**NATURAL GAS OPERATOR QUALIFICATION PROGRAM**

**FOR**

**CITY OF ALPINE GAS DEPT**

Adopted February 22, 2012

Revised 3/19/2013

SECTION 1 PURPOSE AND SCOPE

**CITY OF ALPINE GAS DEPT OPERATOR**

**QUALIFICATION PROGRAM**

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SECTION 1 Purpose and Scope

**CITY OF ALPINE GAS DEPT OPERATOR QUALIFICATION PROGRAM**

* 1. PURPOSE: This program is intended to meet the requirements, effective April 27, 2001, of the Office of Pipeline Safety, U.S. Department of Transportation, for Natural Gas Operators (required below). 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 October 28, 2002, shall be qualified in accordance with this program. Work performance history review is not anticipated to be used as 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, and Regular 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**

**192.901 SCOPE**

1. This subpart prescribes the minimum requirements for Operator Qualification of individuals performing covered tasks on a pipeline facility.
2. For the purpose of this subpart, a covered task is an activity, identified by the operator, that:
3. Is performed on a pipeline facility
4. Is an operations or maintenance task
5. Is performed as a requirement of this part; and
6. Affects the operation or the integrity of the pipeline

**192.803 DEFINITIONS**

*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:

1. Indicate a condition exceeding design limits
2. 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:

SECTION 1 PURPOSE and SCOPE

1. Written examination
2. Oral examination
3. Work performance history review
4. Observation during
5. Performance on the job
6. On the job training
7. Simulations
8. Other forms of assessment.

*Qualified,* means that an individual has been evaluated and can:

1. Perform assigned covered tasks
2. Recognize and react to abnormal operating conditions

**192.805 QUALIFICATION**

Each operator shall have and follow a written qualification program. The program shall include provisions to:

1. Identify covered tasks
2. Ensure through evaluation that individuals performing covered tasks are qualified
3. 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
4. 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
5. Evaluate an individual if the operator has 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 tasks
7. 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.

1. Qualification records shall include:
2. Identification of qualified individual(s)
3. Identification of the covered tasks the individual is qualified to perform
4. Date(s) of current qualification, and
5. Qualification method(s)
6. 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.

**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.

SECTION 1 PURPOSE and SCOPE

* 1. **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 Fundamental of Natural Gas.

(Protocol 2.01 § 192.805/195.505)

METHOD USED FOR DETERMINING COVERED TASK LIST

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* 1. **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 Section, 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 Section.

The Plan Administrator will make sure the evaluations are documented, i.e. test questions are written and observation evaluations include checklists indicating what is observed. List these evaluations in the OQ Program as evaluations you accept for these tasks.

(Protocols 1.02, 3.01, 4.02, 7.01, § 192.803/195.503, 1923805/195.505, 192.807/195.507)

(Example) Qualified under Southern Cross Leak Detection School

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Copies of the topics covered are on file

SECTION 1 PURPOSE and SCOPE

**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 (70%) 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. **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. **RE-QUALIFICATION**

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

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SECTION 1PURPOSE and SCOPE

* 1. **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 Section), 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 (i.e. as contained in Section 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. **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 Section 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, § 192.085/195.505)

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SECTION 1 PURPOSE and SCOPE

* 1. **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 and (i) a death or personal injury necessitating in-patient hospitalization; or (ii) estimated property damage, including cost of gas lost, of the operator or others, or both, of $50,000 or more.¹
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 anytime 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)

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 Incidents with lower property damage may need to be reported to Railroad Commission of Texas. For example, Texas defines a reportable incident as one with $5,000 of losses or more. These lower-threshold incidents require re-evaluation of qualification.

SECTION 1 PURPOSE and SCOPE

* 1. **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 Section 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. **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 Department’s gas facility, a gas facility of similar design, the TGA training facilities 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 Section 7.

Retraining if qualifications are questioned will be conducted as per 1.9 of this Section "Reevaluation for Cause."

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

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SECTION 1 PURPOSE and SCOPE

**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 record keeping methods may also be maintained while the individual is performing the covered task. Prior qualifications of persons that are no longer performing covered tasks, shall be retained for the time period of five years after the qualification expires.

City of Alpine Gas Dept may maintain an off-site back-up of documentation for the OQ record.

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

* Shut in Test Procedures
* Start up Procedures

SECTION 1 PURPOSE and SCOPE

**1.15 QUALIFICATION METHODS**

Qualification methods and time frames required were established by . 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 or other training materials.

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

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**1.16 ABNORMAL OPERATING CONDITIONS**

AOC’s are included in the specific tasks, and how to recognize and respond to them are included in the qualification method as outlined in Section 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 Section 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 Section 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 Section 5.

(Protocol 6.01, § 192.805/195.505)

SECTION 1 PURPOSE and SCOPE

**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 Section 3 of this program. Competency in fundamentals of natural gas is required for all covered tasks. (Protocols 1.01, 2.01, § 192.850/195.505)

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

Tasks:

1. Operating valves (open/close)
2. 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:

1. Conducting shut down/Start up procedures
2. Operating by-pass
3. Performing lock-up
4. Stroking to full open
5. Adjusting to desired operating pressure
6. Inspecting gauges and/or chart recorders
7. Inspecting filters/valves/strainers
8. Inspecting for atmospheric corrosion
9. Inspecting for protection against third-party interference
10. Inspecting relief valve for damage
11. Checking relief set pressure
12. Checking capacity
13. 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 |

SECTION 2 Covered Tasks

P-3 CONDUCT LEAK SURVEYS

Tasks:

1. Operating combustible gas indicator (and/or any other leak detection equipment used on the facility)
2. Operating electronic gas detector
3. Knowing the different leak classifications (distinguish the difference)
4. 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 |
| 5.6 | Bar Hole Testing and Purging |

P-4 OPERATE LINE LOCATOR

Tasks:

1. Locating inductively
2. Locating conductively
3. Proper placement of ground
4. 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:

1. Mapping
2. Record keeping
3. Selecting proper welding and/or fusion procedures
4. Installing tracer wire for plastic pipe
5. Installing valves and fittings

SECTION 2 Covered Tasks

1. Conducting pressure tests
2. Purging
3. 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 or equipment. |

P-6 INSTALL SERVICE LINES/REINSTATING SERVICE LINES

Tasks:

1. Mapping
2. Record keeping
3. Selecting proper welding and/or fusion procedures
4. Installing tracer wire for plastic pipe
5. Installing valves, pipe, including excess flow valves, and fittings
6. Pressure testing
7. Purging
8. Selection proper riser and meter set
9. 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 |
| 3.3 | 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 |

SECTION 2 Covered Tasks

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 (indoors and outdoor) |

P-8 OPEARTE 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:

1. Identifying building or construction near line
2. Identifying soil subsidence
3. 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 |

SECTION 2 Covered Tasks

P-11 OPERATE BACKHOE

Tasks:

1. Loading and unloading
2. Conducting pre-operating inspection
3. Operating

Required Competencies and Skills

|  |  |
| --- | --- |
| 1 (all) | Fundamentals of Natural Gas |
| 8.1 | Operating backhoe |

P-12 OPERATE TRENCHER

Tasks:

1. Loading and unloading
2. Conducting pre-operating inspection
3. 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:

1. Performing butt fusion
2. Performing socket fusion
3. Performing saddle fusion
4. Performing electro fusion

Required Competencies and Skills:

|  |  |
| --- | --- |
| 1 (all) | Fundamentals of Natural Gas |
| 7.11 | Plastic pipe joining (fusion) |

SECTION 2 Covered Tasks

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

Tasks:

1. Installing stab fittings
2. Installing compression fittings
3. Installing boltless couplings

Required Competencies and Skills:

|  |  |
| --- | --- |
| 1 (all) | Fundamentals of Natural Gas |
| 7.12 | Plastic pipe joining (mechanical couplings) |

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 | 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 |

SECTION 2 Covered Tasks

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:

1. Installing bolted or boltless insulated couplings
2. 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:

1. Inspecting tapping coupons
2. Inspecting open ends

Required Competencies and Skills:

|  |  |
| --- | --- |
| 1 (all) | Fundamentals of Natural Gas |
|  | Internal corrosion |

P-23 INSPECT FOR EXTERNAL CORROSION

Tasks:

1. Examining exposed pipelines
2. Examining coating for damage
3. 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:

1. Inspecting paint coverage
2. 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:

1. Inspecting for pitting
2. 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 |

SECTION 2 Covered Tasks

P-26 APPLY COATINGS

Tasks:

1. 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:

1. Visually inspecting
2. 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:

1. Properly placing half-cell
2. Using voltmeter

Required Competencies and Skills:

|  |  |
| --- | --- |
| 1 (all) | Fundamentals of Natural Gas |
| 10.1 | Cathodic protection |

P-29 INSPECT FOR DETERIORATION AND DAMAGE

Tasks:

1. Inspecting new pipe fittings
2. Inspecting coatings
3. Inspecting for dents
4. 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 |

SECTION 2 Covered Tasks

P-30 INSPECT DITCHES AND BACKFILLS

Tasks:

1. Looking for rocks
2. Looking for sharp objects
3. 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:

1. Protecting dielectric fittings
2. Protecting identification tags
3. Protecting regulator vents
4. 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:

1. Attaching galvanic anode by thermite weld
2. Attaching galvanic anode by bolt-on-clamps
3. Attaching drive-in galvanic anode

Required Competencies and Skills:

|  |  |
| --- | --- |
| 1 (all) | Fundamentals of Natural Gas |
| 10.8 | Installation of Cathodic protection (sacrificial anode system) |

SECTION 2 Covered Tasks

P-34 INSTALL IMPRESSED CURRENT SYSTEM---**NOT APPLICABLE**

Tasks:

1. Installing rectifier
2. Installing anode bed
3. 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:

1. Looking at test stations for physical damage
2. Looking at dielectric fittings
3. Looking for broken wires
4. 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:

1. Recording pipe-to soil readings
2. Testing for AC drain
3. Inspecting dielectric spacers
4. Inspecting DC interference bond
5. Testing soil resistivity
6. Establishing current requirements
7. Inspecting reverse current switch diodes
8. Recording IR drops
9. 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 system |

SECTION 2 Covered Tasks

P-38 ELECTRICALLY ISOLATE SYSTEM

Tasks:

1. Installing or maintaining flange gaskets
2. Installing or maintaining weld-in insulating fittings
3. Installing or maintaining insulated meter spuds
4. Installing or maintaining insulated gas cocks
5. 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:

1. Using current interrupter
2. 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:

1. Installing tapping tees
2. Installing bottom-out fittings
3. Installing line stoppers
4. Installing bag stoppers
5. 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:

1. Squeezing off
2. Performing hot-tap
3. Grounding

Required Competencies and Skills:

|  |  |
| --- | --- |
| 1 (all) | Fundamentals of Natural Gas |
| 7.22 | Tapping and stopping polyethylene pipe |

SECTION 2 Covered Tasks

P-44 MAINTAIN KEY VALVES

Tasks:

1. Positioning valve key on valve
2. Closing and opening valve
3. Lubricating valve (determine correct amount required)
4. Valve mapping
5. Valve location
6. Verifying area of control (mapping)
7. Identifying valve material
8. Identifying valve size
9. 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:

1. Inspecting for proper location
2. Inspecting stop cock installation for easy access
3. Determining whether meter set insulated
4. Inspecting regulator installation for vent location/direction
5. Inspecting meter installation for flow direction
6. Checking for riser height and if meter set is level
7. Checking pressure and adjust (customer side)
8. Checking for lock-up
9. Testing for no-flow
10. 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 |

SECTION 2 Covered Tasks

P-47 SYSTEM UPRATING (Increasing Pressure)

Tasks:

1. Inspecting meter sets (regulators, orifice size, internal relief)
2. Inspecting regulator/relief capacities
3. Leak survey
4. 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)

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | | Competencies and Skills | | Original Qualification Method | | Re-Qualification  Method | | Re-Qualification  Period | | Suggested Training Reference¹ |
| **Sec. 1** | | **Fundamentals of Natural Gas** | |  | |  | |  | |  |
| 1.1 | | Characteristics and hazards of natural gas | | Written or hands-on evaluation | | Written or hands-on  evaluation | | Prerequisite, then 60 months, not to exceed 60 months | | Gas Fundamentals  Training, MEA-101 |
| 1.2 | | Potential ignition sources: indoor and outdoor | | Written or hands-on evaluation | | Written or hands-on  evaluation | | Prerequisite, then 60 months, not to exceed 60 months | | Gas Fundamentals  Training, MEA-102 |
| 1.3 | | Recognizing emergency conditions | | Written or hands-on evaluation | | Written or hands-on  evaluation | | Prerequisite, then 60 months, not to exceed 60 months | | Gas Fundamentals  Training, MEA-103 |
| 1.4 | | Recognizing and reporting natural gas leaks | | Written or hands-on evaluation | | Written or hands-on  evaluation | | Prerequisite, then 60 months, not to exceed 60 months | | Gas Fundamentals  Training, MEA-104 |
| **Sec. 2** | | **Record Keeping** | |  | |  | |  | |  |
| 2.1 | | Documenting materials and installation records | | Written or hands-on evaluation | | Written or hands-on evaluation | | 60 months, not to exceed 60 months | | Operator’s workshop, O&M Manual  MEA-402 |
| 2.2 | | Documenting maximum allowable operating pressure (MAOP) | | Written or hands-on evaluation | | Written or hands-on evaluation | | 60 months, not to exceed 60 months | | Operator’s workshop, O&M Manual  MEA-421 |
| 2.3 | | System up-rating | | Written or hands-on evaluation | | Written or hands-on evaluation | | 60 months, not to exceed 60 months | | Operator’s workshop,  MEA-521 |
| 2.4 | | Investigating and documenting line failure | | Written or hands-on evaluation | | Written or hands-on evaluation | | 60 months, not to exceed 60 months | | Operator’s workshop,  MEA-462 |
| 2.5 | | Accident reporting | | Written or hands-on evaluation | | Written or hands-on evaluation | | 60 months, not to exceed 60 months | | Operator’s workshop, O&M Manual  MEA-103 |
| **Sec. 3** | | **Marking and Mapping Facilities** | |  | |  | |  | |  |
| 3.1 | | Locating facilities using the conductive method | | Written or hands-on evaluation | | Written or hands-on evaluation | | 60 months, not to exceed 60 months | | Operator’s Workshop, Manufacturer’s Procedures, MEA-402 |
| 3.2  **N/A** | | Locating facilities using the inductive method | | N/A | | N/A | | N/A | | N/A |
| 3.3  **N/A** | | Locating facilities using the inductive method (two persons) | | N/A | | N/A | | N/A | | N/A |
| 3.4  **N/A** | | Determining depth through triangulation | | N/A | | N/A | | N/A | | N/A |
| 3.5 | | System mapping | | Written or hands-on evaluation | | Written or hands-on evaluation | | 60 months, not to exceed 60 months | | Operator’s Workshop MEA-402 |
| **Sec. 4** | | **Fundamentals of Field Safety in Construction, Operation, and Maintenance** | |  | |  | |  | |  |
| 4.1 | | Personal protective equipment | | Written or hands-on evaluation | | Written or hands-on evaluation | | 36 months, not to exceed 39 months | | OSHA compliance manual and training, MEA-111 |
| 4.2  **N/A** | | Power tool safety | | **N/A** | | **N/A** | | **N/A** | | **N/A** |
| 4.3  **N/A** | | Proper firefighting techniques | | N/A | | N/A | | N/A | | N/A |
| 4.4 | | Controlling the accidental release of gas | | Written or hands-on evaluation | | Written or hands-on evaluation | | 36 months, not to exceed 39 months | | Emergency Procedures Training, MEA-131 |
| 4.5 | | Soil Subsidence | | Written or hands-on evaluation | | Written or hands-on evaluation | | 36 months, not to exceed 39 months | | OSHA compliance manual and training, MEA-201 |
| 4.6 | | Atmospheric corrosion | | Written or hands-on evaluation | | Written or hands-on evaluation | | 36 months, not to exceed 39 months | | Operator’s Workshop, MEA-202 |
| 4.7 | | Recognizing unsafe meter sets | | Written or hands-on evaluation | | Written or hands-on evaluation | | 36 months, not to exceed 39 months | | MEA-211 |
| 4.9 | | Job site protection | | Written or hands-on evaluation | | Written or hands-on evaluation | | 36 months, not to exceed 39 months | | Compliance manual and training, MEA-401 |
| 4.10 | | Purging safety | | Written or hands-on evaluation | | Written or hands-on evaluation | | 36 months, not to exceed 39 months | | Operator’s Workshop, MEA-422 |
| 4.11 | | Pressure testing steel and plastic pipeline | | Written or hands-on evaluation | | Written or hands-on evaluation | | 36 months, not to exceed 39 months | | Operator’s Workshop, MEA-421 |
| 4.12 | | Abandoning facilities | | Written or hands-on evaluation | | Written or hands-on evaluation | | 36 months, not to exceed 39 months | | Operator’s Workshop, MEA-471 |
| 4.13  N/A | | Excavation safety | | N/A | | N/A | | N/A | | N/A |
| **Sec. 5** | | **Fundamentals of Gas Leaks-Survey and Response** | |  | |  | |  | |  |
| 5.1 | | Leak classification | | Written or hands-on evaluation | | Written or hands-on evaluation | | 60 months, not to exceed 60 months | | Emergency Procedures Training, Gas Fundamentals Training, MEA-221 |
| 5.2 | | Procedures for leak surveys and patrols | | Written or hands-on evaluation | | Written or hands-on evaluation | | 60 months, not to exceed 60 months | | Operator’s Workshop, MEA-271 |
| 5.3 | | Combustible gas indicators | | Written or hands-on evaluation | | Written or hands-on evaluation | | 60 months, not to exceed 60 months | | Operator’s Workshop, Manufacturer’s Procedures, MEA-231 |
| 5.4 | | Electronic gas detectors | | Written or hands-on evaluation | | Written or hands-on evaluation | | 60 months, not to exceed 60 months | | Operator’s Workshop, Manufacturer’s Procedures, MEA-231 |
| 5.5 | | Flame ionization | | N/A | | N/A | | N/A | | N/A |
| 5.6 | | Bar-hole testing and purging | | Written or hands-on evaluation | | Written or hands-on evaluation | | 60 months, not to exceed 60 months | | Operator’s Workshop, MEA-261 |
| **Sec. 6** | | **Fundamentals of Customer Service** | |  | |  | |  | |  |
| 6.1 | | Carbon monoxide (CO) testing | | Written or hands-on evaluation | | Written or hands-on evaluation | | 60 months, not to exceed 60 months | | Operator’s Workshop, MEA-241 |
| 6.2 | | Investigating leaks | | Written or hands-on evaluation | | Written or hands-on evaluation | | 60 months, not to exceed 60 months | | Operator’s Workshop, MEA-272 |
| 6.3 | | Combustion and ventilation air requirements | | Written or hands-on evaluation | | Written or hands-on evaluation | | 60 months, not to exceed 60 months | | Operator’s Workshop, MEA-301 |
| 6.4 | | Pilot light operation | | Written or hands-on evaluation | | Written or hands-on evaluation | | 60 months, not to exceed 60 months | | Operator’s Workshop, MEA-311,324 |
| 6.5 | | Gas-air adjustment | | Written or hands-on evaluation | | Written or hands-on evaluation | | 60 months, not to exceed 60 months | | Operator’s Workshop, MEA-312 |
| 6.6 | | Appliance venting | | Written or hands-on evaluation | | Written or hands-on evaluation | | 60 months, not to exceed 60 months | | Operator’s Workshop, MEA-313 |
| 6.7 | | Pressure checks to establish gas service | | Written or hands-on evaluation | | Written or hands-on evaluation | | 60 months, not to exceed 60 months | | Operator’s Workshop, MEA-321 |
| 6.8 | | Establishing and disconnecting gas | | Written or hands-on evaluation | | Written or hands-on evaluation | | 60 months, not to exceed 60 months | | Operator’s Workshop, MEA-322 |
| **Sec. 7** | | **Fundamentals of Construction** | |  | |  | |  | |  |
| 7.1 | | Pressure testing steel and plastic pipeline | | Written or hands-on evaluation | | Written or hands-on evaluation | | 36 months, not to exceed 39 months | | Operator’s Workshop, MEA-421 |
| 7.2 | | Procedures for abandoning facilities | | Written or hands-on evaluation | | Written or hands-on evaluation | | 36 months, not to exceed 39 months | | Operator’s Workshop, MEA-471 |
| 7.3 | | Cathodic protection (general) | | Written or hands-on evaluation | | Written or hands-on evaluation | | 36 months, not to exceed 39 months | | Operator’s Workshop, MEA-431 |
| 7.4 | | Constructing facilities across streets, railroads, and waterways | | Written or hands-on evaluation | | Written or hands-on evaluation | | 36 months, not to exceed 39 months | | Operator’s Workshop, MEA-453 |
| 7.5 | | Operating thermite welder | | Written or hands-on evaluation | | Written or hands-on evaluation | | 36 months, not to exceed 39 months | | Operator’s Workshop, Manufacturer’s Procedures, MEA-431 |
| 7.6 | | Installing tracer wire | | Written or hands-on evaluation | | Written or hands-on evaluation | | 36 months, not to exceed 39 months | | Operator’s Workshop, DOT Small Gas Operator’s Manual,MEA-451,452 |
| 7.7 | | Installing valves | | Written or hands-on evaluation | | Written or hands-on evaluation | | 36 months, not to exceed 39 months | | Operator’s Workshop, MEA-451 |
| 7.8 | | Steel and cast iron repair fittings | | Written or hands-on evaluation | | Written or hands-on evaluation | | 60 months, not to exceed 60 months | | Operator’s Workshop, Manufacturer’s Procedures, MEA-461 |
| 7.9 | | Reinforcing steel and plastic mains | | Written or hands-on evaluation | | Written or hands-on evaluation | | 60 months, not to exceed 60 months | | Operator’s Workshop, MEA-462 |
| 7.10 | | Reinforcing steel and plastic mains | | Written or hands-on evaluation | | Written or hands-on evaluation | | 60 months, not to exceed 60 months | | Fusion Workshop,  MEA-462 |
| 7.11 | | Plastic pipe joining (fusion) | | Written or hands-on evaluation | | Written or hands-on evaluation | | 12 months, not to exceed 15 months | | Fusion Workshop,  MEA-411 |
| 7.12 | | Plastic pipe joining (mechanical couplings) | | Written or hands-on evaluation | | Written or hands-on evaluation | | 36 months, not to exceed 39 months | | Operator’s Workshop, MEA-463 |
| 7.13 | | Recognition of defective material | | Written or hands-on evaluation | | Written or hands-on evaluation | | 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 15 months | | Pipeline Welding Workshop, Qualified Welding Procedures |
| 7.15 | | Steel pipe joining by mechanical couplings | | Written or hands-on evaluation | | Written or hands-on evaluation | | 36 months, not to exceed 39 months | | Operator’s Workshop, MEA-412 |
| 7.16 | | Damage prevention | | Written or hands-on evaluation | | Written or hands-on evaluation | | 36 months, not to exceed 39 months | | Operator’s Workshop, MEA-462 |
| 7.17 | | Application of padding and shielding | | Written or hands-on evaluation | | Written or hands-on evaluation | | 36 months, not to exceed 39 months | | Operator’s Workshop, MEA-453 |
| 7.18 | | Replacing emergency valves | | Written or hands-on evaluation | | Written or hands-on evaluation | | 60 months, not to exceed 60 months | | Operator’s Workshop, MEA-441, 511 |
| 7.19 | | Installing meter sets | | Written or hands-on evaluation | | Written or hands-on evaluation | | 60 months, not to exceed 60 months | | Operator’s Workshop, MEA-211, 322, 452 |
| 7.20 | | Tapping and stopping steel pipe 1” through 4” | | Written or hands-on evaluation | | Written or 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” | | Written or hands-on evaluation | | Written or hands-on evaluation | | 36 months, not to exceed 39 months | | Operator’s Workshop, Manufacturer’s Procedures |
| 7.22 | | Tapping and stopping polyethylene pipe | | Written or hands-on evaluation | | Written or hands-on evaluation | | 60 months, not to exceed 60 months | | Operator’s Workshop, MEA-451, 452 |
| 7.23  N/A | | Vault abandonment  N/A | | N/A | | N/A | | N/A | | N/A |
| **Sec. 8** | | **Fundamentals of Construction – Heavy Equipment Operation** | |  | |  | |  | |  |
| 8.1 | | Operating backhoe | | Written or hands-on evaluation | | Written or hands-on evaluation | | 36 months, not to exceed 39 months | | Operator’s Workshop,  MEA-403 |
| 8.2 | | Operating trencher | | Written or hands-on evaluation | | Written or hands-on evaluation | | 36 months, not to exceed 39 months | | Operator’s Workshop, Manufacturer’s Procedures, MEA-403 |
| 8.3  N/A | | Operating boring equipment | | N/A | | N/A | | N/A | | N/A |
| 8.4 | | Ditch and backfill inspection | | Written or hands-on evaluation | | Written or hands-on evaluation | | 36 months, not to exceed 39 months | | Operator’s Workshop,  MEA-404 |
| **Sec. 9** | | **Fundamentals of Measurement and Control** | |  | |  | |  | |  |
| 9.1 | | Metering | | Written or hands-on evaluation | | Written or hands-on evaluation | | 60 months, not to exceed 60 months | | Metering Workshop |
| 9.2 | | Odorization | | Written or hands-on evaluation | | Written or hands-on evaluation | | 60 months, not to exceed 60 months | | Operator’s Workshop MEA-251 |
| **Sec. 10** | | **Corrosion Control** | |  | |  | |  | |  |
| 10.1 | | Cathodic protection | | Written or hands-on evaluation | | Written or hands-on evaluation | | 36 months, not to exceed 39 months | | Corrosion control workshop, MEA-431 |
| 10.2 | | Internal corrosion | | Written or hands-on evaluation | | Written or hands-on evaluation | | 36 months, not to exceed 39 months | | Corrosion control workshop, MEA-431 |
| 10.3 | | External corrosion | | Written or hands-on evaluation | | Written or hands-on evaluation | | 36 months, not to exceed 39 months | | Corrosion control workshop, MEA-431 |
| 10.4 | | Atmospheric corrosion | | Written or hands-on evaluation | | Written or hands-on evaluation | | 36 months, not to exceed 39 months | | Corrosion control workshop, MEA-202 |
| 10.5 | | Coatings | | Written or hands-on evaluation | | Written or hands-on evaluation | | 36 months, not to exceed 39 months | | Corrosion control workshop, MEA-431 |
| 10.6 | | Holiday detection (coating inspection) | | Written or hands-on evaluation | | Written or hands-on evaluation | | 36 months, not to exceed 39 months | | Corrosion control workshop, MEA-431 |
| 10.7 | | Painting an jacketing above ground facilities | | Written or hands-on evaluation | | Written or 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 or hands-on evaluation | | Written or hands-on evaluation | | 36 months, not to exceed 39 months | | Corrosion control workshop, MEA-431 |
| 10.9  N/A | | Installation of impressed current system | | N/A | | N/A | | N/A | | N/A |
| 10.10 | Inspection, monitoring Cathodic protection system | | Written or hands-on evaluation | | Written or hands-on evaluation | | 36 months, not to exceed 39 months | | Corrosion control Workshop, MEA-431 | |
| **Sec. 11** | **Odorization** | |  | |  | |  | |  | |
| 11.3 | Tasting odorant level | | Written or hands-on evaluation | | Written or hands-on evaluation | | 60 months, not to exceed 60 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 or hands-on evaluation | | Written or hands-on evaluation | | 60 months, not to exceed 60 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 evaluation | | 60 months, not to exceed 60 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 evaluation | | 60 months, not to exceed 60 months | | Operator’s Workshop, O&M Manual, MEA-511 | |
| 12.4 | System uprating | | Written or hands-on evaluation | | Written or hands-on evaluation | | 60 months, not to exceed 60 months | | Operator’s Workshop, O&M Manual, MEA-521 | |

¹ Reference to operator training refers to workshops conducted by state associations, such as the Texas Gas Association, manufacturers and distributors of gas industry products and equipment, Railroad Commission of Texas, and other organizations. Specific references to MEA materials are to training modules in the Midwest Energy Association’s Operator Qualification Training series.

See Appendix 2 for MEA’s new training material cross-reference guide.

SECTION 4A Individual Qualification Summary for \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Section 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 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-Qualification Method | Re-Qualification Period | Original Date Qualified | Date Re-Qualified |
| **Sec. 1** | **Fundamentals of Natural Gas** |  |  |  |  |  |
| 1.1 | Characteristics and hazards of natural gas | Written or hands-on evaluation | Written or hands-on evaluation | 60 months, not to exceed 60 months |  |  |
| 1.2 | Potential ignition sources: indoor and outdoor | Written or hands-on evaluation | Written or hands-on evaluation | 60 months, not to exceed 60 months |  |  |
| 1.3 | Recognizing emergency conditions | Written or hands-on evaluation | Written or hands-on evaluation | 60 months, not to exceed 60 months |  |  |
| 1.4 | Recognizing and reporting natural gas leaks | Written or hands-on evaluation | Written or hands-on evaluation | 60 months, not to exceed 60 months |  |  |
| **Sec 2** | **Record Keeping** |  |  |  |  |  |
| 2.1 | Documenting materials and installation records | Written or hands-on evaluation | Written or hands-on evaluation | 60 months, not to exceed 60 months |  |  |
| 2.2 | Documenting maximum allowable operating pressure (MAOP) | Written or hands-on evaluation | Written or hands-on evaluation | 60 months, not to exceed 60 months |  |  |
| 2.3 | System up-rating | Written or hands-on evaluation | Written or hands-on evaluation | 60 months, not to exceed 60 months |  |  |
| 2.4 | Investigating and documenting line failure | Written or hands-on evaluation | Written or hands-on evaluation | 36 months, not to exceed 39 months |  |  |
| 2.5 | Accident reporting | Written or hands-on evaluation | Written or hands-on evaluation | 60 months, not to exceed 60 months |  |  |
| **Sec. 3** | **Marking and Mapping Facilities** |  |  |  |  |  |
| 3.1 | Locating facilities using the conductive method | Written or hands-on evaluation | Written or hands-on evaluation | 60 months, not to exceed 60 months | N/A | N/A |
| 3.2 | Locating facilities using the inductive method | Written or hands-on evaluation | Written or hands-on evaluation | 60 months, not to exceed 60 months | N/A | N/A |
| 3.3 | Locating facilities using the inductive method (two persons) | Written or hands-on evaluation | Written or hands-on evaluation | 60 months, not to exceed 60 months | N/A | N/A |
| 3.4 | Determining depth through triangulation | Written or hands-on evaluation | Written or hands-on evaluation | 60 months, not to exceed 60 months |  |  |
| 3.5 | System mapping | Written or hands-on evaluation | Written or hands-on evaluation | 60 months, not to exceed 60 months |  |  |
| **Sec. 4** | **Fundamentals of Field Safety in Construction, Operation, and Maintenance** |  |  |  |  |  |
| 4.1 | Personal protective equipment | Written or hands-on evaluation | Written or hands-on evaluation | 36 months, not to exceed 39 months |  |  |
| 4.2 | Power tool safety | Written or hands-on evaluation | Written or hands-on evaluation | 36 months, not to exceed 39 months | N/A | N/A |
| 4.3 | Proper firefighting techniques | Written or hands-on evaluation | Written or hands-on evaluation | 36 months, not to exceed 39 months | N/A | N/A |
| 4.4 | Controlling the accidental release of gas | Written or hands-on evaluation | Written or hands-on evaluation | 36 months, not to exceed 39 months |  |  |
| 4.5 | Soil subsidence | Written or hands-on evaluation | Written or hands-on evaluation | 36 months, not to exceed 39 months |  |  |
| 4.6 | Atmospheric corrosion | Written or hands-on evaluation | Written or hands-on evaluation | 36 months, not to exceed 39 months |  |  |
| 4.7 | Recognizing unsafe meter sets | Written or hands-on evaluation | Written or hands-on evaluation | 36 months, not to exceed 39 months |  |  |
| 4.9 | Job Site protection | Written or hands-on evaluation | Written or hands-on evaluation | 36 months, not to exceed 39 months |  |  |
| 4.10 | Purging safety | Written or hands-on evaluation | Written or hands-on evaluation | 36 months, not to exceed 39 months |  |  |
| 4.11 | Pressure testing steel and plastic pipeline | Written or hands-on evaluation | Written or hands-on evaluation | 36 months, not to exceed 39 months |  |  |
| 4.12 | Abandoning facilities | Written or hands-on evaluation | Written or hands-on evaluation | 36 months, not to exceed 39 months |  |  |
| 4.13 | Excavation safety | Written or hands-on evaluation | Written or hands-on evaluation | Initial, then 12 months, not to exceed 15 months | N/A | N/A |
| **Sec. 5** | **Fundamentals of Gas Leaks-Survey and Response** |  |  |  |  |  |
| 5.1 | Leak classification | Written or hands-on evaluation | Written or hands-on evaluation | 60 months, not to exceed 60 months |  |  |
| 5.2 | Procedures for leak surveys and patrols | Written or hands-on evaluation | Written or hands-on evaluation | 60 months, not to exceed 60 months |  |  |
| 5.3 | Combustible gas indicators | Written or hands-on evaluation | Written or hands-on evaluation | 60 months, not to exceed 60 months (or new equip.) |  |  |
| 5.4 | Electronic gas detectors | Written or hands-on evaluation | Written or hands-on evaluation | 60 months, not to exceed 60 months (or new equip.) |  |  |
| 5.6 | Bar-hole testing and purging | Written or hands-on evaluation | Written or hands-on evaluation | 60 months, not to exceed 60 months |  |  |
| **Sec. 6** | **Fundamentals of Customer Service** |  |  |  |  |  |
| 6.1 | Carbon monoxide (CO) testing | Written or hands-on evaluation | Written or hands-on evaluation | 60 months, not to exceed 60 months |  |  |
| 6.2 | Investigating leaks | Written or hands-on evaluation | Written or hands-on evaluation | 60 months, not to exceed 60 months |  |  |
| 6.3 | Combustion and ventilation air requirements | Written or hands-on evaluation | Written or hands-on evaluation | 60 months, not to exceed 60 months |  |  |
| 6.4 | Pilot light operation | Written or hands-on evaluation | Written or hands-on evaluation | 60 months, not to exceed 60 months |  |  |
| 6.5 | Gas-air adjustment | Written or hands-on evaluation | Written or hands-on evaluation | 60 months, not to exceed 60 months |  |  |
| 6.6 | Appliance venting | Written or hands-on evaluation | Written or hands-on evaluation | 60 months, not to exceed 60 months |  |  |
| 6.7 | Pressure checks to establish gas service | Written or hands-on evaluation | Written or hands-on evaluation | 60 months, not to exceed 60 months |  |  |
| 6.8 | Establishing and disconnecting gas | Written or hands-on evaluation | Written or hands-on evaluation | 60 months, not to exceed 60 months |  |  |
| **Sec. 7** | **Fundamentals of Construction** |  |  |  |  |  |
| 7.1 | Pressure testing steel and plastic pipeline | Written or hands-on evaluation | Written or hands-on evaluation | 36 months, not to exceed 39 months |  |  |
| 7.2 | Procedures for abandoning facilities | Written or hands-on evaluation | Written or hands-on evaluation | 36 months, not to exceed 39 months |  |  |
| 7.3 | Cathodic protection (general) | Written or hands-on evaluation | Written or hands-on evaluation | 36 months, not to exceed 39 months |  |  |
| 7.4 | Constructing facilities across streets, railroads, and waterways | Written or hands-on evaluation | Written or hands-on evaluation | 36 months, not to exceed 39 months |  |  |
| 7.5 | Operating thermite welder | Written or hands-on evaluation | Written or hands-on evaluation | 36 months, not to exceed 39 months |  |  |
| 7.6 | Installing tracer wire | Written or hands-on evaluation | Written or hands-on evaluation | 36 months, not to exceed 39 months |  |  |
| 7.7 | Installing valves | Written or hands-on evaluation | Written or hands-on evaluation | 36 months, not to exceed 39 months |  |  |
| 7.8 | Steel and cast iron repair fittings | Written or hands-on evaluation | Written or hands-on evaluation | 60 months, not to exceed 60 months |  |  |
| 7.9 | Maintaining steel and cast iron mains | Written or hands-on evaluation | Written or hands-on evaluation | 60 months, not to exceed 60 months |  |  |
| 7.10 | Reinforcing steel and plastic mains | Written or hands-on evaluation | Written or hands-on evaluation | 60 months, not to exceed 60 months |  |  |
| 7.11 | Plastic pipe joining (fusion) | Written or hands-on evaluation | Written or hands-on evaluation | 12 months not to exceed 15 months |  |  |
| 7.12 | Plastic pipe joining (mechanical couplings) | Written or hands-on evaluation | Written or hands-on evaluation | 36 months, not to exceed 39 months |  |  |
| 7.13 | Recognition of defective material | Written or hands-on evaluation | Written or hands-on evaluation | 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 or hands-on evaluation | Written or hands-on evaluation | 36 months, not to exceed 39 months |  |  |
| 7.16 | Damage prevention | Written or hands-on evaluation | Written or hands-on evaluation | 36 months, not to exceed 39 months |  |  |
| 7.17 | Application of padding and shielding | Written or hands-on evaluation | Written or hands-on evaluation | 36 months, not to exceed 39 months |  |  |
| 7.18 | Replacing emergency valves | Written or hands-on evaluation | Written or hands-on evaluation | 60 months, not to exceed 60 months |  |  |
| 7.19 | Installing meter sets | Written or hands-on evaluation | Written or hands-on evaluation | 60 months, not to exceed 60 months |  |  |
| 7.20 | Tapping and stopping steel | Written or hands-on evaluation | Written or hands-on evaluation | 36 months, not to exceed 39 months |  |  |
| 7.21 | Tapping and stopping steel pipe 1” and 4” | Written or hands-on evaluation | Written or hands-on evaluation | 36 months, not to exceed 39 months |  |  |
| 7.22 | Tapping and stopping pipe 6” and 8” | Written or hands-on evaluation | Written or hands-on evaluation | 60 months, not to exceed 60 months |  |  |
| 7.23 | Vault abandonment | Written or hands-on evaluation | Written or hands-on evaluation | 36 months, not to exceed 39 months | N/A | N/A |
| **Sec. 8** | **Fundamentals of Construction –Heavy Equipment Operation** |  |  |  |  |  |
| 8.1 | Operating backhoe | Written or hands-on evaluation | Written or hands-on evaluation | 36 months, not to exceed 39 months |  |  |
| 8.2 | Operating trencher | Written or hands-on evaluation | Written or hands-on evaluation | 36 months, not to exceed 39 months |  |  |
| 8.3 | Operating boring equipment | Written or hands-on evaluation | Written or hands-on evaluation | 36 months, not to exceed 39 months | N/A | N/A |
| 8.4 | Ditch and backfill inspection | Written or hands-on evaluation | Written or hands-on evaluation | 36 months, not to exceed 39 months |  |  |
| **Sec. 9** | **Fundamentals of Measurement and Control** |  |  |  |  |  |
| 9.1 | Metering | Written or hands-on evaluation | Written or hands-on evaluation | 60 months, not to exceed 60 months |  |  |
| 9.2 | Odorization measurement and control | Written or hands-on evaluation | Written or hands-on evaluation | 60 months, not to exceed 60 months |  |  |
| **Sec. 10** | **Corrosion Control** |  |  |  |  |  |
| 10.1 | Cathodic protection | Written or hands-on evaluation | Written or hands-on evaluation | 36 months, not to exceed 39 months |  |  |
| 10.2 | Internal corrosion | Written or hands-on evaluation | Written or hands-on evaluation | 36 months, not to exceed 39 months |  |  |
| 10.3 | External corrosion | Written or hands-on evaluation | Written or hands-on evaluation | 36 months, not to exceed 39 months |  |  |
| 10.4 | Atmospheric corrosion | Written or hands-on evaluation | Written or hands-on evaluation | 36 months, not to exceed 39 months |  |  |
| 10.5 | Coatings | Written or hands-on evaluation | Written or hands-on evaluation | 36 months, not to exceed 39 months |  |  |
| 10.6 | Holiday detection (coating inspection) | Written or hands-on evaluation | Written or hands-on evaluation | 36 months, not to exceed 39 months |  |  |
| 10.7 | Painting an jacketing above ground facilities | Written or hands-on evaluation | Written or hands-on evaluation | 36 months, not to exceed 39 months |  |  |
| 10.8 | Installation of Cathodic protection (sacrificial anode system) | Written or hands-on evaluation | Written or hands-on evaluation | 36 months, not to exceed 39 months |  |  |
| 10.9 | Installation of impressed current system | Written or hands-on evaluation | Written or hands-on evaluation | 36 months, not to exceed 39 months | N/A | N/A |
| 10.10 | Inspection, monitoring Cathodic protection system | Written or hands-on evaluation | Written or hands-on evaluation | 36 months, not to exceed 39 months |  |  |
| **Sec. 11** | **Odorization** |  |  |  |  |  |
| 11.3 | Testing odorant level | Written or hands-on evaluation | Written or hands-on evaluation | 60 months, not to exceed 60 months |  |  |
| **Sec. 12** | **Other Operating and Maintenance Skills** |  |  |  |  |  |
| 12.1 | Operating valves (including emergency valves), regulators, and relief valves | Written or hands-on evaluation | Written or hands-on evaluation | 60 months, not to exceed 60 months |  |  |
| 12.2 | Inspecting pressure regulating and limiting stations | Written or hands-on evaluation | Written or hands-on evaluation | 60 months, not to exceed 60 months |  |  |
| 12.3 | Inspecting and maintaining key valves | Written or hands-on evaluation | Written or hands-on evaluation | 60 months, not to exceed 60 months |  |  |
| 12.4 | System uprating | Written or hands-on evaluation | Written or hands-on evaluation | 60 months, not to exceed 60 months |  |  |
| **Sec. \_\_\_\_** | **Other** |  |  |  |  |  |
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**SECTION 4B Operator Qualification Group Summary**

Section 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 form 4b is not used, other appropriate record keeping 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

CITY OF ALPINE GAS DEPT

Where the employer copy of individual qualification summaries and related written and hands-on performance evaluation 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 |  |  |  |  |  |  |  |  |

**SECTION 4B Operator Qualification Group Summary**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Sec. 3** | **Marking and Mapping Facilities** | |  |  |  |  |  |  |  |  |
| 3.1 | Locating facilities using the conductive method | |  |  |  |  |  |  |  |  |
| 3.2 | Locating facilities using the inductive method | | N/A |  |  |  |  |  |  |  |
| 3.3 | Locating facilities using the inductive method (two persons) | | N/A |  |  |  |  |  |  |  |
| 3.4 | Determining depth through triangulation | | N/A |  |  |  |  |  |  |  |
| 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 | | N/A |  |  |  |  |  |  |  |
| 4.3 | Proper firefighting techniques | | N/A |  |  |  |  |  |  |  |
| 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, 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 |  |  |  |  |  |  |  |  |
| 5.6 | | Bar-hole testing and purging |  |  |  |  |  |  |  |  |

**SECTION 4B Operator Qualification Group Summary**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **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 |  |  |  |  |  |  |  |  |
| 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) |  |  |  |  |  |  |  |  |
| 7.4 | Constructing facilities across streets, railroads, and waterways |  |  |  |  |  |  |  |  |
| 7.5 | Operating thermite welder |  |  |  |  |  |  |  |  |
| 7.6 | Installing tracer wire |  |  |  |  |  |  |  |  |
| 7.7 | Installing valves |  |  |  |  |  |  |  |  |
| 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 (fusion) |  |  |  |  |  |  |  |  |
| 7.12 | Plastic pipe joining (mechanical couplings) |  |  |  |  |  |  |  |  |
| 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 |  |  |  |  |  |  |  |  |
| 7.21 | Tapping and stopping steel pipe 1” and 4” |  |  |  |  |  |  |  |  |
| 7.22 | Tapping and stopping pipe 6” and 8” |  |  |  |  |  |  |  |  |

**SECTION 4B Operator Qualification Group Summary**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Sec. 8** | **Fundamentals of Construction –Heavy Equipment Operation** |  |  |  |  |  |  |  |  |
| 8.1 | Operating backhoe |  |  |  |  |  |  |  |  |
| 8.2 | Operating trencher |  |  |  |  |  |  |  |  |
| 8.3 | Operating boring equipment | N/A |  |  |  |  |  |  |  |
| 8.4 | Ditch and backfill inspection |  |  |  |  |  |  |  |  |
| **Sec. 9** | **Fundamentals of Measurement and Control** |  |  |  |  |  |  |  |  |
| 9.1 | Metering |  |  |  |  |  |  |  |  |
| 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 (coating inspection) |  |  |  |  |  |  |  |  |
| 10.7 | Painting an jacketing above ground facilities |  |  |  |  |  |  |  |  |
| 10.8 | Installation of Cathodic protection (sacrificial anode system) |  |  |  |  |  |  |  |  |
| 10.9 | Installation of impressed current system | N/A |  |  |  |  |  |  |  |
| 10.10 | Inspection, monitoring Cathodic protection system |  |  |  |  |  |  |  |  |
| **Sec. 11** | **Odorization** |  |  |  |  |  |  |  |  |
| 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 |  |  |  |  |  |  |  |  |

**SECTION 4B Operator Qualification Group Summary**

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Sec. \_\_\_** | **Other** |  |  |  |  |  |  |  |  |
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SECTION 5 Evaluation of Hands-on Skills

EVALUATION OF HANDS-ON SKILLS

Section 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 Section 5 or attend appropriate workshops in obtaining qualification or re-evaluation. Appropriate documentation forms, attendance records, or manufacturer’s procedures maybe used in lieu of the forms supplied in Section 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 Section 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)

SECTION 5 Evaluation of Hands-on Skills

**NOTICE OF CHANGE**

This page may be reproduced as needed for recording changes to the Operator Qualification Program.

City of Alpine Gas Dept \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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 Section 7.

SECTION 5 Evaluation of Hands-on Skills

**FEEDBACK FORM**

City of Alpine Gas Dept \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Address: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Phone: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Change or Addition Requested:**

**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Person Requesting Change:**

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**When form completed file copy and original in Company Files.**

**City of Alpine Gas Dept Corp. Response:**

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**City of Alpine Gas Dept Representative**

**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

SECTION 5 Evaluation of Hands-on Skills

**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**

SECTION 5 Evaluation of Hands-on Skills

**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. Bothe 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 | | Review ticket’s date & time |  |  |
| 2 | | Find address on locate ticket |  |  |
| 3 | | Find meter valve box or test station |  |  |
| 4 | | Plug cable into transmitter/black lead to rod and red lead to line or tracing wire |  |  |
| Connect the Transmitter | | |  |  |
| 5 | | 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. |  |  |
| 6 | | Insert the ground rod/plate to one side and away from the pipe, as far from the transmitter as the other connection cable will allow. |  |  |
| 7 | | Pour a small amount of water at the ground site to increase conductivity, if needed. |  |  |
| Locate the Pipe | | |
| 8 | Set the receiver sensitivity control to the low range. | |  |  |
| 9 | Hold the receiver parallel with the pipe and in a vertical position. | |  |  |
| 10 | Sweep the receiver close to the ground using short, smooth moves without swinging or rocking. | |  |  |
| 11 | Find and mark the general location of the pipe by listening for the loudest signal. | |  |  |
| 12 | Hold the receiver face-up in a horizontal position | |  |  |
| 13 | Adjust the sensitivity control to **medium** or **high** | |  |  |
| 14 | Sweep the receiver back and forth over the general location, perpendicular to the pipe | |  |  |
| 15 | Find the null and mark its location according to Company policy | |  |  |
| 16 | | Paint located lines as required on locate ticket |  |  |
| 17 | | Take pictures of lines that are located and landmarks. Call contact person and make a positive response. Inform Excavator of Sec. 192.614 (c)(6)(i). |  |  |
| **Comments:** | | | | |

**Participant Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ I.D. Number \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Test Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Location: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Evaluation: ( ) Qualified ( ) Not Qualified**

**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

Qualified Observer Signature Participant Signature

SECTION 5 Evaluation of Hands-on Skills

**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. Bothe 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 | Place the transmitter over the pipe at a 45° 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 |  |  |
| Comments: (see reverse) | | | |

**Participant Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ I.D. Number \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Test Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Location:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Evaluation: ( ) Qualified ( ) Not Qualified**

**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

Qualified Observer Signature Participant Signature

SECTION 5 Evaluation of Hands-on Skills

**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. Bothe 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 for the 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

SECTION 5 Evaluation of Hands-on Skills

**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° 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 form this mark to the mark for the pinpointed center of the pipe |  |  |
| 6 | Subtract the distance form 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**

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Qualified Observer Signature Participant Signature

SECTION 5 Evaluation of Hands-on Skills

**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**

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Qualified Observer Signature Participant Signature

SECTION 5 Evaluation of Hands-on Skills

**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**

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Qualified Observer Signature Participant Signature

SECTION 5 Evaluation of Hands-on Skills

**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 in section 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 | | |  |  |
| Comments: (see reverse) | | | | | |

Participant Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ I.D. Number \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Test Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Location: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Evaluation: ( ) Qualified ( ) Not Qualified**

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Qualified Observer Signature Participant Signature

SECTION 5 Evaluation of Hands-on Skills

**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 | Establish extent of leak |  |  |
| 3 | `Establish strongest reading |  |  |
| 4 | Allow to vent/Re-test |  |  |
| 5 | Locate approximate location of leak |  |  |
| 6 | Document prior to digging |  |  |
| 7 | Classify leak |  |  |
| **Comments:** | | | |

Participant Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ I.D. Number \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Test Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Location: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Evaluation: ( ) Qualified ( ) Not Qualified**

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Qualified Observer Signature Participant Signature

SECTION 5 Evaluation of Hands-on Skills

**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**

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Qualified Observer Signature Participant Signature

SECTION 5 Evaluation of Hands-on Skills

**Competency/Skills: 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**

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Qualified Observer Signature Participant Signature

SECTION 5 Evaluation of Hands-on Skills

**Competency/Skill: 7.11 Plastic Pipe Joining (fusion) 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** |
|  | |  |  |
| 1 | Butt fusion/visual-As per O&M Qualification Procedures |  |  |
| 2 | Side wall fusion/visual-As per O&M Qualification Procedures |  |  |
| 3 | Butt fusion/strap test-As per Pipe Manufacturer Procedures in O & M Appendix |  |  |
| 4 | Sidewall fusion/strap test- As per Pipe Manufacturer Procedures in O & M Appendix |  |  |
| 5 |  |  |  |
| 6 |  |  |  |
| 7 |  |  |  |
| 8 |  |  |  |
| 9 |  | |  |
| Comments: | | | |

Participant Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ I.D. Number \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Test Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Location: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Evaluation: ( ) Qualified ( ) Not Qualified**

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Qualified Observer Signature Participant Signature

SECTION 5 Evaluation of Hands-on Skills

**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 |  |  |
| 7 |  |  |  |
| 8 |  |  |  |
| 9 |  |  |  |
| Comments: | | | |

Participant Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ I.D. Number \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Test Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Location: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Evaluation: ( ) Qualified ( ) Not Qualified**

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Qualified Observer Signature Participant Signature

SECTION 5 Evaluation of Hands-on Skills

**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 ¼” gap |  |  |
| Install coupling | |  |  |
| 4 | Measure the coupling body to manufacturer’s 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 |  |  |
| Comments: (see reverse) | | | |

Participant Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ I.D. Number \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Test Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Location: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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Qualified Observer Signature Participant Signature

SECTION 5 Evaluation of Hands-on Skills

**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**

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Qualified Observer Signature Participant Signature

SECTION 5 Evaluation of Hands-on Skills

**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**

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Qualified Observer Signature Participant Signature

SECTION 5 Evaluation of Hands-on Skills

**Competency/Skill: 7.22 Tapping and Stopping 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** |
|  | |  |  |
| 1 | Sidewall fusion |  |  |
| 2 | Remove cap |  |  |
| 3 | Turn Allen lead clockwise till bottoms out |  |  |
| 4 | Turn counter-clockwise till 1 thread end from the top |  |  |
| 5` | Replace cap on top of tee |  |  |
| 6 | Test to manufacturers procedure |  |  |
| 7 |  |  |  |
| 8 |  |  |  |
| 9 |  |  |  |
| Comments: | | | |

Participant Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ I.D. Number \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Test Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Location: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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Qualified Observer Signature Participant Signature

SECTION 5 Evaluation of Hands-on Skills

**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**

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Qualified Observer Signature Participant Signature

SECTION 5 Evaluation of Hands-on Skills

**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 levers |  |  |
| 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: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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Qualified Observer Signature Participant Signature

SECTION 5 Evaluation of Hands-on Skills

**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 levers |  |  |
| 3 | Start up procedures |  |  |
| 4 | Engage boring rod |  |  |
| 5 | Proper angle 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: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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Qualified Observer Signature Participant Signature

SECTION 5 Evaluation of Hands-on Skills

**Competency/Skill: 8.4 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 |  |  |
| 9 |  |  |  |
| Comments: | | | |

Participant Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ I.D. Number \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Test Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Location: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Evaluation: ( ) Qualified ( ) Not Qualified**

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Qualified Observer Signature Participant Signature

SECTION 5 Evaluation of Hands-on Skills

**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 | Before painting meter and fittings you must do a soap test and check for leaks |  |  |
| 2 | Check meter for any upgrades necessary |  |  |
| 3 | Remove all loose paint and particles |  |  |
| 4 | Paint all exposed metal |  |  |
| 5 | Write address on atmospheric corrosion sheet |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
| Comments: | | | |

Participant Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ I.D. Number \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Test Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Location: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Evaluation: ( ) Qualified ( ) Not Qualified**

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Qualified Observer Signature Participant Signature

SECTION 5 Evaluation of Hands-on Skills

**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**

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Qualified Observer Signature Participant Signature

SECTION 5 Evaluation of Hands-on Skills

**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 of 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**

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Qualified Observer Signature Participant Signature

SECTION 5 Evaluation of Hands-on Skills

**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: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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Qualified Observer Signature Participant Signature

SECTION 5 Evaluation of Hands-on Skills

**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 |  |  |  |
| Comments: | | | |

Participant Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ I.D. Number \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Test Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Location: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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Qualified Observer Signature Participant Signature

SECTION 5 Evaluation of Hands-on Skills

**WRITTEN EVALUATION OF COMPETENCIES AND SKILLS**

Section 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 id certified by an outside training organization.

SECTION 6 Written Evaluations of Competencies and Skills

**TRAINING MATERIALS**

Section 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. Fro example, a brochure describing a welder qualification workshop could be retained in this Section to document the operator’s efforts to provide training in required competencies and skills.

When communication of change, when using the “Notice of Change” form is completed, file in Section 7.

(Protocol 1.04, 8.01, §§ 192.803/195.503, 192.805/195.505)

SECTION 7 Training Materials

**COURSE DESCRIPTIONS AND PREREQUISITES**

The following appendix describes the training modules.

(Protocol 40.2, § 192.803/195.503)

**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.

**Module Number:** 104 **Title:** Recognizing and Reporting Natural Gas Leaks

**Prerequisite:** 101, 102, 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.

**Module Number:** 111 T**itle**: Personal Protective Equipment

**Prerequisites:** 101, 102, 103, 104

**Description:** Use 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; fire fighting 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, 013, 104, 201, 212

**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.

**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.

Topic include: CGI unit parts and function; pre-operation tests of the CGI unit; operation of the CGI unit in the field; documentation.

**Module Number:** 241 **Title:** Carbon Monoxide (CO) Testing

**Prerequisite:** 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

**Prerequisite:** 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

**Prerequisite:** 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.

**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.

**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.

**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

**Prerequisite:** 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.

**Module Number:** 322 **Title:** Establishing and Disconnecting Gas

**Prerequisite:** 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; read over or succession; meter removal; documentation.

**Module Number:** 324 **Title:** Lighting Appliances

**Prerequisite:** 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

**Prerequisite:** 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.

**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

**Prerequisite:** 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.

**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.

**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.

**Module Number:** 421 **Title:** Pressure Testing Steel and Plastic Pipeline

**Prerequisite:** 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:** 431 **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.

**Module Number:** 441 **Title:** Tapping/Stopping: 1.24” – 4” Pipe

**Prerequisite:** 101, 102, 103, 104, 404

**Description:** Operation of general and specialized tipping 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.

**Module Number:** 444 **Title:** Plastic Pipe Repair

**Prerequisite:** 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

**Prerequisite:** 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.

**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, plastic service to steel mains.

**Module Number:** 462 **Title:** Maintaining Steel & Cast Iron Mains

**Prerequisite:** 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.

**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.

**Module Number:** 511 **Title:** Inspecting and Maintaining Valves

**Prerequisite:** 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.

**Module Number:** 512 **Title:** Inspecting Pressure Regulating & Limiting Stations

**Prerequisite:** 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 OPD’s; vault inspection requirements and procedures; documentation.

**Module Number:** 521 **Title:** System Uprating

**Prerequisite:** 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.