or** “No Go” if remediation of the step is required.
2. A “No Go” rating on any of the steps constitutes a “No Go” for the entire performance skill. Performance skills must be completed with 100% accuracy.
3. Both the individual taking the performance evaluation and the qualified observer must sign this form upon completion of the evaluation.

Performance Step Analysis		Go	No Go
1	Trench bottom relatively smooth, free of rocks, sticks, and other debris that could damage the pipe and coating.		
2	When lifting, moving, and lowering pipe into the ditch, be careful to protect the pipe and pipe coating from dents, gouges, nicks, scratches and other damage.		
3	Pipe was adequately supported while being lowered into the ditch.		
4	A sufficient clearance between steel piping and other underground structures not associated with the piping must be maintained. If clearance cannot be attained, the piping must be protected from damage that might result from the proximity of other structures.		
5	Prior to backfilling, the pipe was adequately supported so as to minimize stresses and to protect the pipe coating from damage.		
6	Backfill was layered and compacted with suitable clean soil.		
Comments:			

Participant Name: _____ **I.D. Number:** _____

Test Date: _____ **Location:** _____

Evaluation: ☐ **Qualified** ☐ **Not Qualified**

_____ _____

Qualified Observer Signature Participant Signature

Competency/skill: 10.2 Internal corrosion

Qualified observer instructions:

1. For the performance steps below, observe the participant and check "Go" for successful completion of the step **or** "No Go" if remediation of the step is required.
2. A "No Go" rating on any of the steps constitutes a "No Go" for the entire performance skill. Performance skills must be completed with 100% accuracy.
3. Both the individual taking the performance evaluation and the qualified observer must sign this form upon completion of the evaluation.

Performance Step Analysis		**Go**	**No Go**
If a hot tap was performed, gas pipe removed or otherwise taken out of service and examination of the internal corrosion needs to be reviewed.			
1	Clean the pipe and/or fitting sample by removing burrs, corrosion deposits, dirt and coating.		
2	Use pit depth gauge, with a pit-measuring tip small enough to reach the bottom of the corrosion pit being examined. Checking for reduction of wall thickness of 30%		
3	Document all internal corrosion findings.		
Comments:			

Participant Name: _____ **I.D. Number:** _____

Test Date: _____ **Location:** _____

Evaluation: ☐ **Qualified** ☐ **Not Qualified**

_____ _____

Qualified Observer Signature Participant Signature

Competency/skill: 10.3 External corrosion

Qualified observer instructions:

1. For the performance steps below, observe the participant and check "Go" for successful completion of the step **or** "No Go" if remediation of the step is required.
2. A "No Go" rating on any of the steps constitutes a "No Go" for the entire performance skill. Performance skills must be completed with 100% accuracy.
3. Both the individual taking the performance evaluation and the qualified observer must sign this form upon completion of the evaluation.

Performance Step Analysis		Go	No Go
Visually inspect an exposed pipe for corrosion			
1	Examines exposed pipe for evidence of localized and/or general areas of pitting		
2	Examines exposed pipe fittings for evidence of localized and/or general areas of pitting		
3	Carefully exposes pipe in both directions in order to determine the extent of any corrosion found in Items 1 and 2		
4	Use pit depth gauge, with a pit-measuring tip small enough to reach the bottom of the corrosion pit being examined. Checking for reduction of wall thickness of 30%		
5	Determines whether coating should be repaired		
6	Determines whether pipe segment and any associated fittings should be replaced		
Comments:			

Participant Name: _____ **I.D. Number:** _____

Test Date: _____ **Location:** _____

Evaluation: ☐ **Qualified** ☐ **Not Qualified**

_____ _____

Qualified Observer Signature Participant Signature

Competency/skill: 10.4 Atmospheric corrosion

Qualified observer instructions:

1. For the performance steps below, observe the participant and check "Go" for successful completion of the step **or** "No Go" if remediation of the step is required.
2. A "No Go" rating on any of the steps constitutes a "No Go" for the entire performance skill. Performance skills must be completed with 100% accuracy.
3. Both the individual taking the performance evaluation and the qualified observer must sign this form upon completion of the evaluation.

Performance Step Analysis		**Go**	**No Go**
Recognizing atmospheric corrosion			
1	Recognize normal rust (above grade) as surface oxidation		
2	Recognize local pitting (above grade) as atmospheric corrosion		
3	Recognize general pitting (above grade) as atmospheric corrosion		
4	Record all atmospheric corrosion patrolling efforts		
5	Report actual or potential atmospheric corrosion		
Comments:			

Participant Name: _____ **I.D. Number:** _____

Test Date: _____ **Location:** _____

Evaluation: ☐ **Qualified** ☐ **Not Qualified**

_____ _____

Qualified Observer Signature Participant Signature

Competency/skill: 10.6 Holiday detection (coating inspection)

Qualified observer instructions:

1. For the performance steps below, observe the participant and check “Go” for successful completion of the step **or** “No Go” if remediation of the step is required.
2. A “No Go” rating on any of the steps constitutes a “No Go” for the entire performance skill. Performance skills must be completed with 100% accuracy.
3. Both the individual taking the performance evaluation and the qualified observer must sign this form upon completion of the evaluation.

Performance Step Analysis		Go	No Go
1	Visual inspection of machine		
2	Check voltage settings		
3	Install proper spring collar		
4	Pipe properly grounded		
5	Placement of transmitter ground		
6	Turn machine on		
7	Travel speed		
8	Recognition of defects		
Comments:			

Participant Name: _____ **I.D. Number:** _____

Test Date: _____ **Location:** _____

Evaluation: ☐ **Qualified** ☐ **Not Qualified**

_____ _____

Qualified Observer Signature Participant Signature

Competency/skill: 10.6.1 Holiday detection (visual inspection of coating)

Qualified observer instructions:

1. For the performance steps below, observe the participant and check "Go" for successful completion of the step **or** "No Go" if remediation of the step is required.
2. A "No Go" rating on any of the steps constitutes a "No Go" for the entire performance skill. Performance skills must be completed with 100% accuracy.
3. Both the individual taking the performance evaluation and the qualified observer must sign this form upon completion of the evaluation.

Performance Step Analysis		Go	No Go
1	Check coating for gouges, scrapes and tears		
2	Clean coating from pipe		
3	Clean pipe		
4	Check pipe for corrosion, gouges or scrapes		
5	If corrosion is found – clean pipe until no corrosion found		
6	Prepare pipe		
7	Install new coating		
8	Check to see if coating covers entire pipe		
Comments:			

Participant Name: _____ **I.D. Number:** _____

Test Date: _____ **Location:** _____

Evaluation: ☐ **Qualified** ☐ **Not Qualified**

_____ _____

Qualified Observer Signature Participant Signature

Competency/skill: 10.7 Painting and jacketing above ground facilities

Qualified observer instructions:

1. For the performance steps below, observe the participant and check “Go” for successful completion of the step **or** “No Go” if remediation of the step is required.
2. A “No Go” rating on any of the steps constitutes a “No Go” for the entire performance skill. Performance skills must be completed with 100% accuracy.
3. Both the individual taking the performance evaluation and the qualified observer must sign this form upon completion of the evaluation.

Performance Step Analysis		Go	No Go
1	Remove all loose paint and particles.		
2	Mask all regulator vents.		
3	Mask all di-electric fittings.		
4	Mask index glass.		
5	Mask all required identification tags.		
6	Paint all exposed metal.		
Comments:			

Participant Name: _____ **I.D. Number:** _____

Test Date: _____ **Location:** _____

Evaluation: ☐ **Qualified** ☐ **Not Qualified**

_____ _____

Qualified Observer Signature Participant Signature

Competency/skill: 10.8 Installing sacrificial anode

Qualified observer instructions:

1. For the performance steps below, observe the participant and check "Go" for successful completion of the step **or** "No Go" if remediation of the step is required.
2. A "No Go" rating on any of the steps constitutes a "No Go" for the entire performance skill. Performance skills must be completed with 100% accuracy.
3. Both the individual taking the performance evaluation and the qualified observer must sign this form upon completion of the evaluation.

Performance Step Analysis		Go	No Go
1	Evaluate the pipe coating. (The more holidays in the coating, the more current the anode has to generate.)		
2	Anchor the wire. For steel pipe, the wire must be anchored by wrapping it around the pipe and looping the end back up on the pipe.		
3	Place anode at least 3' from coated pipe and 6' from bare steel.		
4	Place anode at least 1' deeper than the pipeline.		
5	If more than 1 anode, space at least 10' apart.		
6	Paint all exposed metal.		
7	Wet area, if desired.		
8	Connect lead wire to pipeline, usually by thermite weld if safe to do so.		
9	Patch the coating where it is damaged or has been removed at the connection point of he anode wire to the pipeline.		
10	Place test box where it may be protected from damage and easily located.		
11	Do not let foreign structures contact the pipe.		
12	Insulate all gas meters when connected to a cathodically protected system.		
Comments:			

Participant Name: _____ **I.D. Number:** _____

Test Date: _____ **Location:** _____

Evaluation: ❑ **Qualified** ❑ **Not Qualified**

_____ _____

Qualified Observer Signature Participant Signature

Competency/skill: 10.9 Installation of impressed current system (rectifier)

Qualified observer instructions:

1. For the performance steps below, observe the participant and check “Go” for successful completion of the step **or** “No Go” if remediation of the step is required.
2. A “No Go” rating on any of the steps constitutes a “No Go” for the entire performance skill. Performance skills must be completed with 100% accuracy.
3. Both the individual taking the performance evaluation and the qualified observer must sign this form upon completion of the evaluation.

Performance Step Analysis		Go	No Go
1	Rectifier installation preparations: Selection of proper hand tools inclusive of electrical instruments		
2	Rectifier selection: Selection of proper rectifier, sized to provide output volts and amps for the structure application		
3	Rectifier power-up: Demonstrate, with proper test equipment, that the rectifier's positive and negative output terminals are correctly polarized		
4	Rectifier D.C. hook-up and adjust output: Demonstrate, that the anode and pipe cables are secured to the correct rectifier output terminals Demonstrate by proper testing and monitoring, that the rectifier D.C. output is correctly adjusted for the affected structure Demonstrate that an in-line diode is not needed to prevent reverse current flow when the rectifier is offline		
5	Record the readings: Record output values, both volts and amps, on company forms with accuracy adhering to company standards		
Comments:			

Participant Name: _____ **I.D. Number:** _____

Test Date: _____ **Location:** _____

Evaluation: ☐ **Qualified** ☐ **Not Qualified**

_____ _____

Qualified Observer Signature Participant Signature

Competency/skill: 11.1 Operating and maintaining a differential odorant system

Qualified observer instructions:

1. For the performance steps below, observe the participant and check "Go" for successful completion of the step **or** "No Go" if remediation of the step is required.
2. A "No Go" rating on any of the steps constitutes a "No Go" for the entire performance skill. Performance skills must be completed with 100% accuracy.
3. Both the individual taking the performance evaluation and the qualified observer must sign this form upon completion of the evaluation.

Performance Step Analysis		Go	No Go
1	Close valves in proper sequence.		
2	Bleed off pressure in appropriate manner.		
3	Refill odorant tank properly.		
4	Slowly open valves in proper sequence.		
5	Accurately document amount of odorant used.		
Comments:			

Participant Name: _____ **I.D. Number:** _____

Test Date: _____ **Location:** _____

Evaluation: ☐ **Qualified** ☐ **Not Qualified**

_____ _____

Qualified Observer Signature Participant Signature

Competency/skill: 11.2 Operating and maintaining an injection odorant system

Qualified observer instructions:

1. For the performance steps below, observe the participant and check "Go" for successful completion of the step **or** "No Go" if remediation of the step is required.
2. A "No Go" rating on any of the steps constitutes a "No Go" for the entire performance skill. Performance skills must be completed with 100% accuracy.
3. Both the individual taking the performance evaluation and the qualified observer must sign this form upon completion of the evaluation.

Performance Step Analysis		Go	No Go
1	Close valves in proper sequence		
2	Refill odorant tank properly		
3	• Close appropriate valves to isolate day tank		
4	• Vent pressure off day tank		
5	• Slowly open proper valves from storage tank to day tank		
6	• If necessary; open pressure line to storage tank		
7	• After filling, return all valves to operating position		
8	Check for air/lock		
9	Accurately document amount of odorant used		
10	Check for filter saturation		
Comments:			

Participant Name: _____ **I.D. Number:** _____

Test Date: _____ **Location:** _____

Evaluation: ☐ **Qualified** ☐ **Not Qualified**

_____ _____

Qualified Observer Signature Participant Signature

Competency/skill: 11.3 Testing odorant level

Qualified observer instructions:

1. For the performance steps below, observe the participant and check "Go" for successful completion of the step **or** "No Go" if remediation of the step is required.
2. A "No Go" rating on any of the steps constitutes a "No Go" for the entire performance skill. Performance skills must be completed with 100% accuracy.
3. Both the individual taking the performance evaluation and the qualified observer must sign this form upon completion of the evaluation.

Performance Step Analysis		Go	No Go
1	Select appropriate test sites.		
2	Purge machine before use.		
3	Season machine.		
4	Test for odorant level in smooth controlled motions.		
5	Record readings accurately.		
6	Purge machine before turning off.		
Comments:			

Participant Name: _____ **I.D. Number:** _____

Test Date: _____ **Location:** _____

Evaluation: ❑ **Qualified** ❑ **Not Qualified**

_____ _____

Qualified Observer Signature Participant Signature

Competency/skill: 12.1 Operating valves – emergency, regulators, relief

Qualified observer instructions:

1. For the performance steps below, observe the participant and check "Go" for successful completion of the step **or** "No Go" if remediation of the step is required.
2. A "No Go" rating on any of the steps constitutes a "No Go" for the entire performance skill. Performance skills must be completed with 100% accuracy.
3. Both the individual taking the performance evaluation and the qualified observer must sign this form upon completion of the evaluation.

Performance Step Analysis		Go	No Go
Operating valves			
1	Check to see if valve is open or closed.		
2	Aware of section valve controls.		
3	Check size of valve and visually inspect condition of valve.		
4	Correctly attach wrench to valve.		
5	Turn valve correctly.		
6	Return valve to normal operating position.		
Comments:			

Participant Name: _____ **I.D. Number:** _____

Test Date: _____ **Location:** _____

Evaluation: ☐ **Qualified** ☐ **Not Qualified**

_____ _____

Qualified Observer Signature Participant Signature

Competency/skill: 12.2 Inspecting pressure regulating and limiting stations

Qualified observer instructions:

1. For the performance steps below, observe the participant and check "Go" for successful completion of the step **or** "No Go" if remediation of the step is required.
2. A "No Go" rating on any of the steps constitutes a "No Go" for the entire performance skill. Performance skills must be completed with 100% accuracy.
3. Both the individual taking the performance evaluation and the qualified observer must sign this form upon completion of the evaluation.

Performance Step Analysis		Go	No Go
1	Visually inspect regulator/relief/piping.		
2	Ensure all valves are operating properly.		
3	Test diaphragm assembly vent and all other pipes for leaks.		
4	Inspect all filters.		
5	Test to determine if regulator will lockup. (If lock-up is not achieved; physical inspection of orifice and seat will have to be performed and replaced if needed.)		
6	Test to ensure regulator will open full.		
7	If there is a monitor regulator check, set pressure. Check for lockup.		
8	If there is a relief valve, check for set pressure and test for operating performance.		
9	Ensure all valves are returned to normal operating positions.		
Comments:			

Participant Name: _____ **I.D. Number:** _____

Test Date: _____ **Location:** _____

Evaluation: ☐ **Qualified** ☐ **Not Qualified**

_____ _____

Qualified Observer Signature Participant Signature

Competency/skill: 12.3 Inspecting and maintaining key valves

Qualified observer instructions:

1. For the performance steps below, observe the participant and check “Go” for successful completion of the step **or** “No Go” if remediation of the step is required.
2. A “No Go” rating on any of the steps constitutes a “No Go” for the entire performance skill. Performance skills must be completed with 100% accuracy.
3. Both the individual taking the performance evaluation and the qualified observer must sign this form upon completion of the evaluation.

Performance Step Analysis		**Go**	**No Go**
Lubricating valves			
1	Correctly attach lubricating device to the valve.		
2	Apply lubrication without over lubricating.		
3	Correctly detach the lubricating device and clean the lubrication point.		
Operating valves			
4	Check to see if valve is open or closed.		
5	Aware of section valve controls.		
6	Check size of valve.		
7	Correctly attach wrench to valve.		
8	Turn valve correctly.		
9	Return valve to normal operating position.		
Comments:			

Participant Name: _____ **I.D. Number:** _____

Test Date: _____ **Location:** _____

Evaluation: ☐ **Qualified** ☐ **Not Qualified**

_____ _____

Qualified Observer Signature Participant Signature

Competency/skill: 12.4 System uprating

Qualified observer instructions:

1. For the performance steps below, observe the participant and check "Go" for successful completion of the step **or** "No Go" if remediation of the step is required.
2. A "No Go" rating on any of the steps constitutes a "No Go" for the entire performance skill. Performance skills must be completed with 100% accuracy.
3. Both the individual taking the performance evaluation and the qualified observer must sign this form upon completion of the evaluation.

Performance Step Analysis		Go	No Go
1	Determined if system can be uprated		
2	Developed a specific uprating procedure/plan for system and all personnel understand plan		
3	Notified customers whose service will be interrupted		
4	Changed out service regulators, pipe, equipment, fittings that may have need higher pressure		
5	Leaks surveyed just before pressure increase and classify and repair according to leak classification		
6	Raised pressure in increments or steps and conducted a leak survey after each pressure increase		
7	Monitored pressure at key locations in system during uprating.		
8	Made a final leak survey when the uprating was finished		
9	Documented the system uprating activities		
Comments:			

Participant Name: _____ **I.D. Number:** _____

Test Date: _____ **Location:** _____

Evaluation: ☐ **Qualified** ☐ **Not Qualified**

_____ _____

Qualified Observer Signature Participant Signature

Competency/skill: 13.1 Operating peak shaving plant (propane/air mixture/injection): Pre-start-up procedures

Qualified observer instructions:

1. For the performance steps below, observe the participant and check "Go" for successful completion of the step **or** "No Go" if remediation of the step is required.
2. A "No Go" rating on any of the steps constitutes a "No Go" for the entire performance skill. Performance skills must be completed with 100% accuracy.
3. Both the individual taking the performance evaluation and the qualified observer must sign this form upon completion of the evaluation.

Performance Step Analysis		Go	No Go
1	Operating valves		
2	Operating electric control panel		
3	Adjusting temperature on vaporizer		
4	Adjust injection pressure (Foxboro controller)		
5	Operating compressor		
6	Operating the specific gravity controller (Usually Ranarex controller)		
7	Operate Bunson burner (If equipped)		
8	Inspect gauges, charts for stabilization		

Comments:

Participant Name: _____ **I.D. Number:** _____

Test Date: _____ **Location:** _____

Evaluation: ☐ **Qualified** ☐ **Not Qualified**

_____ _____

Qualified Observer Signature Participant Signature

Competency/skill: 13.2 Operating peak shaving plant (propane/air mixture/injection): Start-up/operating procedures/shut down

Qualified observer instructions:

1. For the performance steps below, observe the participant and check "Go" for successful completion of the step **or** "No Go" if remediation of the step is required.
2. A "No Go" rating on any of the steps constitutes a "No Go" for the entire performance skill. Performance skills must be completed with 100% accuracy.
3. Both the individual taking the performance evaluation and the qualified observer must sign this form upon completion of the evaluation.

Performance Step Analysis		Go	No Go
Accordance with operators manual for specific equipment used			
1			
2			
3			
4			
5			
6			
7			
8			
9			
Comments:			

Participant Name: _____ **I.D. Number:** _____

Test Date: _____ **Location:** _____

Evaluation: ☐ **Qualified** ☐ **Not Qualified**

_____ _____

Qualified Observer Signature Participant Signature

Competency/skill:

Qualified observer instructions:

1. For the performance steps below, observe the participant and check “Go” for successful completion of the step **or** “No Go” if remediation of the step is required.
2. A “No Go” rating on any of the steps constitutes a “No Go” for the entire performance skill. Performance skills must be completed with 100% accuracy.
3. Both the individual taking the performance evaluation and the qualified observer must sign this form upon completion of the evaluation.

Performance Step Analysis		Go	No Go
1			
2			
3			
4			
5			
6			
7			
8			
9			
Comments:			

Participant Name: _____ **I.D. Number:** _____

Test Date: _____ **Location:** _____

Evaluation: ☐ **Qualified** ☐ **Not Qualified**

_____ _____

Qualified Observer Signature Participant Signature

WRITTEN EVALUATION OF COMPETENCIES AND SKILLS

Division 6 of the Operator Qualification Program may contain copies of tests used in the written evaluation and qualification competencies and skills necessary to perform tasks on gas systems. Copies of examination instruments are generally not included, where qualification is certified by an outside training organization.

TRAINING MATERIALS

Division 7 of the Operator Qualification Program may contain attachments describing course descriptions or outlines, lesson plans, and other materials used to prepare personnel for qualification through this program. For example, a brochure describing a welder qualification workshop could be retained in this division to document the operator's efforts to provide training in required competencies and skills.

When communication of change is completed the "Notice of Change" form filed in Division 7.

(Protocol 1.04, 8.01 §192.803/195.503, §192.805/195.505)

COURSE DESCRIPTIONS AND PREREQUISITES FOR MIDWEST ENERGY TRAINING MODULES
(IAMU AOC's listed under Module Descriptions)

The following is a copy of Appendix B of the Midwest Energy Association's (A.K.A. Midwest Gas Association) *Operator Qualification Training Program Course Management Plan.* The appendix describes the training modules offered by Midwest Energy Association. The Iowa Association of Municipal Utilities through an agreement with Midwest Energy Association reproduces the copyrighted material.

(Protocol 4.02 §192.803)

Module Number: 101 **Title:** Characteristics and Hazards of Natural Gas
Prerequisite: None
Description: General introduction to natural gas. Topics include: composition of natural gas; hydrocarbon chemistry; physical properties of natural gas; combustion of natural gas; the fire triangle and tetrahedron; upper and lower explosive limits of natural gas; carbon monoxide.

Module Number: 102 **Title:** Potential Ignition Sources: Indoor and Outdoor
Prerequisite: 101
Description: Introduction to ignition sources. Topics include: open flame ignition sources; electric spark sources - arcing and static electricity; sources resulting from work on piping.

Module Number: 103 **Title:** Recognizing Emergency Conditions
Prerequisite: 101, 102
Description: Recognizing conditions that could lead to emergency failure of the natural gas system or equipment. Topics include: potential consequences of failures; potential failure conditions including construction defects, corrosion, damage, line stress, mechanical failure, human error, and pipeline obstructions; corrective action.
AOC's: corrosion, damage, line stress, mechanical failures, human error, pipeline obstructions

Module Number: 104 **Title:** Recognizing and Reporting Natural Gas Leaks
Prerequisite: 101, l02, 103
Description: Recognizing and reporting leaks and potential leaks encountered during the normal course of daily activity. Topics include: recognizing leaks by sight, sound, and smell; recognizing leak conditions such as tampering and meter damage; reporting leaks according to whether or not they constitute an immediate danger; ensuring customer and employee safety.
AOC's: meter damage, tampering, leaks

Module Number: 111 **Title:** Personal Protective Equipment
Prerequisites: 101, 102, 103, 104
Description: Use fire retardant clothing and PPE. Topics include: requirements and procedures for wearing flame retardant clothing; fresh air breathing equipment and components; proper use and maintenance of breathing equipment.

Module Number: 121 **Title:** Power Tool Safety
Prerequisite: 101, 102, 103, 104, 111
Description: Basic safety practices for working with the five basic types of power tools. Topics include: personal protective equipment; safety principles for using and maintaining power tools; safety practices for electric, liquid-fuel, hydraulic, pneumatic, and powder-actuated power tools.

Module Number: 122 **Title:** Proper Firefighting Techniques
Prerequisite: 101, 102, 103, 104, 111
Description: Selection of firefighting equipment and proper methods of fighting natural gas fires. Topics include: review of the fire triangle and tetrahedron; classes of fires; types and selection of dry chemical fire extinguishers; fire extinguisher inspection and maintenance; firefighting procedures.

Module Number: 131 **Title:** Controlling the Accidental Release of Gas
Prerequisite: 101, 102, 103, 104, 122
Description: Introduction to accidental natural gas release. Topics include: definition of accidental release; causes of accidental release; corrective actions; examples of accidental release situations outdoors including damage to above grade facilities serving customers, damage to one-way and two-way feed transmission/distribution lines, damage to above grade district regulator stations with multiple and isolated feeds, and mechanical failure of relief valve; accidental release of natural gas indoors.

Module Number: 201 **Title:** Soil Subsidence
Prerequisites: 101, 102, 103, 104
Description: Soil subsidence as a possible cause of pipeline leaks or failure. Topics include: causes of soil subsidence including settling, shifting, and erosion; recognition and analysis of soil subsidence using visible signs, company and other records; documentation.

Module Number: 202 **Title:** Atmospheric Corrosion
Prerequisites: 101, 102, 103, 104
Description: Atmospheric corrosion as a possible cause of pipeline leaks or failure. Topics include: definition, types, and causes of atmospheric corrosion; atmospheric corrosion surveys; corrective action.

Module Number: 211 **Title:** Recognizing Unsafe Meter Sets
Prerequisites: 101, 102, 103, 104, 201, 202
Description: Unsafe meter sets as a possible cause of leaks or failure. Topics include misaligned meter sets; improper location; burial and overbuilding; corrosion; physical damage.
AOC's: corrosion, physical damage, burial, improper location, stressed piping

Module Number: 221 **Title**: Leak Classification
Prerequisites: 101, 102, 103, 104
Description: DOT leak classification requirements. Topics include: definitions of Grade 1, 2, and 3 leaks; guidelines for assigning leak grades; response to leaks; follow-up; documentation.

Module Number: 231 **Title:** Operating the Combustible Gas Indicator
Prerequisite: 101, 102, 103, 104, 221
Description: Introduction to operation and maintenance of the CGI. Topics include: CGI unit parts and function; pre-operation tests of the CGI unit; operation of the CGI unit in the field; documentation.

Module Number: 232 **Title:** Operating the Flame Ionization Unit
Prerequisite: 101, 102, 103, 104, 221
Description: Introduction to operation and maintenance of the FI unit. Topics include FI unit parts and function; pre-operation inspection and testing of the FI unit; field operation of the FI unit for walking and mobile surveys; documentation.

Module Number: 241 **Title:** Carbon Monoxide (CO) Testing
Prerequisites: 101, 102, 103, 104
Description: Introduction to CO testing. Topics include: recognizing the effects of CO gas on human beings; identifying situations that require CO testing; CO testing using indicator tubes and electronic CO monitors; actions to take when CO is detected; documentation.

Module Number: 244 **Title:** Emergency Response and Restoration of Service
Prerequisites: 101, 102, 103, 104, 131, 221
Description: Basic responses to emergency situations and information about restoration of service. Topics include: Identifying company procedures for reporting to state/federal authorities. Identify components of an effective repair plan, system mapping and isolation points, repair plan, and methods for reestablishing service after shut down.

Module Number: 251 **Title:** Odorization
Prerequisites: 101, 102, 103, 104
Description: Requirements and procedures for odorizing gas and testing odorant levels. Topics include: factors affecting sufficient odorization; odorization equipment testing; odorization equipment maintenance; testing for odorization levels; documentation.
AOC's: over or under odorization, odorizer malfunctions

Module Number: 261 **Title:** Bar Hole Testing and Purging
Prerequisite: 101, 102, 103, 104, 231
Description: Use of bar test equipment and CGI to identify gas migration, pinpoint underground leaks, and exhaust underground gas. Topics include: natural gas migration; factors affecting migration patterns and rates; safety hazards of gas migration; determining the spread area of underground leaks; finding the leak source; exhausting gas.

Module Number: 271 **Title:** Leak Surveys and Patrols
Prerequisite: 101, 102, 103, 104, 201, 202, 232, 251
Description: Requirements and procedures for systematic leak survey of the natural gas system. Topics include: causes of leaks; leak detection equipment; kinds of surveys; kinds of facilities that require surveys; DOT survey requirements; procedures for walking, mobile, and business district surveys; patrols; documentation.
AOC's: damage to pipe or casing vents, atmospheric corrosion, soil subsidence, easement infringement, visual evidence of leaks

Module Number: 272 **Title:** Customer Leak Investigation
Prerequisite: 101, 102, 103, 104, 241, 251, 261
Description: Responding to customer reports of leaks. Topics include: arrival and entry procedures; indoor and outdoor leak detection and location; identifying and responding to hazardous conditions; documentation.
AOC's: ignition sources, multiple leaks, gas in duct or sewer system

Module Number: 301 **Title:** Combustion and Ventilation Air
Prerequisite: 101, 102, 103, 104
Description: Introduction to air requirements for combustion of natural gas. Topics include: combustion terminology; complete and incomplete combustion; problems that result from incomplete combustion; conditions allowing for adequate combustion air.

Module Number: 311 **Title:** Pilot Lights
Prerequisite: 101, 102, 103, 104, 301
Description: Introduction to pilot lights and other appliance ignition systems. Topics include: automatic and non-automatic pilots; flame sensors and safety shutoffs including thermocouples, bimetal and hydraulic or mercury vaporization sensors; electronic ignition systems; inspection procedures for electronic ignition systems.

Module Number: 312 **Title:** Gas-Air Adjustment
Prerequisite: 101, 102, 103, 104, 301
Description: Introduction to gas burners and adjustment. Topics include: types of gas burners including yellow flame and blue flame burners; typical burner components; flame characteristics and factors affecting them; burner problems caused by improper gas-air mixture including lifting, flashback, extinction pop, yellow tipping, floating, and rollout.

Module Number: 313 **Title:** Venting
Prerequisite: 101, 102, 103, 104, 301
Description: Introduction to the purpose of venting and recognizing proper and improper venting conditions. Topics include: purpose of venting; factors affecting venting system design and operation; types of vents; code requirements for venting; recognizing proper vent and connector installation; testing vents for establishment of gas.

Module Number: 321 **Title:** Pressure Checks to Establish Gas Service
Prerequisites: 101, 102, 103, 104
Description: Establishing proper gas inlet pressure. Topics include: pressure measurement instruments, including bourdon tubes, manometers, and electronic gauges; procedure for checking inlet pressure; problems associated with under pressurization and over-pressurization; calculating desired and actual gas flow.
AOC's: over pressurization, under pressurization, improper regulator sizing

Module Number: 322 **Title:** Establishing and Disconnecting Gas
Prerequisites: 101, 102, 103, 104, 272, 311, 312, 313, 321
Description: Requirements and procedures for establishing and disconnecting customer gas service. Topics include: verification of requesting location; piping and appliance checks; meter and regulator checks including low-flow and shut-in tests; purging and light-up procedures; disconnection of service; meter removal; documentation.
AOC's: atmospheric corrosion, regulator hammering, improper set point, improper location of regulator vent, unreliable operation, piping obstructions,

Module Number: 324 **Title:** Lighting Appliances
Prerequisites: 101, 102, 103, 104, 311, 312, 313, 321
Description: Performing purging and lighting on all types of residential gas appliances. Topics include: purging process and conditions requiring its use; identifying the three types of purging methods.

Module Number: 401 **Title:** Job Site Protection
Prerequisites: 101, 102, 103, 104
Description: Protection of job site for public and employee safety. Topics include: types of traffic control and protection devices and signs; placement of job site protection devices.

Module Number: 402 **Title:** Locating and Marking Facilities
Prerequisite: 101, 102, 103, 104, 401
Description: Use of the pipe locator to find and mark underground facilities. Topics include: pipe locator parts and operation; equipment check-out; direct requests and the one-call system; field markings of gas and other facilities; conductive locating procedure: inductive locating procedure; pinpoint centering of pipe; triangulation of pipe depth; permanent and temporary signs and markers.
AOC's: damaged pipe or coating, missing or broken tracer wire, soil subsidence, unable to locate

Module Number: 403 **Title:** Backhoe Safety
Prerequisite: 101, 102, 103, 104, 401
Description: Basic safety principles for working with or around backhoes. Topics include: safe back hoe service and maintenance; procedure for loading and unloading back hoe on or off trailer; safety procedures for working with backhoes at the job site.

Module Number: 404 **Title:** Excavation and Shoring Safety
Prerequisites: 101, 102, 103, 104, 402, 403
Description: Techniques and protection for safe excavation. Topics include: cave-in causes and results; cave-in prevention factors including soil classification, water, and other factors; cave-in protection measures including support systems, sloping, and shielding; additional excavation precautions.
AOC's: pipe or coating damage, poor compaction, gas leaks, support under pipe not provided

Module Number: 411 **Title:** Plastic Pipe Fusion
Prerequisite: 101, 102, 103, 104, 121
Description: Methods and procedures for fusing plastic pipe. Topics include: minimizing hazards of static electricity; equipment and procedure for butt, sidewall, and socket fusion; butt end and sidewall electrofusion.
AOC's: dirty or contaminated pipe, oxidation not removed, pipe ends not square, incomplete fusion, over/under melt, overheating, misalignment, wrong fitting selected, pipe out of round, pipe damaged or defective

Module Number: 412 **Title:** Joining Steel Pipe
Prerequisite: 101, 102, 103, 104, 121
Description: Methods and procedures for joining steel pipe. Topics include: overview of welding; when to use compression couplings; kinds of compression couplings; flange types; flange installation procedure.
AOC's: damaged or deteriorated pipe, defective material, incorrect coupling selected,
AOC's: (specific to welding) incorrect procedure, precipitation, airborne contaminants, wind, temperature, lamination, reduction of wall thickness, misalignment, mismatched wall thickness, incorrect joint preparation, magnetism, induced ac current, wire corroded, excess moisture on rod, combustible gas present, dissimilar material grades, wrong filler group, defect not fully removed, contaminates present

Module Number: 421 **Title:** Pressure Testing Steel and Plastic Pipeline
Prerequisites: 101, 102, 103, 104, 411, 412
Description: Requirements, equipment, and procedures for pressure testing steel and plastic pipe. Topics include: facilities requiring pressure testing; DOT pressure testing requirements for transmission and distribution lines; pressure testing equipment; pressure testing procedure; documentation.

Module Number: 422 **Title:** Purging Safety
Prerequisite: 101, 102, 103, 104, 421
Description: Requirements and procedures for purging gas pipelines. Topics include: purging safety; purging with air; purging with natural gas; discharge venting; testing for complete purge.
AOC's: combustible gas mixture present, compressor not purged as required, pipeline not purged as required

Module Number: 431 **Title:** Cathodic Protection
Prerequisite: 101, 102, 103, 104, 422
Description: Introduction to corrosion prevention by cathodic protection. Topics include: fundamentals of corrosion; corrosion prevention measures; purpose and types of anodes; selection of anodes using soil resistivity; pipe-to-soil voltage measurement; anode installation; rectifiers; test stations; thermite welding procedures.
AOC's: general and localized corrosion, peeling, material defects, mechanical damage, contact with foreign structures, coating deterioration or damage, atmospheric corrosion, external corrosion, dis-bonding, moisture under coating, cracking, discoloring, mottling, internal corrosion, corrosive gas, missing coating, evidence of gas leaks, incomplete curing, lack of adhesion, coating thickness does not meet manufacturer spec., electrical connections deteriorated or not secure, minimum levels of cathodic protection not met, wiring deteriorated or damaged, electrical interference, isolation device failure, rectifier failure, electrical faults, dry soil, fluctuating reads, defective test station, cathodic protection component damage

Module Number: 441 **Title:** Tapping/Stopping: 1.25" - 4" Pipe
Prerequisite: 101, 102, 103, 104, 404
Description: Operation of general and specialized tapping and stopping equipment Topics include: operation of bagging and stopping equipment; operation of T. D. Williamson and Mueller tapping equipment; operation of Rockford-Eclipse and Qualitech-Eclipse stopping equipment.

AOC's: accidental ignition, external corrosion, insufficient clearance from existing fittings/joints/facilities, insufficient cover, gas leaks, over/under pressure, seams, lamination, incorrect fittings, improper procedures followed
Module Number: 444 **Title:** Plastic Pipe Repair
Prerequisites: 101, 102, 103, 104, 111, 131, 401, 403, 404, 411, 422, 441
Description: Methods and procedures for repair of plastic pipe. Topics include: temporary repairs, squeeze tools, making permanent repairs, remove and replace damaged pipe.

Module Number: 451 **Title:** Installing Mains
Prerequisites: 101, 102, 103, 104, 431, 441
Description: Methods and procedures for installing steel and plastic pipe. Topics include: pipe handling and storage, trenching procedure, installing new mains by direct burial, plastic pipe insertion.

Module Number: 452 **Title:** Installing Service
Prerequisite: 101, 102, 103, 104, 451
Description: Methods and procedures for installing service lines. Topics include: review of service line terminology; service line materials; trenching; installing steel service lines; installing plastic service lines.

Module Number: 453 **Title:** Crossings
Prerequisite: 101, 102, 103, 104, 452
Description: Specific procedures for installing pipe across highway, rail, bridge, creek, and ravine crossings. Topics include: highway and railroad crossing procedures including licenses and permits, casings, boring, and depth of crossing; bridge crossing procedures including pipe expansion, support, and anchors; creek and ravine crossing procedures including trenching and protection.
AOC's: corroded casings, damages casing or coating, filler material leaking, seals damaged/leaking or missing, vents for weather protection damaged missing or blocked, in-service pipe/segment damaged or leaking, presence of combustible gas in vent

Module Number: 461 **Title:** Steel and Cast Iron Repair Fittings
Prerequisite: 101, 102, 103, 104, 431
Description: Selecting and installing fittings. Topics include: selecting repair fittings for steel, cast iron, and plastic pipe; selecting main fittings for steel, cast iron, and plastic pipe; service fittings and techniques for connecting steel service to steel mains, steel service to cast iron mains, steel service to plastic mains, plastic service to plastic mains, and plastic service to steel mains.
AOC's: damage or deterioration exceeds repair limits of the clamp or sleeve, coating damaged during repair, pipe damaged during repair

Module Number: 462 **Title:** Maintaining Steel & Cast Iron Mains
Prerequisites: 101, 102, 103, 104, 261, 453, 461
Description: Requirements and procedures for maintaining, repairing, and replacing steel or cast iron mains. Topics include: identifying areas of greatest potential hazard; repair and replacement criteria; pressure reduction and shutdown prior to repair; inspection procedures for exposed steel mains; steel pipe repair methods; cast iron pipe repair methods; cast iron pipe protection.
AOC's: corrosion, non-compliance with procedures or standards, minimum underground clearances not met, lack of cover

Module Number: 463 **Title:** Reinforcing Steel & Plastic Mains
Prerequisite: 101, 102, 103, 104, 461
Description: Requirements and procedures for reinforcing mains. Topics include: identifying situations where reinforcement is required; kinds of reinforcement; procedures for reinforcing steel mains and plastic tie-ins to steel, cast iron, and plastic mains.

Module Number: 471 **Title:** Abandoning Facilities
Prerequisite: 101, 102, 103, 104, 462
Description: Procedures for deactivation of natural gas facilities. Topics include: reasons for deactivation; procedure for deactivating mains or service lines; discontinuing service; documentation.
AOC's: incomplete purging, procedures not followed or inadequate, abandoned segment not disconnected from all sources and supplies of gas, corrosion,

Module Number: 501 **Title:** Safe Vault Entry
Prerequisite: 101, 102, 103, 104, 122
Description: Procedures for entering and working safely in vaults. Topics include: actions to take before entry; atmospheric testing; vault entry PPE; vault entry procedures; required rescue equipment and procedures.
AOC's: atmospheric corrosion, inadequate or non-functioning ventilation, gas present, gas leaks, water in vault, vault in poor condition

Module Number: 511 **Title:** Inspecting and Maintaining Valves
Prerequisites: 101, 102, 103, 104
Description: Introduction to valves, and to the requirements and procedures for their inspection and maintenance. Topics include: valve designs and components; emergency and non-emergency valves; DOT inspection and maintenance requirements; valve inspection and maintenance procedure; documentation.
AOC's: corrosion, coating damage, valve inoperable or damaged, damage to surrounding facilities

Module Number: 512 **Title:** Inspecting Pressure Regulating & Limiting Stations
Prerequisites: 101, 102, 103, 104, 131, 501, 511
Description: DOT requirements for inspecting pressure regulating and limiting stations, and vaults that house them. Topics include: MAOP; kinds of regulators and over pressure protection devices (OPPD); inspection requirements and procedures for regulators and OPPDs; vault inspection requirements and procedures; documentation.
AOC's: atmospheric corrosion, hammering, unreliable operation, set point outside specified range, does not function at specified pressure, inability to obtain set point, oscillating/fluctuating/pulsating pressure, damaged or deteriorated components, damage to surrounding facilities, gas leaks, conditions that might impair operation (dirt, liquids), equipment in unsafe operating condition, abnormally high or low operating condition, MAOP exceeded, insufficient capacity, relief capacity impaired

Module Number: 521 **Title:** System Uprating
Prerequisites: 101, 102, 103, 104, 261, 271, 463, 512
Description: Requirements and procedures for increasing system operating pressure Topics include: Uprating terminology including MAOP and SMYS; pipe and components; uprating decision factors; field uprating procedures; documentation.

AOC's: leaks, unexpected pressure change(increase or decrease), valves not closed as required, connections to unregulated gas, service overpressure, services in abutting area connected to main being uprated, services in area being uprated connected to main in abutting area

APPENDIX 1

The attached training material cross-reference guide is to assist operators in referencing Midwest Energy Association (MEA) training materials that are available. MEA training materials are a suggested type of training materials available to operators and are not required under the IAMU program. If other training material is used, that material should be documented in Division 7.

MEA is a consortium of energy industry organizations that pursue operational excellence by providing training and information resources for themselves and other organizations to enhance employee safety, productivity, and positive customer relations. MEA accomplish this by:

1. Seeking opportunities that leverage the power of association.
2. Connecting members so needs are expressed, information is shared, and problems are solved.
3. Pooling expertise and dollars to create unique, high value services.
4. Sponsoring major operating conferences, workshops and classes.
5. Creating "distance" or packaged training and certification services such as computer, Developing compliance tools to meet OSHA, EPA and DOT regulations.

OQforAll
More than eight years of development and testing have produced OQ for all, OQ for all is designed to complement your current training program and apprenticeship practices, providing everything you need to successfully meet the DOT Operator Qualification (OQ) Regulation.

MEA TRAINING MATERIAL CROSS-REFERENCE GUIDE
REQUIRED COMPETENCIES AND SKILLS
(Protocols 1.05, 2.02, 4.01, 5.02 §192.803/195.503, §192.805/195.505, §192.809/195.509 Amdt 192-90, 8-20-01)

	Competencies and Skills	**Suggested Training Reference[1]**	**OQforAll References**	**ASME B31Q References**
Sec. 1	**Fundamentals of Natural Gas**			
1.1	Characteristics and hazards of natural gas	Gas Fundamentals Training, MEA-101	192-0101 Characteristics and Hazards of Natural Gas	ASME GAS01 Hazards of Natural Gas and Prevention of Accidental Ignition
1.2	Potential ignition sources: indoor and outdoor	Gas Fundamentals Training, MEA-102	192-2011 Prevention of Accidental Ignition	ASME GAS01 Hazards of Natural Gas and Prevention of Accidental Ignition
1.3	Recognizing emergency conditions	Gas Fundamentals Training, MEA-103	Abnormal Operating Conditions Module	ASME Abnormal Operating Conditions
1.4	Recognizing and reporting natural gas leaks	Gas Fundamentals Training, MEA-104	192-1202 Outside Gas Leakage Investigation, Pinpointing, and Grading 192-1203 Inside Gas Leakage Investigation	ASME 1241 Outside Leak Investigation ASME 1231 Inside Gas Leak Investigation
Sec. 2	**Record keeping**			
2.1	Documenting materials and installation records	Operator's workshop, O&M Manual MEA-402	N/A	
2.2	Documenting maximum allowable operating pressure (MAOP)	Operator's Workshop, O&M Manual MEA-421	192-2301 Uprating Steel Pipelines to a Pressure that will Produce a Hoop Stress	

			30% or More of SMYS 192-2302 Uprating Pipelines to a Pressure that will Produce a Hoop Stress Less than 30% SMYS	
	Competencies and Skills	**Suggested Training Reference[1]**	**OQforAll References**	**ASME B31Q References**
2.3	System up-rating	Operator's Workshop, MEA-521	192-1419 Uprating: Reinforce or Anchor Offsets, Bends, and Dead-ends 192-2301 Uprating Steel Pipelines to a Pressure that will Produce a Hoop Stress 30% or More of SMYS 192-2302 Uprating Pipelines to a Pressure that will Produce a Hoop Stress Less than 30% SMYS	
2.4	Investigating and documenting line failure	Operator's Workshop, MEA-462	Abnormal Operating Conditions Module	ASME Abnormal Operating Conditions
2.5	Accident reporting	Operator's Workshop, O&M Manual, MEA-103	Abnormal Operating Conditions Module	ASME Abnormal Operating Conditions
Sec. 3	**Marking and Mapping Facilities**			
3.1	Locating facilities using the conductive method	Operator's Workshop, Manufacturers' Procedures, MEA-402	192-0801 Locating Pipelines	ASME 1291 Locate Underground Pipelines
3.2	Locating facilities using the inductive method	Operator's Workshop, Manufacturers' Procedures, MEA-402	192-0801 Locating Pipelines	ASME 1291 Locate Underground Pipelines
3.3	Locating facilities using the inductive method (two persons)	Operator's Workshop, Manufacturers' Procedures, MEA-402	192-0801 Locating Pipelines	ASME 1291 Locate Underground Pipelines
3.4	Determining depth through triangulation	Operator's Workshop, Manufacturers' Procedures, MEA-402	192-0801 Locating Pipelines 192-1417 Protection when Minimum Cover not Met	ASME 1291 Locate Underground Pipelines
3.5	System mapping	Operator's Workshop MEA-402	192-0901 System Patrolling	ASME 1311 Inspect Pipeline Surface Conditions – Patrol Right of Way or Easement
Sec. 4	**Fundamentals of Field Safety in Construction, Operation, and Maintenance**			
4.1	Personal protective equipment	OSHA compliance manual and training, MEA-111	N/A	
4.2	Power tool safety	OSHA compliance manual and training, MEA-121	N/A	
4.3	Proper firefighting techniques	Emergency Procedures Training, MEA-122	N/A	

APPENDIX 1

	Competencies and Skills	Suggested Training Reference[1]	OQforAll References	ASME B31Q References
4.4	Controlling the accidental release of gas	Emergency Procedures Training, MEA-131	Abnormal Operating Conditions Module	
4.5	Soil subsidence	OSHA compliance manual and training, MEA-201	192-1402 Backfilling	ASME 0981 Backfilling
4.6	Atmospheric corrosion	Operator's Workshop, MEA-202	192-0401 Corrosion Monitoring - Atmospheric, External, and Internal	ASME 0141 Visual Inspect for Atmospheric Corrosion
4.7	Recognizing unsafe meter sets	MEA-211	192-1422 Segment Repair, Replacement, Etc. (Service Lines, Mains and Transmission Lines)	
4.8	Confined space entry (vaults, trenches, etc.)	OSHA compliance manual and training, MEA-501	192-1802 Vault Maintenance	ASME 1351 Vault Inspection and Maintenance
4.9	Job site protection	Compliance manual and training, MEA-MEA-401	N/A	
4.10	Purging safety	Operator's Workshop, MEA-422	192-1418 Purging	ASME 1651 Purging of Flammable or Inert Gases
4.11	Pressure testing steel and plastic pipeline	Operator's Workshop, MEA-421	192-1301 Leak and Strength Test - Service Lines, Mains, and Transmission Lines	ASME 0561 Pressure Test Non-Liquid Medium – Test Pressure Less Than 100 psi ASME 0571 Pressure Test Non-Liquid Medium Test Pressure Greater Than or Equal To 100 psi
4.12	Abandoning facilities	Operator's Workshop, MEA-471	192-1401 Abandonment or Inactivation of Facilities	ASME 1201 Temporary Isolation of Service Lines and Service Discontinuance
4.13	Excavation safety	OSHA compliance manual and training, MEA-404	N/A	
Sec. 5	**Fundamentals of Gas Leaks - Survey and Response**			
5.1	Leak classification	Emergency Procedures Training, Gas Fundamentals Training, MEA-221	192-1201 Leakage Survey: Distribution and Transmission 192-1202 Outside Gas Leakage Investigation, Pinpointing, and Grading 192-1203 Inside Gas Leakage Investigation	ASME 1261 Walking Gas Leakage Survey ASME 1271 Mobile Gas Leakage Survey – Flame Ionization ASME 1281 Mobile Leakage Survey – Optical Methane ASME 1231 Inside Leak Investigation
5.2	Procedures for leak surveys and patrols	Operator's Workshop, MEA-271	192-1201 Leakage Survey: Distribution and Transmission 192-1202 Outside Gas Leakage Investigation, Pinpointing, and Grading 192-1203 Inside Gas Leakage Investigation	ASME 1261 Walking Gas Leakage Survey ASME 1271 Mobile Gas Leakage Survey – Flame Ionization ASME 1281 Mobile Leakage Survey – Optical Methane ASME 1231 Inside Leak Investigation

APPENDIX 1

	Competencies and Skills	Suggested Training Reference[1]	Q41 References	ASME B31Q References
5.3	Combustible gas indicators	Operator's Workshop, Manufacturers' Procedures MEA-231	192-1201 Leakage Survey: Distribution and Transmission 192-1202 Outside Gas Leakage Investigation, Pinpointing, and Grading 192-1203 Inside Gas Leakage Investigation	ASME 1261 Walking Gas Leakage Survey ASME 1271 Mobile Gas Leakage Survey – Flame Ionization ASME 1281 Mobile Leakage Survey – Optical Methane ASME 1231 Inside Leak Investigation
5.4 Series	Electronic gas detectors	Operator's Workshop, Manufacturers' Procedures, MEA-231	192-1201 Leakage Survey: Distribution and Transmission 192-1202 Outside Gas Leakage Investigation, Pinpointing, and Grading 192-1203 Inside Gas Leakage Investigation	ASME 1261 Walking Gas Leakage Survey ASME 1271 Mobile Gas Leakage Survey – Flame Ionization ASME 1281 Mobile Leakage Survey – Optical Methane ASME 1231 Inside Leak Investigation
5.5	Flame ionization	Operator's Workshop, Manufacturers' Procedures MEA-232	192-1201 Leakage Survey: Distribution and Transmission 192-1202 Outside Gas Leakage Investigation, Pinpointing, and Grading 192-1203 Inside Gas Leakage Investigation	ASME 1261 Walking Gas Leakage Survey ASME 1271 Mobile Gas Leakage Survey – Flame Ionization ASME 1281 Mobile Leakage Survey – Optical Methane ASME 1231 Inside Leak Investigation
5.6	Bar hole testing and purging	Operator's Workshop, MEA-261	192-1201 Leakage Survey: Distribution and Transmission 192-1202 Outside Gas Leakage Investigation, Pinpointing, and Grading 192-1203 Inside Gas Leakage Investigation	ASME 1261 Walking Gas Leakage Survey ASME 1271 Mobile Gas Leakage Survey – Flame Ionization ASME 1281 Mobile Leakage Survey – Optical Methane ASME 1231 Inside Leak Investigation
Sec. 6	**Fundamentals of Customer Service**			
6.1	Carbon monoxide (CO) testing	Operator's Workshop, MEA-241	192-0101 Characteristics and Hazards of Natural Gas	
6.2	Investigating leaks	Operator's Workshop, MEA-272	192-1201 Leakage Survey: Distribution and Transmission 192-1202 Outside Gas Leakage Investigation, Pinpointing, and Grading 192-1203 Inside Gas Leakage Investigation	ASME 1261 Walking Gas Leakage Survey ASME 1271 Mobile Gas Leakage Survey – Flame Ionization ASME 1281 Mobile Leakage Survey – Optical Methane ASME 1231 Inside Leak Investigation
6.3	Combustion and ventilation air requirements	Operator's Workshop, MEA-301	N/A	

APPENDIX 1

	Competencies and Skills	Suggested Training Reference[1]	Q41 References	ASME B31Q References
6.4 Series	Pilot light operation	Operator's Workshop, MEA-311, 324	N/A	
6.5	Gas-air adjustment	Operator's Workshop, MEA-312	N/A	
6.6	Appliance venting	Operator's Workshop, MEA-313	N/A	
6.7	Pressure checks to establish gas service	Operator's Workshop, MEA-321	192-1301 Leak and Strength Test – Service Lines, Mains, and Transmission Lines	ASME 0561 Pressure Test Non-Liquid Medium – Test Pressure Less Than 100 psi ASME 0571 Pressure Test Non-Liquid Medium Test Pressure Greater Than or Equal To 100 psi
6.8	Establishing and disconnecting gas	Operator's Workshop, MEA-322	192-1301 Leak and Strength Test – Service Lines, Mains, and Transmission Lines 192-2014 Service Lines Not In Use and Service Discontinuance	ASME 0561 Pressure Test Non-Liquid Medium – Test Pressure Less Than 100 psi ASME 0571 Pressure Test Non-Liquid Medium Test Pressure Greater Than or Equal To 100 psi
Sec. 7	**Fundamentals of Construction**			
7.1	Pressure testing steel and plastic pipeline	Operator's Workshop, MEA-421	192-1301 Leak and Strength Test – Service Lines, Mains, and Transmission Lines	ASME 0561 Pressure Test Non-Liquid Medium – Test Pressure Less Than 100 psi ASME 0571 Pressure Test Non-Liquid Medium Test Pressure Greater Than or Equal To 100 psi
7.2	Procedures for abandoning facilities	Operator's Workshop, MEA-471	192-1401 Abandonment or Inactivation of Facilities	ASME 1201 Temporary Isolation of Service Lines and Service Discontinuance
7.3 Series	Cathodic protection (general)	Operator's Workshop, MEA-431	192-0501 Cathodic Protection System Maintenance 192-0503 Cathodic Protection Systems - Electrical Connections 192-0505 Cathodic Protection System Testing	ASME 0111 Maintain Rectifier ASME 0041 Installation and Maintenance of Mechanical Connection ASME 0061 Inspect or Test Cathodic Protection Bonds ASME 0071 Inspect or Test Cathodic Protection Electrical Isolation Devices ASME 0091 Trouble Shoot In-Service Cathodic Protection Systems
7.4	Constructing facilities across streets, railroads, and waterways	Operator's Workshop, MEA-453	192-1404 Casing Vents and Seals	ASME 0971 Installation and Maintenance of Casing Spacers, Vents and Seals
7.5	Operating thermite welder	Operator's Workshop, Manufacturers' Procedures, MEA-431	192-0401 Corrosion Monitoring - Atmospheric, External, and Internal	ASME 0141 Visual Inspection for Atmospheric Corrosion ASME 0151 Visual Inspection of Buried Pipe and Components When Exposed

				ASME 0161 Measure Internal Corrosion ASME 0191 Measure Atmospheric Corrosion ASME 0171 Measure External Corrosion
	Competencies and Skills	**Suggested Training Reference[1]**	**Q41 References**	**ASME B31Q References**
7.6	Installing tracer wire	Operator's Workshop, DOT Small Gas Operators Manual MEA-451, 452	192-1408 Installation of plastic pipe	ASME 0901 Installation of Plastic Pipe in a Ditch ASME 0941 Install Tracer Wire
			192-1409 Installation of Steel Pipe	ASME 0861 Installation of Steel Pipe in a Ditch
7.7 Series	Installing valves	Operator's Workshop, MEA-451	192-1427 Valve Maintenance	ASME 0321 Valve Corrective Maintenance
7.8	Steel and cast iron repair fittings	Operator's Workshop, Manufacturers' Procedures, MEA-461	192-1001 Cast Iron Joints – Sealing 192-1422 Segment Repair, Replacement, Etc. (Service Lines, Mains and Transmission Lines) 192-1430 Internal Sealing - Cast Iron and Ductile Iron Segments	ASME 0851 Internal Sealing – Iron and Ductile Iron ASME 0851 Internal Sealing – Cast Iron and Ductile Iron
7.9	Maintaining steel and cast iron mains	Operator's Workshop, MEA-462	192-1422 Segment Repair, Replacement, Etc. (Service Lines, Mains and Transmission Lines)	
7.10	Reinforcing steel and plastic mains	Fusion Workshop, MEA-463	192-1424 Support and Anchor Maintenance - Exposed Pipeline	ASME 0961 Above Ground Supports and Anchors – Inspection, Preventive and Corrective Maintenance
7.11 Series	Plastic pipe joining (fusion)	Fusion Workshop, MEA-411	192-1001 Cast Iron Joints– Sealing 192-1002 Plastic Pipe – Electrofusion 192-1003 Plastic Pipe - Butt Heat Fusion 192-1004 Plastic Pipe - Sidewall Heat Fusion	ASME 0851 Internal Sealing – Iron and Ductile Iron ASME 0781 Joining of Plastic – Electrofusion ASME 0751 Joining of Plastic Butt-Heat Fusion Manual ASME 0761 Joining of Plastic – Butt Heatea Fusion: Hydraul Machine
7.12 Series	Plastic pipe joining (mechanical couplings)	Operator's Workshop, MEA-463	192-0803 Inspection for Damage	ASME 1331 Damage Prevention Inspection during Third Party Excavation or Encroachment Activities as Determined Necessary by Operator

APPENDIX 1

	Competencies and Skills	Suggested Training Reference[1]	Q41 References	ASME B31Q References
7.13	Recognition of defective material	Operator's Workshop, MEA-411, 412, 421	192-1411 Inspection	ASME 0641 Visually Inspect Pipe and Components Prior to Installation
7.14	Steel pipe joining by welding	Pipeline Welding Workshop, Qualified Welding Procedures	192-2401 Welding	ASME 0801 Welding
7.15	Steel pipe joining by mechanical couplings	Operator's Workshop, Operator's Workshop, MEA-412	192-1005 Mechanical Joints	ASME 0681 Joining of {Plastic Pipe – Stab Fittings ASME 0691 Joining of Pipe – Non-Bottom Out Compression Couplings ASME 0711 Joining of Pipe – Compression Coupling
7.16	Damage prevention	Operator's Workshop, MEA-462	192-0803 Inspection for Damage	ASME 1331 Damage Prevention Inspection during Third Party Excavation or Encroachment Activities as Determined Necessary by Operator
7.17	Application of padding and shielding	Operator's Workshop, MEA-453	192-1402 Backfilling	ASME 0981 Backfilling
7.18	Replacing emergency valves	Operator's Workshop, MEA-441, 511	N/A	
7.19	Installing meter sets	Operator's Workshop, MEA-211, 322, 452	192-1803 Pressure Regulating, Limiting, and Relief Device -Operation and Maintenance	ASME 0381 ASME 0391 ASME 0401 ASME 0411 ASME 0421 ASME 0431
7.20	Tapping and stopping steel pipe 1" through 4"	Operator's Workshop, MEA-441	192-1426 Tapping Steel and Plastic Pipe	ASME 1101 Tapping a Pipeline with a Built-in Cutter ASME 1081 Tapping a Pipeline (Tap Diameter 2 Inch and Less) ASME 1091 Tapping a Pipeline (Tap Diameter greater than 2 Inch)
7.21	Tapping and stopping steel pipe 6" through 8"	Operator's Workshop, Manufacture's Procedures	192-1426 Tapping Steel and Plastic Pipe	ASME 1101 Tapping a Pipeline with a Built-in Cutter ASME 1081 Tapping a Pipeline (Tap Diameter 2 Inch and Less) ASME 1091 Tapping a Pipeline (Tap Diameter greater than 2 Inch)
7.22	Tapping, stopping, and squeeze-off polyethylene pipe	Operator's Workshop, MEA-451, 452	192-1426 Tapping Steel and Plastic Pipe	ASME 1101 Tapping a Pipeline with a Built-in Cutter ASME 1081 Tapping a Pipeline (Tap Diameter 2 Inch and Less) ASME 1091 Tapping a Pipeline (Tap Diameter greater than 2 Inch)
7.23	Abandonment of services	Operator's Workshop, MEA-471, 501	192-1802 Vault Maintenance	ASME 1351 Vault Inspection and Maintenance

APPENDIX 1

	Competencies and Skills	Suggested Training Reference[1]	Q41 References	ASME B31Q References
Sec. 8	**Fundamentals of Construction – Heavy Equipment Operation**			
8.1	Operating backhoe	Operator's Workshop, MEA-403	N/A	
8.2	Operating trencher	Operator's Workshop, Manufacturers' Procedures, MEA-403	N/A	
8.3	Operating boring equipment	Operator's Workshop, Manufacturers' Procedures	N/A	
8.3.1	Operating mole equipment	Operator's Workshop, Manufacturers' Procedures	N/A	
8.4	Ditch and backfill inspection	Operator's Workshop, MEA-404	192-1402 Backfilling	ASME 0981 Backfilling
Sec. 9	**Fundamentals of Measurement and Control**			
9.2	Odorization measurement and control	Operator's Workshop, MEA-251	192-1501 Odorization - Mains and Transmission Lines	ASME 1211 Odorization – Periodic Sampling ASME1221Odorization – Odorizer Inspection, Testing, Preventive and Corrective Maintenance
Sec. 10	**Corrosion Control**			
10.1	Cathodic protection	Corrosion control workshop, MEA-431	192-0501 Cathodic Protection System Maintenance	ASME 0101 Maintain Rectifier ASME 0081 Install Cathodic Protectiion Electrical Isolation Devices ASME 0031Inspect and Monitor Galvanic Ground Beds/Anodes
10.2	Internal corrosion	Corrosion control workshop, MEA-431	192-0401 Corrosion Monitoring - Atmospheric, External, and Internal	ASME 0141 Visual Inspection for Atmospheric Corrosion ASME 0151 Visual Inspection of Buried Pipe and Components When Exposed ASME 0161 Measure Internal Corrosion ASME 0191 Measure Atmospheric Corrosion ASME 0171 Measure External Corrosion

APPENDIX 1

	Competencies and Skills	Suggested Training Reference[1]	Q41 References	ASME B31Q References
10.3	External corrosion	Corrosion control workshop, MEA-431	192-0401 Corrosion Monitoring - Atmospheric, External, and Internal	ASME 0141 Visual Inspection for Atmospheric Corrosion ASME 0151 Visual Inspection of Buried Pipe and Components When Exposed ASME 0161 Measure Internal Corrosion ASME 0191 Measure Atmospheric Corrosion ASME 0171 Measure External Corrosion
10.4	Atmospheric corrosion	Corrosion control workshop, MEA-202	192-0401 Corrosion Monitoring - Atmospheric, External, and Internal	ASME 0141 Visual Inspection for Atmospheric Corrosion ASME 0151 Visual Inspection of Buried Pipe and Components When Exposed ASME 0161 Measure Internal Corrosion ASME 0191 Measure Atmospheric Corrosion ASME 0171 Measure External Corrosion
10.5	Coatings	Corrosion control workshop, MEA-431	192-0402 Coating Maintenance	ASME 1001 Coating Application and Repair – Spayed ASME 1011 External Coating Application & Repair – Cold Wrapped (Tape/Wax/Tar)
10.6 Series	Holiday detection (coating inspection)	Corrosion control workshop, MEA-431	192-0402 Coating Maintenance	ASME 1001 Coating Application and Repair – Spayed External Coating Application & Repair – Cold Wrapped (Tape/Wax/Tar) ASME 1011
10.7	Painting and jacketing above ground facilities	Corrosion control workshop, MEA-202	192-0402 Coating Maintenance	ASME 1001 Coating Application and Repair – Spayed External Coating Application & Repair – Cold Wrapped (Tape/Wax/Tar) ASME 1011
10.8	Installation of cathodic protection (sacrificial anode system)	Corrosion control workshop, MEA-431	192-0501 Cathodic Protection System Maintenance 192-0503 Cathodic Protection Systems - Electrical Connections 192-0505 Cathodic Protection System Testing	ASME 0111 Maintain Rectifier ASME 0041 Installation and Maintenance of Mechanical Connection ASME 0061 Inspect or Test Cathodic Protection Bonds ASME 0071 Inspect or Test Cathodic Protection Electrical Isolation Devices ASME 0091 Trouble Shoot In-Service Cathodic Protection Systems

APPENDIX 1

	Competencies and Skills	Suggested Training Reference[1]	Q41 References	ASME B31Q References
10.9	Installation of impressed current system (rectifier)	Corrosion control workshop, MEA-431	192-0501 Cathodic Protection System Maintenance 192-0503 Cathodic Protection Systems - Electrical Connections 192-0505 Cathodic Protection System Testing	ASME 0111 Maintain Rectifier ASME 0041 Installation and Maintenance of Mechanical Connection ASME 0061 Inspect or Test Cathodic Protection Bonds ASME 0071 Inspect or Test Cathodic Protection Electrical Isolation Devices ASME 0091 Trouble Shoot In-Service Cathodic Protection Systems
10.10	Inspection, monitoring cathodic protection system	Corrosion control workshop, MEA-431	192-0501 Cathodic Protection System Maintenance 192-0503 Cathodic Protection Systems - Electrical Connections 192-0505 Cathodic Protection System Testing	ASME 0111 Maintain Rectifier ASME 0041 Installation and Maintenance of Mechanical Connection ASME 0061 Inspect or Test Cathodic Protection Bonds ASME 0071 Inspect or Test Cathodic Protection Electrical Isolation Devices ASME 0091 Trouble Shoot In-Service Cathodic Protection Systems
Sec. 11	**Odorization**			
11.1	Operating and maintaining differential odorant system	Operator's Workshop, O&M Manual, MEA-251	192-0501 Cathodic Protection System Maintenance	ASME 0111 Maintain Rectifier ASME 0041 Installation and Maintenance of Mechanical Connection ASME 0061 Inspect or Test Cathodic Protection Bonds ASME 0071 Inspect or Test Cathodic Protection Electrical Isolation Devices ASME 0091 Trouble Shoot In-Service Cathodic Protection Systems
11.2	Operating and maintaining injection odorant system	Operator's Workshop, O&M Manual, MEA-251	192-1501 Odorization - Mains and Transmission Lines	ASME 1211 Odorization – Periodic Sampling ASME1221Odorization – Odorizer Inspection, Testing, Preventive and Corrective Maintenance
11.3	Testing odorant level	Operator's Workshop, O&M Manual, MEA-251	192-1501 Odorization - Mains and Transmission Lines	ASME 1211 Odorization – Periodic Sampling ASME1221Odorization – Odorizer Inspection, Testing, Preventive and Corrective Maintenance

APPENDIX 1

	Competencies and Skills	Suggested Training Reference[1]	Q41 References	ASME B31Q References
Sec. 12	**Other Operating and Maintenance Skills**			
12.1	Operating valves (including emergency valves), regulators, and relief valves	Operator's Workshop, O&M Manual, MEA-244, 511, 512	192-0701 Locating, Installing, and Protecting Customer Meters and Regulators 192-0702 Customer Pressure Regulating, Limiting, and Relief Devices - Operation and Maintenance	ASME 1161 Installation of Customer Meters and Regulators – Residential and Small Commercial ASME 1171 Installing Customer Meters – Large Commercial and Industrial ASME 1181 Installing and Maintaining Customer Pressure Regulating. Limiting and Relief Device – Large Commercial & Industrial
12.2	Inspecting pressure regulating and limiting stations	Operator's Workshop, O&M Manual, MEA-512	192-0701 Locating, Installing, and Protecting Customer Meters and Regulators 192-0702 Customer Pressure Regulating, Limiting, and Relief Devices - Operation and Maintenance	ASME 1161 Installation of Customer Meters and Regulators – Residential and Small Commercial ASME 1171 Installing Customer Meters – Large Commercial and Industrial ASME 1181 Installing and Maintaining Customer Pressure Regulating. Limiting and Relief Device – Large Commercial & Industrial
12.3	Inspecting and maintaining key valves	Operator's Workshop, O&M Manual, MEA-511	192-1427 Valve Maintenance	ASME 0331 Valve – Visual Inspection and Partial Opération ASME 0321 Valve Corrective Maintenance ASME 0341 Valve – Préventive Maintenance ASME 1191 Maintenance of Service Valves Upstream of the Meter
12.4	System uprating	Operator's Workshop, O&M Manual, MEA-521	192-1419 Uprating: Reinforce or Anchor Offsets, Bends, and Dead-ends	
Sec. 13	**Operating Peak Shaving Plant (Propane/air mixture/injection)**			
13.1	Pre-start-up procedures	O&M Manual, Emergency shut down procedures	N/A	
13.2	Start-up/operating procedures/shut down in accordance with operators manual for specific equipment	O&M Manual, Emergency shut down procedures	192-0301 Operating a Gas Compressor Unit 192-0302 Shutting Down a Gas Compressor Unit	ASME 0471 ASME 0481 ASME 0441 ASME 0461

1Reference to operator training refers to workshops conducted by state and regional associations, such as the Iowa Association of Municipal Utilities and the Midwest Energy Association (formerly known as Midwest Gas Association), manufacturers and distributors of gas industry products and equipment, state regulatory agencies, and other organizations. Specific references to MEA materials are to training modules in the Midwest Energy Association's Operator Qualification Training series.