FOREWORD

An industry-government small operator task force reviewed several model plans and concluded that the attached model plan provides an excellent model that small operators can use as a model for their OQ compliance programs. This model written operator qualification plan is provided as an example for small operators of natural gas, LP, master meter, and hazardous liquid pipelines and of what the end result of the processes described in the "How to" guide might look like.

The Iowa Association of Municipal Utilities (IAMU) developed this plan following processes similar to those described in the "How to" guide and has graciously made it available for your use. Some noteworthy features of the plan are:

- Each of the 8 minimum requirements of regulation is addressed,
- A covered task list of most covered tasks performed on a typical natural gas distribution system is included,
- Examples of competencies and skills (equivalent to the knowledge, skills abilities and abnormal operating conditions in the "How to" guide) required for each covered task are included,
- Examples of evaluation method (written test or observation checklist) for each competency and skill are included,
- Examples of abnormal operating conditions for each task are addressed in the evaluations, and
- Training courses that may be used to provide the necessary competencies and skills to individuals that need training to become qualified are listed.

Note that this plan was developed for IAMU's members who are operators of natural gas distribution systems. Operators will need to modify it to fit their systems, which means removing those tasks and evaluations that are not applicable to their systems and adding covered tasks, competencies and evaluations for other covered tasks performed on master meter, LP, hazardous liquid and gas transmission pipelines that may not be included in this plan. Information on covered tasks, competencies and/or evaluations for master meter, LP, hazardous liquid and gas transmission pipelines may be available from trade associations or vendors.

Operators are not required to use this plan, however they may use as much or as little of it as desired. If operators choose to use all or part of this plan, they must ensure that it fits its unique system and procedures. Operators other than IAMU members using this plan will be responsible for all changes and updates required of this plan. **Intrastate operators should also check with their state pipeline safety regulators regarding additional requirements specific to the state in which they operate.**

- Operators should review the covered task list, deleting tasks that are not performed on their system and adding any activity that is performed on their system that is not currently listed. For example, operators of an all-plastic system will not perform cathodic protection tasks. Operators of gas transmission or hazardous liquid pipelines can contact trade associations or vendors for information on covered tasks.
- Operators should review the competencies and skills for each covered task that is performed on their system to ensure the competencies and skills and the evaluations for each addresses what an individual must know to perform each covered task according to their operating and maintenance procedures. Feel free to substitute other training and evaluations for any or all of those listed in the IAMU plan if you feel that other training and evaluations better suit your needs. For tasks identified that are not in the IAMU plan operators will have to assess the competencies and skills and develop or acquire appropriate evaluations.

- Operators should ensure that the recommended re-evaluation frequencies are appropriate for their system based on the factors described in the “How to” guide. January 2004

_____

Utility/Company

_____

Plan Administrator (Protocol 3.01 §192.805/195.505)

NATURAL GAS OPERATOR QUALIFICATION PROGRAM

Adopted _____

Date

NATURAL GAS OPERATOR QUALIFICATION PROGRAM

A Model Program from the

IOWA
ASSOCIATION OF MUNICIPAL
UTILITIES

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

Disclaimer of Warranty and Limitation of Liability

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

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

PREFACE

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

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

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

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

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

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

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

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

If you wish to use Midwest Energy Association (MEA) training materials they may be obtained by contacting IAMU or directly to MEA at 952/832-9915, and using the code "SMOQ."

Questions about the IAMU program and training materials used in this program should be directed to the IAMU offices by contacting David Hraha at 515/289-1999.

NATURAL GAS OPERATOR QUALIFICATION PROGRAM
TABLE OF CONTENTS

DIVISION THREE – REQUIRED COMPETENCIES AND SKILLS

DIVISION FOUR – RECORD KEEPING

DIVISION FIVE – HANDS-ON PERFORMANCE QUALIFICATION (Forms)

INTRODUCTION

The gas operator qualification program is governed by the regulations of the U.S. DOT. Those regulations are found in 49-CFR-191 and 192.

Format of this Program

This program is separated into eight divisions:

Division 1. PURPOSE AND SCOPE

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

Division 2. COVERED TASKS

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

Division 3. REQUIRED COMPETENCIES AND SKILLS

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

Division 4. RECORD KEEPING

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

Division 5. HANDS-ON PERFORMANCE QUALIFICATION (Forms)

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

Division 6. WRITTEN EVALUATION OF COMPETENCIES AND SKILLS

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

Division 7. TRAINING MATERIALS

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

Division 8. COURSE DESCRIPTIONS

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

PROTOCOLS/RULE REQUIRMENTS

Protocol questions, found in Appendix 1, are utilized to inspect OQ programs. The tables below reference divisions of the IAMU plan where the protocols are addressed.

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

Acknowledgements

The basic content of the operator qualification program was developed by the Iowa Association of Municipal Utilities, Minnesota Municipal Utilities Association several operators and pipeline safety staff located in Iowa and Minnesota.
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Charlie Schmitz New Ulm Public Utilities
Dan Morgan Owatonna Public Utilities
Bert Magstadt Watertown Municipal Utilities
SSOQ2 Government-Industry Taskforce

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

NATURAL GAS OPERATOR QUALIFICATION PROGRAM

1.1 PURPOSE. This program is intended to meet the requirements, effective April 27, 2001, of the Office of Pipeline Safety, U.S. Department of Transportation, for natural gas operators (Reprinted 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 October28, 2002 shall be qualified in accordance with this program. Work performance history review is not anticipated to be used as a qualification criteria, except it may be used for outside contractors performing certain covered tasks, that require separate documentation, as required by the O&M manual, for example; Leak surveys, cathodic protection, regulator inspection.

Work performance history may not be used as the sole evaluation after October 28, 2002. (Protocol 4.01 §192.809/195.509)

QUALIFICATION OF PIPELINE PERSONNEL
49CFR PART 192 Subpart N

192.801 SCOPE.

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

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

192.803 DEFINITONS.

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

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

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

(a) Written examination
(b) Oral examination
(c) Work performance history review
(d) Observation during
(e) Performance on the job
(f) On the job training
(g) Simulations
(h) Other forms of assessment.

Qualified means that an individual has been evaluated and can:

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

Amdt 192-90, Aug 20, 2001

192.805 QUALIFICATION.

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

192.807 RECORD KEEPING.

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

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

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

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

192.809 GENERAL.

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

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

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

1.2 COVERED TASKS, COMPETENCIES AND SKILLS.

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

(Protocol 2.01 §192.805/195.505)

METHOD USED FOR DETERMINING COVERED TASK LIST

_____
_____
_____
_____
_____

1.3 OUTSIDE CONTRACTORS.

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

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

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

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

Copies of the topics covered are on file.

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

A written / oral and/or hands-on evaluation is required in each competency or skill. One hundred percent of all specified critical questions and not less than seventy percent of all other 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.

1.5 QUALIFICATION BY PRE-TEST.

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

1.6 RE-QUALIFICATION.

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

1.7 QUALIFICATION BY PERFORMANCE.

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

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

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

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

1.8 PERFORMING COVERED TASK UNDER DIRECT OBSERVATION OF QUALIFIED PERSON.

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

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

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

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

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

(Protocol 3.02 §192.805/195.505)

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1.9 RE-EVALUATION FOR CAUSE.

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

Incident means any of the following events:

1. An event that involves a release of gas from a pipeline or liquefied natural gas *(LNG)* or gas from an LNG facility and (i) A death, or personal injury necessitating in-patient hospitalization; or (ii) Estimated property damage, 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, an near-miss incident, evidence of an error or incorrect procedure, or any other evidence the individual may need to be re-evaluated and re-qualified.

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

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

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

1.10 NOTICE OF CHANGES.

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

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

1.11 TRAINING.

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

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

All hands-on activities will be conducted at the operator’s gas facility, a gas facility of similar design, the IAMU/MMUA 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 Division 7.

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

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

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1.12 PROGRAM RECORDKEEPING.

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

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

MMUA, and IAMU maintain an off-site back up of documentation for the OQ records.

(Protocols 3.01, 7.01 §192.807/195.507)

1.13 NEW CONSTRUCTION.

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

1.14 MUTUAL AID.

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

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

(Protocols 1.03, 1.04 §192.803/195.503)

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

_____
_____
_____
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_____
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_____

1.15 QUALIFICATION METHODS.

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

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

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

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1.16 ABNORMAL OPERATING CONDITIONS

AOC's are included in the specific tasks, and how to recognize and respond to them are included in the qualification method as outlined in Division 8.

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

(Protocol 4.02 §192.803/195.503)

1.17 PROGRAM PERFORMANCE, EFFECTIVENESS and IMPROVEMENT

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

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

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

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

(Protocol 6.01 §192.805/195.505)

PROCEDURES WITH COVERED TASKS

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

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

Tasks:

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

Required Competencies and Skills:

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

P-2 MAINTAIN REGULATOR STATIONS

Tasks:

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

Required Competencies and Skills:

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

P-3 CONDUCT LEAK SURVEYS

Tasks:

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

Required Competencies and Skills:

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

P-4 OPERATE LINE LOCATOR

Tasks:

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

Required Competencies and Skills:

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

P-5 INSTALL MAINS

Tasks:

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

Required Competencies and Skills:

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

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

P-6 INSTALL SERVICE LINES / REINSTATING SERVICE LINES

Tasks:

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

Required Competencies and Skills:

1 (all)	Fundamentals of natural gas
2.1	Documenting materials and installation records
2.2	Documenting maximum allowable operating pressure (MAOP)
2.4	Investigating and documenting line failure
3.3	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.

P-7 CONDUCT LEAK INVESTIGATIONS

Tasks:

Procedures specified in Operating and Maintenance Plan

Required Competencies and Skills:

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

P-8 OPERATE ODORANT LEVEL TESTING EQUIPMENT

Tasks:

Selecting appropriate location

Required Competencies and Skills:

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

P-9 PERFORM LEAK SURVEYS AND PIPELINE PATROLS

Tasks:

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

Required Competencies and Skills:

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

P-10 FILL ODORANT SYSTEM

Tasks:

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

Required Competencies and Skills:

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

P-11 OPERATE BACKHOE

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

Required Competencies and Skills:

1 (all)	Fundamentals of natural gas
8.1	Operating backhoe

P-12 OPERATE TRENCHER

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

Required Competencies and Skills:

1 (all)	Fundamentals of natural gas
8.3	Operating trencher

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

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

Required Competencies and Skills:

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

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

Tasks:
a. Installing stab fittings
b. Installing compression fittings
c. 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

P-18 VISUALLY INSPECT COMPLETED WELD

Tasks:
Following approved welding procedures

Required Competencies and Skills:

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

P-19 TEST WELDERS

Tasks:
Following approved welding procedures

Required Competencies and Skills:

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

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

Tasks:
Following approved welding procedures

Required Competencies and Skills:

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

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

Tasks:

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

Required Competencies and Skills:

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

P-22 INSPECT FOR INTERNAL CORROSION

TASKS:

a. Inspecting tapping coupons
b. Inspecting open ends

Required Competencies and Skills:

1 (all)	Fundamentals of natural gas
10.2	Internal corrosion

P-23 INSPECT FOR EXTERNAL CORROSION

Tasks:

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

Required Competencies and Skills:

1 (all)	Fundamentals of natural gas
10.3	External corrosion

P-24 INSPECT FOR ATMOSPHERIC CORROSION

Tasks:

a. Inspecting paint coverage
b. Inspecting for physical damage

Required Competencies and Skills:

1 (all)	Fundamentals of natural gas
10.4	Atmospheric corrosion

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

Tasks:

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

Required Competencies and Skills:

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

P-26 APPLY COATINGS

Tasks:

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

Required Competencies and Skills:

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

P-27 CONDUCT HOLIDAY DETECTION (Coating Inspection)

Tasks:

a. Visually inspecting
b. Using fault detection equipment

Required Competencies and Skills:

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

P-28 TAKE PIPE-TO-SOIL READINGS

Tasks:
a. Properly placing half-cell
b. Using voltmeter

Required Competencies and Skills:

1 (all)	Fundamentals of natural gas
10.1	Cathodic protection

P-29 INSPECT FOR DETERIORATION AND DAMAGE

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

Required Competencies and Skills:

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

P-30 INSPECT DITCHES AND BACKFILLS

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

Required Competencies and Skills:

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

P-31 APPLY PADDING AND SHIELDING

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

Required Competencies and Skills:

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

P-32 PAINT AND JACKET ABOVE GROUND FACILITIES

Tasks:

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

Required Competencies and Skills:

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

P-33 INSTALL CATHODIC PROTECTION (Sacrificial Anode System)

Tasks:

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

Required Competencies and Skills:

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

P-34 INSTALL IMPRESSED CURRENT SYSTEM

Tasks:

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

Required Competencies and Skills:

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

P-35 VISUALLY INSPECT CATHODIC PROTECTION SYSTEM

Tasks:

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

Required Competencies and Skills:

1 (all)	Fundamentals of natural gas
10.10	Inspection, monitoring cathodic protection system

P-36 MONITOR CATHODIC PROTECTION SYSTEM

Tasks:

a. Recording pipe-to-soil readings
b. Testing for AC Drain
c. Inspecting dielectric spacers
d. Inspecting DC Interference bond
e. Testing soil resistivity
f. Establishing current requirements
g. Inspecting reverse current switch diodes
h. Recording IR Drops
i. Testing casings – (100 mv)

Required Competencies and Skills:

1 (all)	Fundamentals of natural gas
10.10	Inspection, monitoring cathodic protection system

P-37 MAINTAINING CATHODIC PROTECTION SYSTEM

Tasks:

Remediating abnormalities found through visual inspection and monitoring

Required Competencies and Skills:

1 (all)	Fundamentals of natural gas
10.10	Inspection, monitoring cathodic protection

P-38 ELECTRICALLY ISOLATE SYSTEM

Tasks:

a. Installing or maintaining flange gaskets
b. Installing or maintaining weld-in insulating fittings
c. Installing or maintaining insulated meter spuds
d. Installing or maintaining insulated gas cocks
e. Installing or maintaining cathodic protection system isolation

Required Competencies and Skills:

1 (all)	Fundamentals of natural gas
10.8	Installation of cathodic protection (sacrificial anode system)
10.9	Installation of impressed current system
10.10	Inspection, monitoring cathodic protection system

P-39 INSPECT FOR INTERFERENCE OR STRAY CURRENTS

Tasks:

a. Using current interrupter
b. Using power supply

Required Competencies and Skills:

1 (all)	Fundamentals of natural gas
10.10	Inspection, monitoring cathodic protection system

P-40 TAPPING AND STOPPING STEEL PIPE

Tasks:

a. Installing tapping tees
b. Installing bottom-out fittings
c. Installing line stoppers
d. Installing bag stoppers
e. Installing expansion plugs

Required Competencies and Skills:

1 (all)	Fundamentals of natural gas
7.20 and/or 7.21	Tapping/Stopping steel pipe 1” through 4” Tapping/Stopping steel pipe 6” through 8”

P-41 TAPPING AND STOPPING POLYETHYLENE PIPE

Tasks:

a. Squeezing off
b. Performing hot-tap
c. Grounding

Required Competencies and Skills:

1 (all)	Fundamentals of natural gas
7.22	Tapping and stopping polyethylene pipe

P-42 INSPECT VAULT

Tasks:

a. Inspect physical integrity of vault
b. Inspecting integrity of steps
c. Inspecting for excess moisture and proper drainage
d. Inspecting ventilation equipment (vaults exceeding 200cf)

Required Competencies and Skills:

1 (all)	Fundamentals of natural gas
4.8	Confined Space Entry (Vaults, etc.)

P-43 ABANDON VAULTS

Tasks:

a. Installing line stops
b. Installing temporary bypass
c. Removing vault
d. Maintaining job site protection

Required Competencies and Skills:

1 (all)	Fundamentals of natural gas
4.9	Job site protection
4.11	Pressure testing
4.13	Excavation safety
4.8, 7.23 and 7.20, or 7.21, or 7.22	Confined space entry Vault abandonment Tapping/Stopping steel pipe 1” through 4” Tapping/Stopping steel pipe 6” through 8” Tapping and stopping polyethylene pipe
7.24	Vault abandonment

P-44 MAINTAIN KEY VALVES

Tasks:

a. Positioning valve key on valve
b. Closing and opening valve
c. Lubricating valve (determine correct amount required)
d. Valve mapping
e. Valve location
f. Verifying area of control (mapping)
g. Identifying valve material
h. Identifying valve size
i. Maintaining accessibility of valves

Required Competencies and Skills:

1 (all)	Fundamentals of natural gas
12.1	Operating valves (including key valves), regulators, and relief valves
12.3	Inspecting and maintaining key valves

P-45 INSPECT CUSTOMER METER SETS

Tasks:

a. Inspecting for proper location
b. Inspecting stop cock installation for easy access
c. Determining whether meter set insulated
d. Inspecting regulator installation for vent location/direction
e. Inspecting meter installation for flow direction
f. Checking for riser height and if meter set is level

g. Checking pressure and adjust (customer side)
h. Checking for lock-up
i. Testing for no-flow
j. Checking tracer wire, if poly pipe is used

Required Competencies and Skills:

1 (all)	Fundamentals of natural gas
6.7	Pressure Checks to Establish Gas Service
6.8	Establishing and Disconnecting Gas
10.4	Atmospheric corrosion

P-46 OPERATING PEAK SHAVING PLANT (Propane/Air Mixture/Injection)

Tasks:

a. Operating valves
b. Operating electric control panel
c. Adjusting temperature on vaporizer
d. Adjust injection pressure (Foxboro controller)
e. Operating compressor
f. Operating the specific gravity controller (Usually Ranarex controller)
g. Operate Bunson burner (If equipped)
h. Inspect gauges, charts for stabilization

Required Competencies and Skills:

1 (all)	Fundamentals of natural gas
13.1	Pre-start-up procedures
13.2	Start-up/operating procedures/shut down accordance with operators manual for specific equipment used

P-47 SYSTEM UPRATING (Increasing Pressure)

a. Inspecting meter sets (regulators, orifice size, internal relief)
b. Inspecting regulator/relief capacities
c. Leak survey
d. Bar hole testing

Required Competencies and Skills:

1 (all)	Fundamentals of natural gas
2.3/12.4	System uprating
2.2	Documenting MAOP
5.1	Leak classification
5.2	Procedures for leak surveys and patrols
5.3	Combustible gas indicators
5.4	Electronic gas detectors
5.5	Flame ionization
5.6	Bar hole testing and purging

REQUIRED COMPETENCIES AND SKILLS

(Protocols 1.05, 2.02, 4.01, 5.02 §192.803/195.503, §192.805/195.505, §192.809/195.509 Amdt 192-90, 8-20-01)

	Competencies and Skills	Original Qualification Method	Re-Qualif. Method	Re-Qualif. Period	Suggested Training Reference[1]
Sec. 1	**Fundamentals of Natural Gas**				
1.1	Characteristics and hazards of natural gas	Written evaluation	Written evaluation	Prerequisite, then 60 months, not to exceed 60 months	Gas Fundamentals Training, MEA-101
1.2	Potential ignition sources: indoor and outdoor	Written evaluation	Written evaluation	Prerequisite, then 60 months, not to exceed 60 months	Gas Fundamentals Training, MEA-102
1.3	Recognizing emergency conditions	Written evaluation	Written evaluation	Prerequisite, then 60 months, not to exceed 60 months	Gas Fundamentals Training, MEA-103
1.4	Recognizing and reporting natural gas leaks	Written evaluation	Written 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 evaluation	Written or hands-on eval.	60 months, not to exceed 60 months	Operator's workshop, O&M Manual MEA-402
2.2	Documenting maximum allowable operating pressure (MAOP)	Written evaluation	Written or hands-on eval.	60 months, not to exceed 60 months	Operator's Workshop, O&M Manual MEA-421
2.3	System up-rating	Written evaluation	Written or hands-on eval.	60 months, not to exceed 60 months	Operator's Workshop, MEA-521
2.4	Investigating and documenting line failure	Written evaluation	Written or hands-on eval.	36 months, not to exceed 39 months	Operator's Workshop, MEA-462
2.5	Accident reporting	Written evaluation	Written evaluation	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 and hands-on evaluation	Written or hands-on eval.	60 months, not to exceed 60 months	Operator's Workshop, Manufacturer's Procedures, MEA-402
3.2	Locating facilities using the inductive method	Written and hands-on evaluation	Written or hands-on eval.	60 months, not to exceed 60 months	Operator's Workshop, Manufacturer's Procedures, MEA-402
3.3	Locating facilities using the inductive method (two persons)	Written and hands-on evaluation	Written or hands-on eval.	60 months, not to exceed 60 months	Operator's Workshop, Manufacturer's Procedures, MEA-402
3.4	Determining depth through triangulation	Written and hands-on evaluation	Written or hands-on eval.	60 months, not to exceed 60 months	Operator's Workshop, Manufacturer's Procedures, MEA-402

3.5	System mapping	Written evaluation	Written or hands-on eval.	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 evaluation	Written or hands-on eval.	36 months, not to exceed 39 months	OSHA compliance manual and training, MEA-111
4.2	Power tool safety	Written evaluation	Written or hands-on eval.	36 months, not to exceed 39 months	OSHA compliance manual and training, MEA-121
4.3	Proper firefighting techniques	Written evaluation	Written or hands-on eval.	36 months, not to exceed 39 months	Emergency Procedures Training, MEA-122
4.4	Controlling the accidental release of gas	Written evaluation	Written or hands-on eval.	36 months, not to exceed 39 months	Emergency Procedures Training, MEA-131
4.5	Soil subsidence	Written evaluation	Written or hands-on eval.	36 months, not to exceed 39 months	OSHA compliance manual and training, MEA-201
4.6	Atmospheric corrosion	Written evaluation	Written or hands-on eval.	36 months, not to exceed 39 months	Operator's Workshop, MEA-202
4.7	Recognizing unsafe meter sets	Written evaluation	Written or hands-on eval.	36 months, not to exceed 39 months	MEA-211
4.8	Confined space entry (vaults, etc.)	Written evaluation	Written or hands-on eval.	Initial, then 12 months, not to exceed 15 months	OSHA compliance manual and training, MEA-501
4.9	Job site protection	Written evaluation	Written or hands-on eval.	36 months, not to exceed 39 months	Compliance manual and training, MEA- MEA-401
4.10	Purging safety	Written evaluation	Written or hands-on eval.	36 months, not to exceed 39 months	Operator's Workshop, MEA-422
4.11	Pressure testing steel and plastic pipeline	Written evaluation	Written or hands-on eval.	36 months, not to exceed 39 months	Operator's Workshop, MEA-421
4.12	Abandoning facilities	Written evaluation	Written or hands-on eval.	36 months, not to exceed 39 months	Operator's Workshop, MEA-471
4.13	Excavation safety	Written evaluation	Written or hands-on eval.	Initial, then 12 months, not to exceed 15 months	OSHA compliance manual and training, MEA-404
Sec. 5	**Fundamentals of Gas Leaks - Survey and Response**				
5.1	Leak classification	Written evaluation	Written or hands-on eval.	60 months, not to exceed 60 months	Emergency Procedures Training, Gas Fundamentals Training, MEA-221
5.2	Procedures for leak surveys and patrols	Written evaluation	Written or hands-on eval.	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 eval.	60 months, not to exceed 60 months (or new equip.)	Operator's Workshop, Manufacturer's Procedures MEA-231
5.4	Electronic gas detectors	Written or Hands-on evaluation	Written or hands-on eval.	60 months, not to exceed 60 months (or new equip.)	Operator's Workshop, Manufacturer's Procedures, MEA-231
5.5	Flame ionization	Written or Hands-on evaluation	Written or hands-on eval.	60 months, not to exceed 60 months (or new equip.)	Operator's Workshop, Manufacturer's Procedures MEA-232
5.6	Bar hole testing and purging	Written or Hands-on evaluation	Written or hands-on eval.	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 evaluation	Written or hands-on eval.	60 months, not to exceed 60 months	Operator's Workshop, MEA-241
6.2	Investigating leaks	Written evaluation	Written or hands-on eval.	60 months, not to exceed 60 months	Operator's Workshop, MEA-272
6.3	Combustion and ventilation air requirements	Written evaluation	Written or hands-on eval.	60 months, not to exceed 60 months	Operator's Workshop, MEA-301
6.4	Pilot light operation	Written evaluation	Written or hands-on eval.	60 months, not to exceed 60 months	Operator's Workshop, MEA-311, 324
6.5	Gas-air adjustment	Written evaluation	Written or hands-on eval.	60 months, not to exceed 60 months	Operator's Workshop, MEA-312
6.6	Appliance venting	Written evaluation	Written or hands-on eval.	60 months, not to exceed 60 months	Operator's Workshop, MEA-313
6.7	Pressure checks to establish gas service	Written evaluation	Written or hands-on eval.	60 months, not to exceed 60 months	Operator's Workshop, MEA-321
6.8	Establishing and disconnecting gas	Written evaluation	Written or hands-on eval.	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 evaluation	Written or hands-on eval.	36 months, not to exceed 39 months	Operator's Workshop, MEA-421
7.2	Procedures for abandoning facilities	Written evaluation	Written or hands-on eval.	36 months, not to exceed 39 months	Operator's Workshop, MEA-471
7.3	Cathodic protection (general)	Written evaluation	Written or hands-on eval.	36 months, not to exceed 39 months	Operator's Workshop, MEA-431
7.4	Constructing facilities across streets, railroads, and waterways	Written evaluation	Written or hands-on eval.	36 months, not to exceed 39 months	Operator's Workshop, MEA-453
7.5	Operating thermite welder	Written and hands-on evaluation	Written or hands-on eval.	36 months, not to exceed 39 months	Operator's Workshop, Manufacturer's Procedures, MEA-431

7.6	Installing tracer wire	Written evaluation	Written or hands-on eval.	36 months, not to exceed 39 months	Operator's Workshop, DOT Small Gas Operators Manual MEA-451, 452
7.7	Installing valves	Written Evaluation	Written or hands-on eval.	36 months, not to exceed 39 months	Operator's Workshop, MEA-451
7.8	Steel and cast iron repair fittings	Written and hands-on evaluation	Written or hands-on eval.	60 months, not to exceed 60 months	Operator's Workshop, Manufacturer's Procedures, MEA-461
7.9	Maintaining steel and cast iron mains	Written evaluation	Written or hands-on eval.	60 months, not to exceed 60 months	Operator's Workshop, MEA-462
7.10	Reinforcing steel and plastic mains	Written evaluation	Written or hands-on eval.	60 months, not to exceed 60 months	Fusion Workshop, MEA-463
7.11	Plastic pipe joining (fusion)	Hands-on evaluation	Hands-on evaluation	12 months, not to exceed 15 months	Fusion Workshop, MEA-411
7.12	Plastic pipe joining (mechanical couplings)	Hands-on evaluation	Hands-on evaluation	36 months, not to exceed 39 months	Operator's Workshop, MEA-463
7.13	Recognition of defective material	Written evaluation	Written or hands-on eval.	36 months, not to exceed 39 months	Operator's Workshop, MEA-411, 412, 421
7.14	Steel pipe joining by welding	Per approved welding procedures	Per approved welding procedures	12 months, not to exceed 12 months	Pipeline Welding Workshop, Qualified Welding Procedures
7.15	Steel pipe joining by mechanical couplings	Written and hands-on evaluation	Written or hands-on eval.	36 months, not to exceed 39 months	Operator's Workshop, Operator's Workshop, MEA-412
7.16	Damage prevention	Written evaluation	Written or hands-on eval.	36 months, not to exceed 39 months	Operator's Workshop, MEA-462
7.17	Application of padding and shielding	Written evaluation	Written or hands-on eval.	36 months, not to exceed 39 months	Operator's Workshop, MEA-453
7.18	Replacing emergency valves	Written evaluation	Written or hands-on eval.	60 months, not to exceed 60 months	Operator's Workshop, MEA-441, 511
7.19	Installing meter sets	Written evaluation	Written or hands-on eval.	60 months, not to exceed 60 months	Operator's Workshop, MEA-211, 322, 452
7.20	Tapping and stopping steel pipe 1" through 4"	Hands-on evaluation	Hands-on evaluation	36 months, not to exceed 39 months	Operator's Workshop, MEA-441
7.21	Tapping and stopping steel pipe 6" through 8"	Hands-on evaluation	Hands-on evaluation	36 months, not to exceed 39 months	Operator's Workshop, Manufacture's Procedures
7.22	Tapping and stopping polyethylene pipe	Hands-on evaluation	Hands-on evaluation	60 months, not to exceed 60 months	Operator's Workshop, MEA-451, 452
7.23	Vault abandonment	Written evaluation	Written or hands-on eval.	36 months, not to exceed 39 months	Operator's Workshop, MEA-471, 501

Sec. 8	**Fundamentals of Construction – Heavy Equipment Operation**				
8.1	Operating backhoe	Written and hands-on evaluation	Written or hands-on eval.	36 months, not to exceed 39 months	Operator's Workshop, MEA-403
8.2	Operating trencher	Hands-on evaluation	Written or hands-on eval.	36 months, not to exceed 39 months	Operator's Workshop, Manufacturer's Procedures, MEA-403
8.3	Operating boring equipment	Hands-on evaluation	Hands-on evaluation	36 months, not to exceed 39 months	Operator's Workshop, Manufacturer's Procedures
8.4	Ditch and backfill inspection	Written evaluation	Written or hands-on eval.	36 months, not to exceed 39 months	Operator's Workshop, MEA-404
Sec. 9	**Fundamentals of Measurement and Control**				
9.1	Metering	Written evaluation	Written or hands-on eval.	60 months, not to exceed 60 months	Metering Workshop
9.2	Odorization measurement and control	Written evaluation	Written or hands-on eval.	60 months, not to exceed 60 months	Operator's Workshop, MEA-251
Sec. 10	**Corrosion Control**				
10.1	Cathodic protection	Written evaluation	Written or hands-on eval.	36 months, not to exceed 39 months	Corrosion control workshop, MEA-431
10.2	Internal corrosion	Written evaluation	Written or hands-on eval.	36 months, not to exceed 39 months	Corrosion control workshop, MEA-431
10.3	External corrosion	Written evaluation	Written or hands-on eval.	36 months, not to exceed 39 months	Corrosion control workshop, MEA-431
10.4	Atmospheric corrosion	Written evaluation	Written or hands-on eval.	36 months, not to exceed 39 months	Corrosion control workshop, MEA-202
10.5	Coatings	Written evaluation	Written or hands-on eval.	36 months, not to exceed 39 months	Corrosion control workshop, MEA-431
10.6	Holiday detection (coating inspection)	Written and hands-on evaluation	Written or hands-on eval.	36 months, not to exceed 39 months	Corrosion control workshop, MEA-431
10.7	Painting and jacketing above ground facilities	Hands-on evaluation	Hands-on evaluation	36 months, not to exceed 39 months	Corrosion control workshop, MEA-202
10.8	Installation of cathodic protection (sacrificial anode system)	Written evaluation	Written or hands-on eval.	36 months, not to exceed 39 months	Corrosion control workshop, MEA-431
10.9	Installation of impressed current system	Written evaluation	Written or hands-on eval.	36 months, not to exceed 39 months	Corrosion control workshop, MEA-431
10.10	Inspection, monitoring cathodic protection system	Written evaluation	Written or hands-on eval.	36 months, not to exceed 39 months	Corrosion control workshop, MEA-431

Sec. 11	**Odorization**				
11.1	Operating and maintaining differential odorant system	Written and hands-on evaluation	Written or hands-on eval.	60 months, not to exceed 60 months	Operator's Workshop, O&M Manual, MEA-251
11.2	Operating and maintaining injection odorant system	Written and hands-on evaluation	Written or hands-on eval.	60 months, not to exceed 60 months	Operator's Workshop, O&M Manual, MEA-251
11.3	Testing odorant level	Written and hands-on evaluation	Written or hands-on eval.	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 evaluation	Written or hands-on eval.	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 eval.	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 eval.	60 months, not to exceed 60 months	Operator's Workshop, O&M Manual, MEA-511
12.4	System uprating	Written evaluation	Written or hands-on eval.	60 months, not to exceed 60 months	Operator's Workshop, O&M Manual, MEA-521
Sec. 13	**Operating Peak Shaving Plant (Propane/air mixture/injection)**				
13.1	Pre-start-up procedures	Hands-on evaluation	Hands-on evaluation	Initial, then 12 months, not to exceed 15 months	O&M Manual, Emergency shut down procedures
13.2	Start-up/operating procedures/shut down in accordance with operators manual for specific equipment	Hands-on evaluation	Hands-on evaluation	Initial, then 12 months, not to exceed 15 months	O&M Manual, Emergency shut down procedures

1Reference to operator training refers to workshops conducted by state and regional associations, such as the Iowa Association of Municipal Utilities and the Midwest Energy Association (formerly known as Midwest Gas Association), manufacturers and distributors of gas industry products and equipment, state regulatory agencies, and other organizations. Specific references to MEA materials are to training modules in the Midwest Energy Association's Operator Qualification Training series.

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

Division 4a of the Operator Qualification Program contains an Individual Qualification Summary. This form will identify the qualified individual, the covered tasks that each individual is qualified to perform, the dates of current qualification for each task, and the qualification methods. Form 4a is to be maintained by and is the property of the individual. If forms 4a is not used, other appropriate recordkeeping methods may also be acceptable, such as, computer databases and workshop documentation, etc. Training records that support qualified person qualifications shall be maintained while the individual is performing the covered task and of persons that are no longer performing covered tasks shall be retained for the time period of five years.

INDIVIDUAL QUALIFICATION SUMMARY

For

_____

(Employee Name)

This table is used to record the progress of an individual in successfully demonstrating qualification in a competency or skill required to perform tasks necessary for the operation of a natural gas system. A certificate for each competency or skill, which verifies qualification by written evaluation or performance evaluation, must be attached. (Protocol 3.01 §192.807/195.507)

	Competencies and Skills	Original Qualification Method	Re-Qualif. Method	Re-Qualif. Period	Original Date Qualified	Date Re-Qualified
Sec. 1	**Fundamentals of Natural Gas**					
1.1	Characteristics and hazards of natural gas	Written evaluation	Written evaluation	60 months, not to exceed 60 months		
1.2	Potential ignition sources: indoor and outdoor	Written evaluation	Written evaluation	60 months, not to exceed 60 months		
1.3	Recognizing emergency conditions	Written evaluation	Written evaluation	60 months, not to exceed 60 months		
1.4	Recognizing and reporting natural gas leaks	Written evaluation	Written evaluation	60 months, not to exceed 60 months		
Sec. 14	**Record keeping**					
2.1	Documenting materials and installation records	Written evaluation	Written or hands-on eval.	60 months, not to exceed 60 months		
2.2	Documenting maximum allowable operating pressure (MAOP)	Written evaluation	Written or hands-on eval.	60 months, not to exceed 60 months		

2.3	System up-rating	Written evaluation	Written or hands-on eval.	60 months, not to exceed 60 months		
2.4	Investigating and documenting line failure	Written evaluation	Written or hands-on eval.	36 months, not to exceed 39 months		
2.5	Accident reporting	Written evaluation	Written evaluation	60 months, not to exceed 60 months		
Sec. 3	**Marking and Mapping Facilities**					
3.1	Locating facilities using the conductive method	Written and hands-on evaluation	Written or hands-on eval.	60 months, not to exceed 60 months		
3.2	Locating facilities using the inductive method	Written and hands-on evaluation	Written or hands-on eval.	60 months, not to exceed 60 months		
3.3	Locating facilities using the inductive method (two persons)	Written and hands-on evaluation	Written or hands-on eval.	60 months, not to exceed 60 months		
3.4	Determining depth through triangulation	Written and hands-on evaluation	Written or hands-on eval.	60 months, not to exceed 60 months		
3.5	System mapping	Written evaluation	Written or hands-on eval.	60 months, not to exceed 60 months		
Sec. 4	**Fundamentals of Field Safety in Construction, Operation, and Maintenance**					
4.1	Personal protective equipment	Written evaluation	Written or hands-on eval.	36 months, not to exceed 39 months		
4.2	Power tool safety	Written evaluation	Written or hands-on eval.	36 months, not to exceed 39 months		
4.3	Proper firefighting techniques	Written evaluation	Written or hands-on eval.	36 months, not to exceed 39 months		
4.4	Controlling the accidental release of gas	Written evaluation	Written or hands-on eval.	36 months, not to exceed 39 months		
4.5	Soil subsidence	Written evaluation	Written or hands-on eval.	36 months, not to exceed 39 months		
4.6	Atmospheric corrosion	Written evaluation	Written or hands-on eval.	36 months, not to exceed 39 months		

4.7	Recognizing unsafe meter sets	Written evaluation	Written or hands-on eval.	36 months, not to exceed 39 months		
4.8	Confined space entry (vaults, etc.)	Written evaluation	Written or hands-on eval.	Initial, then 12 months, not to exceed 15 months		
4.9	Job site protection	Written evaluation	Written or hands-on eval.	36 months, not to exceed 39 months		
4.10	Purging safety	Written evaluation	Written or hands-on eval.	36 months, not to exceed 39 months		
4.11	Pressure testing steel and plastic pipeline	Written evaluation	Written or hands-on eval.	36 months, not to exceed 39 months		
4.12	Abandoning facilities	Written evaluation	Written or hands-on eval.	36 months, not to exceed 39 months		
4.13	Excavation safety	Written evaluation	Written or hands-on eval.	Initial, then 12 months, not to exceed 15 months		
Sec. 5	**Fundamentals of Gas Leaks - Survey and Response**					
5.1	Leak classification	Written evaluation	Written or hands-on eval.	60 months, not to exceed 60 months		
5.2	Procedures for leak surveys and patrols	Written evaluation	Written or hands-on eval.	60 months, not to exceed 60 months		
5.3	Combustible gas indicators	Written or Hands-on evaluation	Written or hands-on eval.	60 months, not to exceed 60 months (or new equip.)		
5.4	Electronic gas detectors	Written or Hands-on evaluation	Written or hands-on eval.	60 months, not to exceed 60 months (or new equip.)		
5.5	Flame ionization	Written or Hands-on evaluation	Written or hands-on eval.	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 eval.	60 months, not to exceed 60 months		

Sec. 6	**Fundamentals of Customer Service**					
6.1	Carbon monoxide (CO) testing	Written evaluation	Written or hands-on eval.	60 months, not to exceed 60 months		
6.2	Investigating leaks	Written evaluation	Written or hands-on eval.	60 months, not to exceed 60 months		
6.3	Combustion and ventilation air requirements	Written evaluation	Written or hands-on eval.	60 months, not to exceed 60 months		
6.4	Pilot light operation	Written evaluation	Written or hands-on eval.	60 months, not to exceed 60 months		
6.5	Gas-air adjustment	Written evaluation	Written or hands-on eval.	60 months, not to exceed 60 months		
6.6	Appliance venting	Written evaluation	Written or hands-on eval.	60 months, not to exceed 60 months		
6.7	Pressure checks to establish gas service	Written evaluation	Written or hands-on eval.	60 months, not to exceed 60 months		
6.8	Establishing and disconnecting gas	Written evaluation	Written or hands-on eval.	60 months, not to exceed 60 months		
Sec. 7	**Fundamentals of Construction**					
7.1	Pressure testing steel and plastic pipeline	Written evaluation	Written or hands-on eval.	36 months, not to exceed 39 months		
7.2	Procedures for abandoning facilities	Written evaluation	Written or hands-on eval.	36 months, not to exceed 39 months		
7.3	Cathodic protection (general)	Written evaluation	Written or hands-on eval.	36 months, not to exceed 39 months		
7.4	Constructing facilities across streets, railroads, and waterways	Written evaluation	Written or hands-on eval.	36 months, not to exceed 39 months		
7.5	Operating thermite welder	Written and hands-on evaluation	Written or hands-on eval.	36 months, not to exceed 39 months		
7.6	Installing tracer wire	Written Evaluation	Written or hands-on eval.	36 months, not to exceed 39 months		

7.7	Installing valves	Written Evaluation	Written or hands-on eval.	36 months, not to exceed 39 months		
7.8	Steel and cast iron repair fittings	Written and hands-on evaluation	Written or hands-on eval.	60 months, not to exceed 60 months		
7.9	Maintaining steel and cast iron Mains	Written Evaluation	Written or hands-on eval.	60 months, not to exceed 60 months		
7.10	Reinforcing steel and plastic mains	Written Evaluation	Written or hands-on eval.	60 months, not to exceed 60 months		
7.11	Plastic pipe joining (fusion)	Hands-on evaluation	Hands-on evaluation	12 months, not to exceed 15 months		
7.12	Plastic pipe joining (mechanical couplings)	Hands-on evaluation	Hands-on evaluation	36 months, not to exceed 39 months		
7.13	Recognition of defective material	Written evaluation	Written or hands-on eval.	36 months, not to exceed 39 months		
7.14	Steel pipe joining by welding	Per approved welding procedures	Per approved welding procedures	12 months, not to exceed 12 months		
7.15	Steel pipe joining by mechanical couplings	Written and hands-on evaluation	Written or hands-on eval.	36 months, not to exceed 39 months		
7.16	Damage prevention	Written evaluation	Written or hands-on eval.	36 months, not to exceed 39 months		
7.17	Application of padding and shielding	Written evaluation	Written or hands-on eval.	36 months, not to exceed 39 months		
7.18	Replacing emergency valves	Written evaluation	Written or hands-on eval.	60 months, not to exceed 60 months		
7.19	Installing meter sets	Written evaluation	Written or hands-on eval.	60 months, not to exceed 60 months		
7.20	Tapping and stopping steel pipe 1” through 4”	Hands-on evaluation	Hands-on evaluation	36 months, not to exceed 39 months		
7.21	Tapping and stopping steel pipe 6” through 8”	Hands-on evaluation	Hands-on evaluation	36 months, not to exceed 39 months		
7.22	Tapping and stopping polyethylene pipe	Hands-on evaluation	Hands-on evaluation	60 months, not to exceed 60 months		

7.23	Vault abandonment	Written evaluation	Written or hands-on eval.	36 months, not to exceed 39 months		
Sec. 8	**Fundamentals of Construction – Heavy Equipment Operation**					
8.1	Operating backhoe	Written and hands-on evaluation	Written or hands-on eval.	36 months, not to exceed 39 months		
8.2	Operating trencher	Hands-on evaluation	Hands-on evaluation	36 months, not to exceed 39 months		
8.3	Operating boring equipment	Hands-on evaluation	Hands-on evaluation	36 months, not to exceed 39 months		
8.4	Ditch and backfill inspection	Written evaluation	Written or hands-on eval.	36 months, not to exceed 39 months		
Sec. 9	**Fundamentals of Measurement and Control**					
9.1	Metering	Written evaluation	Written or hands-on eval.	60 months, not to exceed 60 months		
9.2	Odorization measurement and control	Written evaluation	Written or hands-on eval.	60 months, not to exceed 60 months		
Sec. 10	**Corrosion Control**					
10.1	Cathodic protection	Written evaluation	Written or hands-on eval.	36 months, not to exceed 39 months		
10.2	Internal corrosion	Written evaluation	Written or hands-on eval.	36 months, not to exceed 39 months		
10.3	External corrosion	Written evaluation	Written or hands-on eval.	36 months, not to exceed 39 months		
10.4	Atmospheric corrosion	Written evaluation	Written or hands-on eval.	36 months, not to exceed 39 months		
10.5	Coatings	Written evaluation	Written or hands-on eval.	36 months, not to exceed 39 months		
10.6	Holiday detection (coating inspection)	Written and hands-on evaluation	Written or hands-on eval.	36 months, not to exceed 39 months		
10.7	Painting and jacketing above ground facilities	Hands-on evaluation	Hands-on evaluation	36 months, not to exceed 39 months		

10.8	Installation of cathodic protection (sacrificial anode system)	Written evaluation	Written or hands-on eval.	36 months, not to exceed 39 months		
10.9	Installation of impressed current system	Written evaluation	Written or hands-on eval.	36 months, not to exceed 39 months		
10.10	Inspection, monitoring cathodic protection system	Written evaluation	Written or hands-on eval.	36 months, not to exceed 39 months		
Sec. 11	**Odorization**					
11.1	Operating and maintaining differential odorant system	Written and hand-on evaluation	Written or hands-on eval.	60 months, not to exceed 60 months		
11.2	Operating and maintaining injection odorant system	Written and hands-on evaluation	Written or hands-on eval.	60 months, not to exceed 60 months		
11.3	Testing odorant level	Written and hands-on evaluation	Written or hands-on eval.	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 evaluation	Written or hands-on eval.	60 months, not to exceed 60 months		
12.2	Inspecting pressure regulating and limiting stations	Written or hands-on evaluation	Written or hands-on eval.	60 months, not to exceed 60 months		
12.3	Inspecting and maintaining key valves	Written or hands-on evaluation	Written or hands-on eval.	60 months, not to exceed 60 months		
12.4	System uprating	Written evaluation	Written or hands-on eval.	60 months, not to exceed 60 months		
Sec. 13	**Operating Peak Shaving Plant** (Propane/Air mixture/Injection)					
13.1	Pre-start-up procedure	Hands-on	Hands-on evaluation	Initial, then 12 months, not to exceed 15 months		
13.2	Start-up/operating procedures/shut down	Hands-on	Hands-on evaluation	Initial, then 12 months, not to exceed 15 months		

Sec. ___	**Other**					

Division 4b of the Operator Qualification Program contains a Group Qualification Summary. This form will identify each of the qualified individuals, the covered tasks that each individual is qualified to perform, and the dates of current qualification for each task. Form 4b is to be maintained by the facility administrator and is the property of the gas facility. If form 4b are not used, other appropriate recordkeeping methods may also be acceptable, such as, computer databases and workshop documentation, etc. Training records that support qualified person qualifications shall be maintained while the individual is performing the covered task and of persons that are no longer performing covered tasks shall be retained for the time period of five years.

OPERATOR QUALIFICATION (GROUP) SUMMARY

For

_____

(Name of Utility/Organization)

Where the employer copy of individual qualification summaries and related written and hands-on performance evaluations are retained in individual employee records or elsewhere, this table may be used by the operator to summarize the individual qualifications of all or a group of individuals who perform tasks necessary for the operation of a natural gas system.
(Protocol 3.01 §192.807/195.507)

Competencies and Skills		(List date of current qualification for each individual)					
Sec. 1	**Fundamentals of Natural Gas**						
1.1	Characteristics and hazards of natural gas						
1.2	Potential ignition sources: indoor and outdoor						
1.3	Recognizing emergency conditions						
1.4	Recognizing and reporting natural gas leaks						
Sec. 2	**Record keeping**						
2.1	Documenting materials and installation records						
2.2	Documenting maximum allowable operating pressure (MAOP)						
2.3	System up-rating						
2.4	Investigating and documenting line failure						
2.5	Accident reporting						

Sec. 3	**Marking and Mapping Facilities**						
3.1	Locating facilities using the conductive method						
3.2	Locating facilities using the inductive method						
3.3	Locating facilities using the inductive method (two persons)						
3.4	Determining depth through triangulation						
3.5	System mapping						
Sec. 4	**Fundamentals of Field Safety in Construction, Operation, and Maintenance**						
4.1	Personal protective equipment						
4.2	Power tool safety						
4.3	Proper firefighting techniques						
4.4	Controlling the accidental release of gas						
4.5	Soil subsidence						
4.6	Atmospheric corrosion						
4.7	Recognizing unsafe meter sets						
4.8	Confined space entry (vaults, 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						
5.5	Flame ionization						
5.6	Bar hole testing and purging						
Sec. 6	**Fundamentals of Customer Service**						
6.1	Carbon monoxide (CO) testing						
6.2	Investigating leaks						
6.3	Combustion and ventilation air requirements						
6.4	Pilot light operation						
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 pipe 1” through 4”						
7.21	Tapping and stopping steel pipe 6” through 8”						
7.22	Tapping and stopping polyethylene pipe						
7.23	Vault abandonment						
Sec. 8	**Fundamentals of Construction – Heavy Equipment Operation**						
8.1	Operating backhoe						
8.2	Operating trencher						
8.3	Operating boring equipment						
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 and jacketing above ground facilities						
10.8	Installation of cathodic protection (sacrificial anode system)						
10.9	Installation of impressed current system						
10.10	Inspection, monitoring cathodic protection system						
Sec. 11	**Odorization**						
11.1	Operating and maintaining differential odorant system						
11.2	Operating and maintaining injection odorant system						
11.3	Testing odorant level						
Sec. 12	**Other Operating and Maintenance Skills**						
12.1	Operating valves (including emergency valves), regulators, and relief valves						
12.2	Inspecting pressure regulating and limiting stations						
12.3	Inspecting and maintaining key valves						
12.4	System uprating						
Sec. 13	**Operating Peak Shaving Plant** (Propane/Air mixture/Injection)						
13.1	Pre-Start-up procedures						
13.2	Start-up/operating procedures/ shut down						
Sec. ___	**Other**						

EVALUATION OF HANDS-ON SKILLS

Division 5 of the Operator Qualification Program contains evaluating and qualifying hands-on demonstrations of skills necessary to perform tasks on gas systems. Operators may use the forms in Division 5 or attend appropriate workshops in obtaining qualification or re-evaluation. Appropriate documentation forms, attendance records, or manufacturer's procedures maybe used in lieu of the forms supplied in Division 5.

When performing direct observation the observer must appropriately document the observation, form "Direct Observation of Unqualified Person Performing Covered Task Under Direct Supervision of Qualified Individual" in Division 5 can be used to document the observation.

When communication of notice of change use form "Notice of Change."

When communicating a request for change and/or additions to this plan use form "Feedback Form."

(Protocols 3.02, 4.01, 8.01, 1.17 §192.805/195.505, §192.803/195.503)

NOTICE OF CHANGE

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

Utility/Company: _____

Date of Change: _____

Task(s) Impacted		O&M Procedure(s) Impacted		Regulations Impacted		Incidents, For Cause, Near Miss		Industry Accidents	
Yes	**No**	**Yes**	**No**	**Yes**	**No**	**Yes**	**No**	**Yes**	**No**

What Communicated: (Attach any supporting documentation.)

_____
_____
_____
_____

How Communicated:

_____
_____

Tasks Impacted:

_____
_____
_____

Individuals Impacted:

Name of Individual(s) receiving the changes associated with the performance of covered tasks.	Place an "X" in the boxes below when communication is completed for that individual

Name and Position of Person Processing the Change:

_____

After completing this form file in Division 7.

FEEDBACK FORM

Utility/Company: _____

Address: _____

Phone: _____ Date: _____

Change or Addition Requested:

_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____

Person Requesting Change:

_____

When form completed file copy in utility/company files and mail original copy to IAMU, 1735 NE 70th Avenue, Ankeny, IA 50021-9353, attention to Gas Services department.

IAMU Response:

_____
_____
_____
_____
_____
_____
_____
_____

IAMU Gas Services representative and date:

_____

Competency/skill: Direct Observation of Unqualified Person Performing Covered Task Under Direct Supervision of Qualified Individual

DATE: _____

LOCATION:

_____
_____
_____
(Address and/or GPS Location)

TASK BEING PERFORMED:

_____
_____
_____
_____
_____
_____

PROCEDURES USED:

_____
_____
_____
_____
_____
_____
_____
_____
_____
_____

Unqualified Individuals Name: _____I.D. Number: _____
(Print)

Number of unqualified persons being observed at one time: _____

_____ _____
Qualified Observer Signature **Unqualified Individual Signature**

Competency/skill: 3.1 Locate facilities using the conductive method

Qualified observer instructions:

1. For the performance steps below, observe the participant and check "Go" for successful completion of the step **or** "No Go" if remediation of the step is required.
2. A "No Go" rating on any of the steps constitutes a "No Go" for the entire performance skill. Performance skills must be completed with 100% accuracy.
3. Both the individual taking the performance evaluation and the qualified observer must sign this form upon completion of the evaluation.

Performance Step Analysis		Go	No Go
Connect the Transmitter			
1	Connect the transmitter cable to a metal riser pipe or locator wire, with the transmitter as far from the connection as the cable will allow.		
2	Insert the ground rod/plate to one side and away from the pipe, as far from the transmitter as the other connecting cable will allow.		
3	Pour a small amount of water at the ground site to increase conductivity.		
Locate the Pipe			
4	Set the receiver sensitivity control to the low range.		
5	Hold the receiver parallel with the pipe and in a vertical position.		
6	Sweep the receiver close to the ground using short, smooth moves without swinging or rocking.		
7	Find and mark the general location of the pipe by listening for the loudest signal.		
8	Hold the receiver face-up in a horizontal position.		
9	Adjust the sensitivity control to **medium** or **high**.		
10	Sweep the receiver back and forth over the general location, perpendicular to the pipe.		
11	Find the null and mark its location according to Company policy.		
Comments:			

Participant Name: _____ **I.D. Number:** _____

Test Date: _____ **Location:** _____

Evaluation: ❑ **Qualified** ❑ **Not Qualified**

_____ _____

Qualified Observer Signature Participant Signature

Competency/skill: 3.2 Locate facilities using the inductive method (one person)

Qualified observer instructions:

1. For the performance steps below, observe the participant and check "Go" for successful completion of the step **or** "No Go" if remediation of the step is required.
2. A "No Go" rating on any of the steps constitutes a "No Go" for the entire performance skill. Performance skills must be completed with 100% accuracy.
3. Both the individual taking the performance evaluation and the qualified observer must sign this form upon completion of the evaluation.

Performance Step Analysis		Go	No
Position the Transmitter			
1	Place the transmitter over the pipe at a 45^0 angle to its length.		
2	Set the receiver range switch and start with the receiver and transmitter at least 30' apart.		
3	Holding the receiver parallel with the pipe and in a vertical position, walk toward the pipe from one side.		
4	When the **maximum signal** occurs, stop and mark the spot on the ground directly below the receiver.		
5	Move the transmitter and place it on the mark in a vertical position, parallel to and directly above the pipe.		
6	Take the receiver back down the pipeline at least 30 feet away from the transmitter.		
7	Sweep the receiver back and forth over the pipe close to the ground, using short, smooth moves with receiver parallel to transmitter and vertical.		
8	Move the transmitter to the second mark and return to the first mark.		
Locate the Pipe			
9	Sweep the receiver loose to the ground using short, smooth moves.		
10	Listen for the maximum signal to find the general location of the pipe.		
Pinpoint and Mark the Pipe			
11	Hold the receiver face-up in a horizontal position.		
12	Adjust the sensitivity control to **medium** or **high**.		
13	Sweep the receiver back and forth over the general location, perpendicular to the pipe.		
14	Find the null and mark its location according to Company policy.		
Comments: (see reverse)			

Participant Name: _____ **I.D. Number:** _____

Test Date: _____ **Location:** _____

Evaluation: ☐ **Qualified** ☐ **Not Qualified**

_____ _____

Qualified Observer Signature Participant Signature

Competency/skill: 3.3 Locate facilities using the inductive method (two persons)

Qualified observer instructions:

1. For the performance steps below, observe the participant and check "Go" for successful completion of the step **or** "No Go" if remediation of the step is required.
2. A "No Go" rating on any of the steps constitutes a "No Go" for the entire performance skill. Performance skills must be completed with 100% accuracy.
3. Both the individual taking the performance evaluation and the qualified observer must sign this form upon completion of the evaluation.

Performance Step Analysis		Go	No Go
Position the Transmitter			
1	Start with the receiver and transmitter at least 30` apart.		
2	Keep the units parallel and walk toward the pipe.		
3	Set receiver down at the spot where the signal is the strongest and direct the second person to move transmitter back and forth to fine tune the signal.		
4	When the signal is strongest, place the transmitter on the ground in a vertical position parallel to and directly above the pipe.		
Locate the pipe			
5	Sweep the receiver back and forth over the pipe, close to ground, using short, smooth moves with receiver parallel to transmitter and vertical.		
6	Listen for the maximum volume of the signal.		
Pinpoint and mark the pipe			
7	Hold the receiver face-up in a horizontal position.		
8	Adjust the sensitivity control to **medium** or **high**.		
9	Sweep the receiver back and forth over the general location, perpendicular to the pipe.		
10	Find the null and mark its location according to Company policy.		
Comments:			

Participant Name: _____ **I.D. Number:** _____

Test Date: _____ **Location:** _____

Evaluation: ☐ **Qualified** ☐ **Not Qualified**

_____ _____

Qualified Observer Signature Participant Signature

Competency/skill: 3.4 Determining depth through triangulation

Qualified observer instructions:

1. For the performance steps below, observe the participant and check "Go" for successful completion of the step **or** "No Go" if remediation of the step is required.
2. A "No Go" rating on any of the steps constitutes a "No Go" for the entire performance skill. Performance skills must be completed with 100% accuracy.
3. Both the individual taking the performance evaluation and the qualified observer must sign this form upon completion of the evaluation.

Performance Step Analysis		**Go**	**No Go**
Triangulate the pipe			
1	Set the sensitivity control on the receiver to **medium** or **high**.		
2	Hold the receiver as close to the ground as possible at a 45^0 angle (check the depth level indicator on the receiver).		
3	Begin directly above the pipe and move the receiver slowly, at a right angle, away from the pipe.		
4	At the null, mark the spot directly below the center of the receiver.		
Calculate the depth			
5	Measure the distance from this mark to the mark for the pinpointed center of the pipe.		
6	Subtract the distance from the center of the receiver to the ground.		
7	Correctly state the approximate pipe depth.		
8	Document according to Company procedures.		
Comments:			

Participant Name: _____ **I.D. Number:** _____

Test Date: _____ **Location:** _____

Evaluation: ☐ **Qualified** ☐ **Not Qualified**

_____ _____

Qualified Observer Signature Participant Signature

Competency/skill: 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		
9			
Comments:			

Participant Name: _____ **I.D. Number:** _____

Test Date: _____ **Location:** _____

Evaluation: ☐ **Qualified** ☐ **Not Qualified**

_____ _____

Qualified Observer Signature Participant Signature

Competency/skill: 5.4 Electronic gas detectors

Qualified observer instructions:

1. For the performance steps below, observe the participant and check "Go" for successful completion of the step **or** "No Go" if remediation of the step is required.
2. A "No Go" rating on any of the steps constitutes a "No Go" for the entire performance skill. Performance skills must be completed with 100% accuracy.
3. Both the individual taking the performance evaluation and the qualified observer must sign this form upon completion of the evaluation.

Performance Step Analysis		**Go**	**No Go**
Start Up / Shut Down			
1	Turn on power / Allow for warm up		
2	Check battery power		
3	Set zero in fresh air		
4	Test gas in L.E.L. mode		
5	Test gas in U.E.L. mode		
6	Purge in fresh air		
7	Shut down		
8	Store in proper containment		
9			
Comments:			

Participant Name: _____ **I.D. Number:** _____

Test Date: _____ **Location:** _____

Evaluation: ☐ **Qualified** ☐ **Not Qualified**

_____ _____

Qualified Observer Signature Participant Signature

Competency/skill: 5.5 Flame ionization

Qualified observer instructions:

1. For the performance steps below, observe the participant and check "Go" for successful completion of the step **or** "No Go" if remediation of the step is required.
2. A "No Go" rating on any of the steps constitutes a "No Go" for the entire performance skill. Performance skills must be completed with 100% accuracy.
3. Both the individual taking the performance evaluation and the qualified observer must sign this form upon completion of the evaluation.

Performance Step Analysis		**Go**	**No Go**
Visual inspection and filter change			
1	Visually inspect the FI unit to detect any damage or flaws.		
2	Check the intake cone filter. Install a new filter so that it is properly seated according to manufacturers and Company specifications.		
3	Check the in-line filter. Install a new filter so that it is properly seated according to manufacturers and Company specifications.		
4	Check the probe. Clean if dirty.		
Refueling			
5	Connect the FI unit to the fuel supply tank.		
6	Fill the FI unit fuel tanks to the proper level.		
7	Safely disconnect the FI unit from the fuel supply, ensuring that all connections are appropriately closed.		
Calibrating			
8	Make sure that the FI unit has been tested for accuracy.		
9	Turn the FI unit **POWER** and the **IGNITION** to **ON**.		
10	Set the **SENSITIVITY** to **50 PPM**.		
11	Hold the sensor head (intake cone) over the test cup of the certified 50 ppm gas sample.		
12	Turn the 50 ppm gas sample **ON** at **MINIMUM** flow.		
13	Watch the needle on the FI unit for full deflection.		
14	If the needle does not reach full deflection in 3 seconds, report the unit according to Company policy.		
Comments: (see reverse)			

Participant Name: _____ **I.D. Number:** _____

Test Date: _____ **Location:** _____

Evaluation: ☐ **Qualified** ☐ **Not Qualified**

_____ _____

Qualified Observer Signature Participant Signature

Competency/skill: 5.6 Bar hole testing and purging

Qualified observer instructions:

1. For the performance steps below, observe the participant and check "Go" for successful completion of the step **or** "No Go" if remediation of the step is required.
2. A "No Go" rating on any of the steps constitutes a "No Go" for the entire performance skill. Performance skills must be completed with 100% accuracy.
3. Both the individual taking the performance evaluation and the qualified observer must sign this form upon completion of the evaluation.

Performance Step Analysis		Go	No Go
1	Make bar holes at 10' intervals		
2	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		
8			
9			
Comments:			

Participant Name: _____ **I.D. Number:** _____

Test Date: _____ **Location:** _____

Evaluation: ☐ **Qualified** ☐ **Not Qualified**

_____ _____

Qualified Observer Signature Participant Signature

Competency/skill: 7.5 Operating thermite welder

Qualified observer instructions:

1. For the performance steps below, observe the participant and check "Go" for successful completion of the step **or** "No Go" if remediation of the step is required.
2. A "No Go" rating on any of the steps constitutes a "No Go" for the entire performance skill. Performance skills must be completed with 100% accuracy.
3. Both the individual taking the performance evaluation and the qualified observer must sign this form upon completion of the evaluation.

Performance Step Analysis		Go	No Go
Preparing the pipe			
1	Place fire extinguisher upwind.		
2	Put on personal protective equipment including gloves and eye protection.		
3	Remove coating from 3" x 3" area at weld location.		
4	Use wire brush and file to clean pipe to shiny metal.		
Preparing the wire			
5	Strip 2" insulation from wire.		
6	Scrape, file, or sand the bare end clean.		
7	Crimp copper sleeve on wire.		
8	Wrap wire around pipe and twist it.		
9	Inspect mold for defects and correct size.		
10	Place steel disk in mold.		
11	Place welding and starting powder into the mold.		
Preparing the mold			
12	Place mold on pipe at prepared location.		
13	Insert wire in mold.		
14	Set the mold with wire parallel to the pipe.		
15	Hold mold firmly		
16	Ignite with sparking gun.		
17	Tape to test weld.		
Making the weld			
18	Repair coating.		
Comments: (see reverse)			

Participant Name: _____ **I.D. Number:** _____

Test Date: _____ **Location:** _____

Evaluation: ☐ **Qualified** ☐ **Not Qualified**

_____ _____

Qualified Observer Signature Participant Signature

Competency/skill: 7.8 Steel and cast iron repair fittings

Qualified observer instructions:

1. For the performance steps below, observe the participant and check "Go" for successful completion of the step **or** "No Go" if remediation of the step is required.
2. A "No Go" rating on any of the steps constitutes a "No Go" for the entire performance skill. Performance skills must be completed with 100% accuracy.
3. Both the individual taking the performance evaluation and the qualified observer must sign this form upon completion of the evaluation.

Performance Step Analysis		Go	No Go
1	Check atmosphere in bell hole.		
2	Check pipe condition for replacement.		
3	Clean coating and other foreign material adequately.		
4	Lubricate gasket material.		
5	Torque bolts in proper sequence.		
6	Check for leaks/other damage.		
7	Properly coat before backfilling.		
Comments:			

Participant Name: _____ **I.D. Number:** _____

Test Date: _____ **Location:** _____

Evaluation: ☐ **Qualified** ☐ **Not Qualified**

_____ _____

Qualified Observer Signature Participant Signature

Competency/skill: 7.11 Plastic pipe joining (fusion)

Qualified observer instructions:

1. For the performance steps below, observe the participant and check "Go" for successful completion of the step **or** "No Go" if remediation of the step is required.
2. A "No Go" rating on any of the steps constitutes a "No Go" for the entire performance skill. Performance skills must be completed with 100% accuracy.
3. Both the individual taking the performance evaluation and the qualified observer must sign this form upon completion of the evaluation.

Performance Step Analysis		Go	No Go
1	Butt fusion / visual		
2	Side wall fusion / visual		
3	Butt fusion / strap test		
4	Sidewall fusion / strap test		
5			
6			
7			
8			
9			
Comments:			

Participant Name: _____ **I.D. Number:** _____

Test Date: _____ **Location:** _____

Evaluation: ☐ **Qualified** ☐ **Not Qualified**

_____ _____

Qualified Observer Signature Participant Signature

Competency/skill: 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**

_____ _____

Qualified Observer Signature Participant Signature

Competency/skill: 7.15 Steel pipe joining by mechanical couplings

Qualified observer instructions:

1. For the performance steps below, observe the participant and check "Go" for successful completion of the step **or** "No Go" if remediation of the step is required.
2. A "No Go" rating on any of the steps constitutes a "No Go" for the entire performance skill. Performance skills must be completed with 100% accuracy.
3. Both the individual taking the performance evaluation and the qualified observer must sign this form upon completion of the evaluation.

Performance Step Analysis		Go	No Go
Prepare coupling and pipe			
1	Disassemble, if necessary, and soap gaskets and pipe ends.		
2	Clean the pipe ends thoroughly. (Remove all wrapping, oil, loose scale, rust, cutter burrs and anything else that could prevent gasket seating.)		
3	Place end nuts, retainer cups, and soapy gaskets on the pipe ends. (Line up the pipe ends, leaving at least 1/4 " gap.)		
Install coupling			
4	Measure the coupling body to 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:** _____

Evaluation: ☐ **Qualified** ☐ **Not Qualified**

_____ _____

Qualified Observer Signature Participant Signature

Competency/skill: 7.20 Tapping and stopping steel pipe 1" through 4"

Qualified observer instructions:

1. For the performance steps below, observe the participant and check "Go" for successful completion of the step **or** "No Go" if remediation of the step is required.
2. A "No Go" rating on any of the steps constitutes a "No Go" for the entire performance skill. Performance skills must be completed with 100% accuracy.
3. Both the individual taking the performance evaluation and the qualified observer must sign this form upon completion of the evaluation.

Performance Step Analysis		Go	No Go
1	Install fitting to pipe		
2	Set up tapping machine		
3	Install valve / tapping machine		
4	Make tap through pipe		
5	Remove machine / close valve		
6	Set up and install stop in machine		
7	Perform stop in pipe		
8	Remove stop		
9	Install completion plug and wrap pipe		
Comments:			

Participant Name: _____ **I.D. Number:** _____

Test Date: _____ **Location:** _____

Evaluation: ☐ **Qualified** ☐ **Not Qualified**

_____ _____

Qualified Observer Signature Participant Signature

Competency/skill: 7.21 Tapping and stopping steel pipe 6” through 8”

Qualified observer instructions:

1. For the performance steps below, observe the participant and check “Go” for successful completion of the step **or** “No Go” if remediation of the step is required.
2. A “No Go” rating on any of the steps constitutes a “No Go” for the entire performance skill. Performance skills must be completed with 100% accuracy.
3. Both the individual taking the performance evaluation and the qualified observer must sign this form upon completion of the evaluation.

Performance Step Analysis		Go	No Go
1	Install fitting to pipe		
2	Set up tapping machine		
3	Install valve / tapping machine		
4	Make tap through pipe		
5	Remove machine / close valve		
6	Set up and install stop in machine		
7	Perform stop in pipe		
8	Remove stop		
9	Install completion plug and wrap pipe		
Comments:			

Participant Name: _____ **I.D. Number:** _____

Test Date: _____ **Location:** _____

Evaluation: ☐ **Qualified** ☐ **Not Qualified**

_____ _____

Qualified Observer Signature Participant Signature

Competency/skill: 7.22 Tapping 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:** _____

Evaluation: ☐ **Qualified** ☐ **Not Qualified**

_____ _____

Qualified Observer Signature Participant Signature

Competency/skill: 8.1 Operating backhoe

Qualified observer instructions:

1. For the performance steps below, observe the participant and check "Go" for successful completion of the step **or** "No Go" if remediation of the step is required.
2. A "No Go" rating on any of the steps constitutes a "No Go" for the entire performance skill. Performance skills must be completed with 100% accuracy.
3. Both the individual taking the performance evaluation and the qualified observer must sign this form upon completion of the evaluation.

Performance Step Analysis		Go	No Go
1	Check fluid levels		
2	Visual check of tires		
3	Visual check of outriggers		
4	Visual check of levers / controls		
5	Start up procedures		
6	Proper positioning of machine		
7	Operate control levers		
8	Proper placement of dirt		
9	Shut down procedures		
Comments:			

Participant Name: _____ **I.D. Number:** _____

Test Date: _____ **Location:** _____

Evaluation: ☐ **Qualified** ☐ **Not Qualified**

_____ _____

Qualified Observer Signature Participant Signature

Competency/skill: 8.2 Operating trenchers

Qualified observer instructions:

1. For the performance steps below, observe the participant and check “Go” for successful completion of the step **or** “No Go” if remediation of the step is required.
2. A “No Go” rating on any of the steps constitutes a “No Go” for the entire performance skill. Performance skills must be completed with 100% accuracy.
3. Both the individual taking the performance evaluation and the qualified observer must sign this form upon completion of the evaluation.

Performance Step Analysis		Go	No Go
1	Visual inspection		
2	Check fluid levels		
3	Check safety locks		
4	Start up procedures		
5	Proper placement of trencher		
6	Engage digger chain		
7	Lower boom to proper depth		
8	Engage forward motion		
9	Shut down procedures		
Comments:			

Participant Name: _____ **I.D. Number:** _____

Test Date: _____ **Location:** _____

Evaluation: ☐ **Qualified** ☐ **Not Qualified**

_____ _____

Qualified Observer Signature Participant Signature

Competency/skill: 8.3 Operating boring equipment

Qualified observer instructions:

1. For the performance steps below, observe the participant and check "Go" for successful completion of the step **or** "No Go" if remediation of the step is required.
2. A "No Go" rating on any of the steps constitutes a "No Go" for the entire performance skill. Performance skills must be completed with 100% accuracy.
3. Both the individual taking the performance evaluation and the qualified observer must sign this form upon completion of the evaluation.

Performance Step Analysis		Go	No Go
1	Visual inspection		
2	Check fluid levels		
3	Start up procedures		
4	Engage boring rod		
5	Proper angle 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		
10			
11			
Comments:			

Participant Name: _____ **I.D. Number:** _____

Test Date: _____ **Location:** _____

Evaluation: ❑ **Qualified** ❑ **Not Qualified**

_____ _____

Qualified Observer Signature Participant Signature

Competency/skill: 10.6 Holiday detection (coating inspection)

Qualified observer instructions:

1. For the performance steps below, observe the participant and check "Go" for successful completion of the step **or** "No Go" if remediation of the step is required.
2. A "No Go" rating on any of the steps constitutes a "No Go" for the entire performance skill. Performance skills must be completed with 100% accuracy.
3. Both the individual taking the performance evaluation and the qualified observer must sign this form upon completion of the evaluation.

Performance Step Analysis		Go	No Go
1	Visual inspection of machine		
2	Check voltage settings		
3	Install proper spring collar		
4	Pipe properly grounded		
5	Placement of transmitter ground		
6	Turn machine on		
7	Travel speed		
8	Recognition of defects		
9			
Comments:			

Participant Name: _____ **I.D. Number:** _____

Test Date: _____ **Location:** _____

Evaluation: ☐ **Qualified** ☐ **Not Qualified**

_____ _____

Qualified Observer Signature Participant Signature

Competency/skill: 10.7 Painting and jacketing above ground facilities

Qualified observer instructions:

1. For the performance steps below, observe the participant and check "Go" for successful completion of the step **or** "No Go" if remediation of the step is required.
2. A "No Go" rating on any of the steps constitutes a "No Go" for the entire performance skill. Performance skills must be completed with 100% accuracy.
3. Both the individual taking the performance evaluation and the qualified observer must sign this form upon completion of the evaluation.

Performance Step Analysis		Go	No Go
1	Remove all loose paint and particles.		
2	Mask all regulator vents.		
3	Mask all di-electric fittings.		
4	Mask index glass.		
5	Mask all required identification tags.		
6	Paint all exposed metal.		
Comments:			

Participant Name: _____ **I.D. Number:** _____

Test Date: _____ **Location:** _____

Evaluation: ☐ **Qualified** ☐ **Not Qualified**

_____ _____

Qualified Observer Signature Participant Signature

Competency/skill: 11.1 Operating and maintaining a differential odorant system

Qualified observer instructions:

1. For the performance steps below, observe the participant and check "Go" for successful completion of the step **or** "No Go" if remediation of the step is required.
2. A "No Go" rating on any of the steps constitutes a "No Go" for the entire performance skill. Performance skills must be completed with 100% accuracy.
3. Both the individual taking the performance evaluation and the qualified observer must sign this form upon completion of the evaluation.

Performance Step Analysis		Go	No Go
1	Close valves in proper sequence.		
2	Bleed off pressure in appropriate manner.		
3	Refill odorant tank properly.		
4	Slowly open valves in proper sequence.		
5	Accurately document amount of odorant used.		
Comments:			

Participant Name: _____ **I.D. Number:** _____

Test Date: _____ **Location:** _____

Evaluation: ☐ **Qualified** ☐ **Not Qualified**

_____ _____

Qualified Observer Signature Participant Signature

Competency/skill: 11.2 Operating and maintaining an injection odorant system

Qualified observer instructions:

1. For the performance steps below, observe the participant and check "Go" for successful completion of the step **or** "No Go" if remediation of the step is required.
2. A "No Go" rating on any of the steps constitutes a "No Go" for the entire performance skill. Performance skills must be completed with 100% accuracy.
3. Both the individual taking the performance evaluation and the qualified observer must sign this form upon completion of the evaluation.

Performance Step Analysis		Go	No Go
1	Close valves in proper sequence.		
2	Refill odorant tank properly.		
3	Reopen valves in proper sequence.		
4	Check for air/lock.		
5	Accurately document amount of odorant used.		
6	Check for filter saturation.		
Comments:			

Participant Name: _____ **I.D. Number:** _____

Test Date: _____ **Location:** _____

Evaluation: ☐ **Qualified** ☐ **Not Qualified**

_____ _____

Qualified Observer Signature Participant Signature

Competency/skill: 11.3 Testing odorant level

Qualified observer instructions:

1. For the performance steps below, observe the participant and check "Go" for successful completion of the step **or** "No Go" if remediation of the step is required.
2. A "No Go" rating on any of the steps constitutes a "No Go" for the entire performance skill. Performance skills must be completed with 100% accuracy.
3. Both the individual taking the performance evaluation and the qualified observer must sign this form upon completion of the evaluation.

Performance Step Analysis		Go	No Go
1	Select appropriate test sites.		
2	Purge machine before use.		
3	Season machine.		
4	Test for odorant level in smooth controlled motions.		
5	Record readings accurately.		
6	Purge machine before turning off.		
Comments:			

Participant Name: _____ **I.D. Number:** _____

Test Date: _____ **Location:** _____

Evaluation: ❑ **Qualified** ❑ **Not Qualified**

_____ _____

Qualified Observer Signature Participant Signature

Competency/skill: 12.2 Inspecting pressure regulating and limiting stations

Qualified observer instructions:

1. For the performance steps below, observe the participant and check "Go" for successful completion of the step **or** "No Go" if remediation of the step is required.
2. A "No Go" rating on any of the steps constitutes a "No Go" for the entire performance skill. Performance skills must be completed with 100% accuracy.
3. Both the individual taking the performance evaluation and the qualified observer must sign this form upon completion of the evaluation.

Performance Step Analysis		Go	No Go
1	Visually inspect regulator/relief/piping.		
2	Ensure all valves are operating properly.		
3	Test diaphragm assembly vent and all other pipes for leaks.		
4	Inspect all filters.		
5	Test to determine if regulator will lockup. (If lock-up is not achieved; physical inspection of orifice and seat will have to be performed and replaced if needed.)		
6	Test to ensure regulator will open full.		
7	If there is a monitor regulator check, set pressure. Check for lockup.		
8	If there is a relief valve, check for set pressure and test for operating performance.		
9	Ensure all valves are returned to normal operating positions.		
Comments:			

Participant Name: _____ **I.D. Number:** _____

Test Date: _____ **Location:** _____

Evaluation: ☐ **Qualified** ☐ **Not Qualified**

_____ _____

Qualified Observer Signature Participant Signature

Competency/skill: 12.3 Inspecting and maintaining key valves

Qualified observer instructions:

1. For the performance steps below, observe the participant and check "Go" for successful completion of the step **or** "No Go" if remediation of the step is required.
2. A "No Go" rating on any of the steps constitutes a "No Go" for the entire performance skill. Performance skills must be completed with 100% accuracy.
3. Both the individual taking the performance evaluation and the qualified observer must sign this form upon completion of the evaluation.

Performance Step Analysis		Go	No Go
Lubricating valves			
1	Correctly attach lubricating device to the valve.		
2	Apply lubrication without over lubricating.		
3	Correctly detach the lubricating device and clean the lubrication point.		
Operating valves			
4	Check to see if valve is open or closed.		
5	Aware of section valve controls.		
6	Check size of valve.		
7	Correctly attach wrench to valve.		
8	Turn valve correctly.		
9	Return valve to normal operating position.		
Comments:			

Participant Name: _____ **I.D. Number:** _____

Test Date: _____ **Location:** _____

Evaluation: ☐ **Qualified** ☐ **Not Qualified**

_____ _____

Qualified Observer Signature Participant Signature

Competency/skill: 13.1 Operating peak shaving plant (propane/air mixture/injection): Pre-start-up procedures

Qualified observer instructions:

1. For the performance steps below, observe the participant and check "Go" for successful completion of the step **or** "No Go" if remediation of the step is required.
2. A "No Go" rating on any of the steps constitutes a "No Go" for the entire performance skill. Performance skills must be completed with 100% accuracy.
3. Both the individual taking the performance evaluation and the qualified observer must sign this form upon completion of the evaluation.

Performance Step Analysis		Go	No Go
1	Operating valves		
2	Operating electric control panel		
3	Adjusting temperature on vaporizer		
4	Adjust injection pressure (Foxboro controller)		
5	Operating compressor		
6	Operating the specific gravity controller (Usually Ranarex controller)		
7	Operate Bunson burner (If equipped)		
8	Inspect gauges, charts for stabilization		
9			
Comments:			

Participant Name: _____ **I.D. Number:** _____

Test Date: _____ **Location:** _____

Evaluation: ☐ **Qualified** ☐ **Not Qualified**

_____ _____

Qualified Observer Signature Participant Signature

Competency/skill: 13.2 Operating peak shaving plant (propane/air mixture/injection): Start-up/operating procedures/shut down

Qualified observer instructions:

1. For the performance steps below, observe the participant and check "Go" for successful completion of the step **or** "No Go" if remediation of the step is required.
2. A "No Go" rating on any of the steps constitutes a "No Go" for the entire performance skill. Performance skills must be completed with 100% accuracy.
3. Both the individual taking the performance evaluation and the qualified observer must sign this form upon completion of the evaluation.

Performance Step Analysis		Go	No Go
Accordance with operators manual for specific equipment used			
1			
2			
3			
4			
5			
6			
7			
8			
9			
Comments:			

Participant Name: _____ **I.D. Number:** _____

Test Date: _____ **Location:** _____

Evaluation: ☐ **Qualified** ☐ **Not Qualified**

_____ _____

Qualified Observer Signature Participant Signature

Competency/skill:

Qualified observer instructions:

1. For the performance steps below, observe the participant and check “Go” for successful completion of the step **or** “No Go” if remediation of the step is required.
2. A “No Go” rating on any of the steps constitutes a “No Go” for the entire performance skill. Performance skills must be completed with 100% accuracy.
3. Both the individual taking the performance evaluation and the qualified observer must sign this form upon completion of the evaluation.

Performance Step Analysis		Go	No Go
1			
2			
3			
4			
5			
6			
7			
8			
9			
Comments:			

Participant Name: _____ **I.D. Number:** _____

Test Date: _____ **Location:** _____

Evaluation: ☐ **Qualified** ☐ **Not Qualified**

_____ _____

Qualified Observer Signature Participant Signature

WRITTEN EVALUATION OF COMPETENCIES AND SKILLS

Division 6 of the Operator Qualification Program may contain copies of tests used in the written evaluation and qualification competencies and skills necessary to perform tasks on gas systems. Copies of examination instruments are generally not included, where qualification is certified by an outside training organization.

TRAINING MATERIALS

Division 7 of the Operator Qualification Program may contain attachments describing course descriptions or outlines, lesson plans, and other materials used to prepare personnel for qualification through this program. For example, a brochure describing a welder qualification workshop could be retained in this division to document the operator's efforts to provide training in required competencies and skills.

When communication of change, when using the "Notice of Change" form is completed, file in Division 7.

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

COURSE DESCRIPTIONS AND PREREQUISITES FOR MIDWEST ENERGY TRAINING MODULES

The following is a copy of Appendix B of the Midwest Energy Association's (A.K.A. Midwest Gas Association) *Operator Qualification Training Program Course Management Plan.* The appendix describes the training modules offered by Midwest Energy Association. The Iowa Association of Municipal Utilities through an agreement with Midwest Energy Association reproduces the copyrighted material.

(Protocol 4.02 §192.803/195.503)

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, l02, 103
Description: Recognizing and reporting leaks and potential leaks encountered during the normal course of daily activity. Topics include: recognizing leaks by sight, sound, and smell; recognizing leak conditions such as tampering and meter damage; reporting leaks according to whether or not they constitute an immediate danger; ensuring customer and employee safety.

Module Number: 111 **Title:** 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, 103, 104, 201, 202
Description: Unsafe meter sets as a possible cause of leaks or failure. Topics include misaligned meter sets; improper location; burial and overbuilding; corrosion; physical damage.

Module Number: 221 **Title**: Leak Classification
Prerequisites: 101, 102, 103, 104
Description: DOT leak classification requirements. Topics include: definitions of Grade 1, 2, and 3 leaks; guidelines for assigning leak grades; response to leaks; follow-up; documentation.

Module Number: 231 **Title:** Operating the Combustible Gas Indicator
Prerequisite: 101, 102, 103, 104, 221
Description: Introduction to operation and maintenance of the CGI. Topics include: CGI unit parts and function; pre-operation tests of the CGI unit; operation of the CGI unit in the field; documentation.

Module Number: 232 **Title:** Operating the Flame Ionization Unit
Prerequisite: 101, 102, 103, 104, 221
Description: Introduction to operation and maintenance of the FI unit. Topics include FI unit parts and function; pre-operation inspection and testing of the FI unit; field operation of the FI unit for walking and mobile surveys; documentation.

Module Number: 241 **Title:** Carbon Monoxide (CO) Testing
Prerequisites: 101, 102, 103, 104
Description: Introduction to CO testing. Topics include: recognizing the effects of CO gas on human beings; identifying situations that require CO testing; CO testing using indicator tubes and electronic CO monitors; actions to take when CO is detected; documentation.

Module Number: 244 **Title:** Emergency Response and Restoration of Service
Prerequisites: 101, 102, 103, 104, 131, 221
Description: Basic responses to emergency situations and information about restoration of service. Topics include: Identifying company procedures for reporting to state/federal authorities. Identify components of an effective repair plan, system mapping and isolation points, repair plan, and methods for reestablishing service after shut down.

Module Number: 251 **Title:** Odorization
Prerequisites: 101, 102, 103, 104
Description: Requirements and procedures for odorizing gas and testing odorant levels. Topics include: factors affecting sufficient odorization; odorization equipment testing; odorization equipment maintenance; testing for odorization levels; documentation.

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
Prerequisites: 101, 102, 103, 104
Description: Establishing proper gas inlet pressure. Topics include: pressure measurement instruments, including bourdon tubes, manometers, and electronic gauges; procedure for checking inlet pressure; problems associated with under pressurization and over-pressurization; calculating desired and actual gas flow.

Module Number: 322 **Title:** Establishing and Disconnecting Gas
Prerequisites: 101, 102, 103, 104, 272, 311, 312, 313, 321
Description: Requirements and procedures for establishing and disconnecting customer gas service. Topics include: verification of requesting location; piping and appliance checks; meter and regulator checks including low-flow and shut-in tests; purging and light-up procedures; disconnection of service; read over or succession; meter removal; documentation.

Module Number: 324 **Title:** Lighting Appliances
Prerequisites: 101, 102, 103, 104, 311, 312, 313, 321
Description: Performing purging and lighting on all types of residential gas appliances. Topics include: purging process and conditions requiring its use; identifying the three types of purging methods.

Module Number: 401 **Title:** Job Site Protection
Prerequisites: 101, 102, 103, 104
Description: Protection of job site for public and employee safety. Topics include: types of traffic control and protection devices and signs; placement of job site protection devices.

Module Number: 402 **Title:** Locating and Marking Facilities
Prerequisite: 101, 102, 103, 104, 401
Description: Use of the pipe locator to find and mark underground facilities. Topics include: pipe locator parts and operation; equipment check-out; direct requests and the one-call system; field markings of gas and other facilities; conductive locating procedure: inductive locating procedure; pinpoint centering of pipe; triangulation of pipe depth; permanent and temporary signs and markers.

Module Number: 403 **Title:** Backhoe Safety
Prerequisite: 101, 102, 103, 104, 401
Description: Basic safety principles for working with or around backhoes. Topics include: safe back hoe service and maintenance; procedure for loading and unloading back hoe on or off trailer; safety procedures for working with backhoes at the job site.

Module Number: 404 **Title:** Excavation and Shoring Safety

Prerequisites: 101, 102, 103, 104, 402, 403
Description: Techniques and protection for safe excavation. Topics include: cave-in causes and results; cave-in prevention factors including soil classification, water, and other factors; cave-in protection measures including support systems, sloping, and shielding; additional excavation precautions.

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
Prerequisites: 101, 102, 103, 104, 411, 412
Description: Requirements, equipment, and procedures for pressure testing steel and plastic pipe. Topics include: facilities requiring pressure testing; DOT pressure testing requirements for transmission and distribution lines; pressure testing equipment; pressure testing procedure; documentation.

Module Number: 422 **Title:** Purging Safety
Prerequisite: 101, 102, 103, 104, 421
Description: Requirements and procedures for purging gas pipelines. Topics include: purging safety; purging with air; purging with natural gas; discharge venting; testing for complete purge.

Module Number: 431 **Title:** Cathodic Protection
Prerequisite: 101, 102, 103, 104, 422
Description: Introduction to corrosion prevention by cathodic protection. Topics include: fundamentals of corrosion; corrosion prevention measures; purpose and types of anodes; selection of anodes using soil resistivity; pipe-to-soil voltage measurement; anode installation; rectifiers; test stations; thermite welding procedures.

Module Number: 441 **Title:** Tapping/Stopping: 1.25" - 4" Pipe
Prerequisite: 101, 102, 103, 104, 404
Description: Operation of general and specialized tapping and stopping equipment Topics include: operation of bagging and stopping equipment; operation of T. D. Williamson and Mueller tapping equipment; operation of Rockford-Eclipse and Qualitech-Eclipse stopping equipment.

Module Number: 444 **Title:** Plastic Pipe Repair
Prerequisites: 101, 102, 103, 104, 111, 131, 401, 403, 404, 411, 422, 441

Description: Methods and procedures for repair of plastic pipe. Topics include: temporary repairs, squeeze tools, making permanent repairs, remove and replace damaged pipe.

Module Number: 451 **Title:** Installing Mains
Prerequisites: 101, 102, 103, 104, 431, 441
Description: Methods and procedures for installing steel and plastic pipe. Topics include: pipe handling and storage, trenching procedure, installing new mains by direct burial, plastic pipe insertion.

Module Number: 452 **Title:** Installing Service
Prerequisite: 101, 102, 103, 104, 451
Description: Methods and procedures for installing service lines. Topics include: review of service line terminology; service line materials; trenching; installing steel service lines; installing plastic service lines.

Module Number: 453 **Title:** Crossings
Prerequisite: 101, 102, 103, 104, 452
Description: Specific procedures for installing pipe across highway, rail, bridge, creek, and ravine crossings. Topics include: highway and railroad crossing procedures including licenses and permits, casings, boring, and depth of crossing; bridge crossing procedures including pipe expansion, support, and anchors; creek and ravine crossing procedures including trenching and protection.

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
Prerequisites: 101, 102, 103, 104, 261, 453, 461
Description: Requirements and procedures for maintaining, repairing, and replacing steel or cast iron mains. Topics include: identifying areas of greatest potential hazard; repair and replacement criteria; pressure reduction and shutdown prior to repair; inspection procedures for exposed steel mains; steel pipe repair methods; cast iron pipe repair methods; cast iron pipe protection.

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: 501 **Title:** Safe Vault Entry
Prerequisite: 101, 102, 103, 104, 122
Description: Procedures for entering and working safely in vaults. Topics include: actions to take before entry; atmospheric testing; vault entry PPE; vault entry procedures; required rescue equipment and procedures.

Module Number: 511 **Title:** Inspecting and Maintaining Valves
Prerequisites: 101, 102, 103, 104
Description: Introduction to valves, and to the requirements and procedures for their inspection and maintenance. Topics include: valve designs and components; emergency and non-emergency valves; DOT inspection and maintenance requirements; valve inspection and maintenance procedure; documentation.

Module Number: 512 **Title:** Inspecting Pressure Regulating & Limiting Stations
Prerequisites: 101, 102, 103, 104, 131, 501, 511
Description: DOT requirements for inspecting pressure regulating and limiting stations, and vaults that house them. Topics include: MAOP; kinds of regulators and over pressure protection devices (OPPD); inspection requirements and procedures for regulators and OPPDs; vault inspection requirements and procedures; documentation.

Module Number: 521 **Title:** System Uprating
Prerequisites: 101, 102, 103, 104, 261, 271, 463, 512
Description: Requirements and procedures for increasing system operating pressure Topics include: Uprating terminology including MAOP and SMYS; pipe and components; uprating decision factors; field uprating procedures; documentation.

APPENDIX 1

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

The OQ inspection form is organized around nine elements, including one for field verification. Each element has one or more associated protocol. Each protocol consists of 4 boxes: (1) a protocol number accompanied by the protocol subject or topic; (2) a protocol question(s) (sometimes followed by 'Verify" statements); (3) guidance topics; and (4) the relevant rule language. The protocol topics have been structured into `Protocol Question(s)" to guide inspectors through the OQ inspection process. Each protocol question is followed by "Guidance Topics." The guidance topics list characteristics that the regulator would typically expect to find in an effective OQ Program, and that are consistent with the intent of the regulatory language that accompanies each protocol. Some, all, or none of these characteristics may be appropriate depending on factors unique to each operator's OQ Program and pipeline assets. Operators should be prepared to demonstrate that their programs address each of these characteristics or to describe how their program will be effective in their absence.

Many of the protocol questions are followed by 'Verify" statements. These statements have been included because they can be directly traced to specific rule language. Therefore, compliance with each “verify” statement should be confirmed. Many “verify” statements (and protocol questions) are followed by a parenthetical statement that indicates that the statement or question is either "enforceable" or 'non-enforceable". If the “verify” statement or protocol question is listed as non-enforceable, the statement or question is not enforceable under the rule, but is nonetheless an important consideration for the operator.

OPERATOR INSPECTION-SPECIFIC INFORMATION

DATE:	
NAME OF OPERATOR:	
H.Q. ADDRESS	**COMPANY OFFICIAL:**
	NAME:
	TITLE:
	PHONE:
	FAX:

Persons Interviewed:	Titles:	Phone:

Pipeline	Subsidiary	I.D.	Interstate Miles	State	Intrastate Miles	Total Miles

EMPLOYEES IN PROGRAM (COMPANY)	(CONTRACTOR)

Compliance Inspection
Comprehensive Operator Qualification
Element 1

Document Program Plan, Implementing Procedures and Qualification Criteria

Scope:
This Element addresses the characteristics of the operator's OQ program and written plan, and considers how the operator developed its program, how contractors are considered when performing covered tasks, the treatment of abnormal operating conditions, and the function of training in the initial and continuing qualification of individuals performing covered tasks.

Protocol #1.01	**Application and Customization of "Off-the-Shelf" Programs**
Protocol Question	Does the operator's plan identify covered tasks and does it specify task-specific reevaluation intervals for individuals performing covered tasks? [**Enforceable]**

Guidance Topics

The rule requires that operators have a written qualification program that includes provisions to identify covered tasks and the intervals at which reevaluation of the individual's qualifications is needed. Investigation of the following characteristics is important to determine whether the requirements of the rule have been met:

1. The source of any off-the-shelf listing of covered tasks used by the operator;
2. The basis for the operator accepting or modifying any off-the-shelf listing of covered tasks;
3. Whether the operator has identified task-specific reevaluation intervals;
4. The basis for the task-specific reevaluation intervals.

Small Operator Guidance

A small operator should be able to provide a list of covered tasks performed on its system. Does the written qualification program identify each covered task performed on the operator's system?

Has the operator established re-evaluation intervals for each task? Are these intervals consistent with those of other operators? Small operators are likely to accept re-evaluation intervals developed by associations, consortia or other vendors.

Available Material/Information

1. Covered task list
2. Re-evaluation intervals for each covered task
3. Manual for Operations, Maintenance and Emergency Response.

Rule Requirement	§192.805/195.505 Each operator shall have and follow a written qualification program.
	The program shall include provisions to:
	(a) Identify covered tasks;
	(g) Identify those covered tasks and the intervals at which evaluation of the individual's qualifications is needed.

Inspection Summary		
	Process Implementation	

Protocol 1.01 Inspection Results		
		No Issues Identified
		Potential Issues Identified (explain in summary)
		Not Applicable (explain in summary)

Documents Reviewed:

Document Number	Rev.	Date	Document Title

1.01 Inspection Notes:

Protocol #1.02	**Contractor Qualification**
Protocol Question	Does the operator employ contractor organizations to provide individuals to perform covered tasks? If so, what are the methods used to qualify these individuals and how does the operator ensure that contractor individuals are qualified in accordance with the operator' s OQ program plan?
	Verify that the operator' s written program includes provisions that require all contractor and subcontractor individuals be evaluated and qualified prior to performing covered tasks, unless the covered task is performed by a non-qualified individual under the direction and observation of a qualified individual. **[Enforceable]**

Guidance Topics

The operator is responsible for ensuring that all individuals, whether employees or contractors, are qualified to perform covered tasks. Investigation of the following characteristics is important to determine whether the requirements of the rule have been met:

1. Methods have been approved by the operator to qualify contractor individuals to perform applicable covered tasks.
2. Provisions have been established and documented to ensure contractors are required to perform covered tasks consistent with the operator's requirements.
3. Provisions have been established and documented to ensure qualification program requirements are followed by contractors.
4. Provisions have been established and documented to ensure contractor individuals performing the operator' s covered tasks are qualified.
5. Provisions have been established and documented to ensure the availability and maintenance of qualification records for contractor individuals performing covered tasks for the operator.

Small Operator Guidance

Does the operator's written program include provisions to ensure that any contractor organizations used by the operator to perform covered tasks will have completed qualification of individuals prior to task performance?

Does the operator accept evaluations developed by its contractors or third parties? If yes, do these evaluations address the knowledge, skills abilities and AOC's required for the task? If contractor or other third party evaluations are accepted, operator should be able to produce copies of samples of each evaluation accepted for any covered task within a reasonable # of days. The operator should be able to demonstrate that the evaluations it is accepting address the same or equivalent knowledge, skills and abilities and abnormal operating conditions as the operator's own evaluations for the covered task.

Available Material/Information

1. Written operator qualification plan
2. Sample evaluations from contractors and other 3rd parties accepted by the operator for any task

Rule Requirement	§192.803/195.503 Qualified means that an individual has been evaluated and can: (a) Perform assigned covered tasks; and (b) Recognize and react to abnormal operating conditions.
	§192.805/195.505 Each operator shall have and follow a written qualification program. The program shall include provisions to: (b) Ensure through evaluation that individuals performing covered tasks are qualified;

Inspection Summary		
	Process Implementation	

Protocol 1.02 Inspection Results		
		No Issues Identified
		Potential Issues Identified (explain in summary)
		Not Applicable (explain in summary)

Documents Reviewed:

Document Number	Rev.	Date	Document Title

1.02 Inspection Notes:

Protocol #1.03	**Management of Other Entities Performing Covered Tasks**
Protocol Question	Has the operator' s OQ program included provisions that require individuals from any other entity performing covered task(s) on behalf of the operator (e.g., through mutual assistance agreements) be evaluated and qualified prior to task performance?
	Verify that other entities that perform covered task(s) on behalf of the operator are addressed under the operator' s OQ program and that individuals from such other entities performing covered tasks on behalf of the operator are evaluated and qualified consistent with the operator' s program requirements. **[Enforceable]**

Guidance Topics
The rule requires that individuals performing covered tasks are evaluated and qualified to the requirements of the operator' s program. This applies to operator employees, contractors hired by the operator, or agents such as another entity that perform the covered tasks. Investigation of the following characteristics is important to determine whether the requirements of the rule have been met:

1. The operator either (a) identifies provisions for assessing the evaluation criteria and methods used by other entities performing covered tasks to qualify an individual and to determine if the qualification is consistent with operator requirements, or (b) requires these individuals to be reevaluated.

Small Operator Guidance

If the operator is party to any mutual aid agreements, has the operator determined whether individuals borrowed from the other operators are qualified if they are to perform covered tasks? The operator should be able to demonstrate that the evaluations administered by the other operators address the knowledge, skills and abilities and AOC's that the operator addresses in its own evaluations for the covered task.

Available Material/Information

1. Samples of evaluations from other operators accepted by the operator for any task

Rule Requirement	§192.803/195.503 Definitions *Qualified* means that an individual has been evaluated and can: (a) Perform assigned covered tasks; and (b) Recognize and react to abnormal operating conditions.

Inspection Summary		
	Process Implementation	

Protocol 1.03 Inspection Results		
		No Issues Identified
		Potential Issues Identified (explain in summary)
		Not Applicable (explain in summary)

Documents Reviewed:

Document Number	Rev.	Date	Document Title

1.03 Inspection Notes:

Protocol #1.04	**Training Requirements (Initial Qualification, Remedial if Initial Failure, and Reevaluation)**
Protocol Question	Does the operator' s OQ program plan contain policy and criteria for the use of training in initial qualification of individuals performing covered tasks, and are criteria in existence for re-training and re-evaluation of individuals if qualifications are questioned? [Non **Enforceable]**

Guidance Topics

Training is not a required action under the provisions of the OQ rule. However, training is a means to ensure that an individual performing a covered task has the necessary knowledge and skills needed to perform the task in a manner that ensures the safe operation of pipeline facilities, as required by the Pipeline Safety Act. As such, it should be incorporated in practices leading to the development and qualification of new employees, as well as in refreshing the knowledge and skills of individuals with considerable experience. Investigation of the following characteristics is important to determine whether the requirements of the rule have been met:

The role represented by training in the qualification of individuals to perform covered tasks in:

- Development of new hires,
- Correction of problems encountered in evaluation or reevaluation processes,
- Correction of individual performance problems (e.g., contributing to an incident or accident through performance of covered tasks),
- Managing changes in practices or procedures used in performing covered tasks.

Small Operator Guidance

The operator should be prepared to identify resources it uses to provide training to new employees or existing employees if necessary? This may include lists of courses offered in-house or by 3rd parties, (e.g. training entities, training providers, outside sources) as necessary. Any lesson plans, criteria for completion, etc for OJT training should be available for review. The operator should be prepared to discuss how it identifies and addresses the need for re-evaluation of its personnel should their qualifications become suspect.

Available Material/Information

Training might include in-house, 3rd party or on-the-job training. For any of these types of training:

1. List of the types of training
2. Outlines of the classes
3. Lesson Plans
4. Criteria for completion
5. Evaluation Methods

Rule Requirement	§ 192.803/195.503 Definitions
	Qualified means that an individual has been evaluated and can:
	(a) Perform assigned covered tasks; and
	(b) Recognize and react to abnormal operating conditions.
	§ 192.805/195.505 Qualification Program
	Each operator shall have and follow a written qualification program. The program shall
	include provisions to:
	(b) Ensure through evaluation that individuals performing covered tasks are qualified;

Inspection Summary		
	Process Implementation	

Protocol 1.04 Inspection Results		**No Issues Identified**
		Potential Issues Identified (explain in summary)
		Not Applicable (explain in summary)

Documents Reviewed:

Document Number	Rev.	Date	Document Title

1.04 Inspection Notes:

Protocol #1.05	**Written Qualification Program**
Protocol Question	Did the operator meet the OQ Rule requirements for establishing a written operator qualification program and completing qualification of individuals performing covered tasks?
	Verify that the operator' s written qualification program was established by April 27, 2001. **[Enforceable]** Verify that the written qualification program identified all covered tasks for the operator' s operations and maintenance functions being conducted as of October 28, 2002. **[Enforceable]** Verify that the written qualification program established an evaluation method(s) to be used in the initial qualification of individuals performing covered tasks as of October 28, 2002. **[Enforceable]** Verify that all individuals performing covered tasks as of October 28, 2002, and not otherwise directed or observed by a qualified individual were qualified in accordance with the operator' s written qualification program. **[Enforceable]**

Guidance Topics

The rule requires that the operator meet certain prescriptive requirements for establishing a written qualification program, identifying covered tasks, and qualifying individuals to perform the identified covered tasks. Investigation of the following characteristics is important to determine whether the requirements of the rule have been met:

1. Clear responsibilities for implementing the elements of the program (e.g., evaluation & qualification, training, record keeping, contracting) have been established and communicated to managers and supervisors within the organization.
2. The OQ program requirements have been consistently implemented by the operator' s organization.
3. Key terms have been defined and provided to all entities involved in implementing the OQ program to avoid ambiguities and misinterpretations.

Small Operator Guidance

The operator (or the person responsible for its OQ plan, the "OQ manager") should be prepared to demonstrate knowledge and understanding of the provisions of its OQ Plan.~~?~~ The operator should be able to explain how each of the provisions of the OQ plan will be implemented.

Available Material/Information

If the operator has chosen an off the shelf program, the operator may need to consult with the provider of the program for explanations and justifications to explain the provisions of the program.

Available Material/Information

1. Written operator qualification plan

Rule Requirement	§192.809/195.509 General (a) Operators must have a written qualification program by April 27, 2001. (b) Operators must complete the qualification of individuals performing covered tasks by October 28, 2002.

Inspection Summary		
	Process Implementation	

Protocol 1.05 Inspection Results		
		No Issues Identified
		Potential Issues Identified (explain in summary)
		Not Applicable (explain in summary)

Documents Reviewed:

Document Number	Rev.	Date	Document Title

1.05 Inspection Notes:

Compliance Inspection
Comprehensive Operator Qualification
Element 2

Identify Covered Tasks and Related Evaluation Methods

Scope:
This Element addresses the operator' s development of its covered task list and the evaluation methods employed to perform qualification of individuals.

Protocol #2.01		**Development of Covered Task List**
Protocol Question		How did the operator develop its covered task list?
		Verify that the operator applied the four-part test to determine whether 49 CFR Part 192 or 49 CFR Part 195 O&M activities applicable to the operator are covered **tasks.[Enforceable]** Verify that the operator has identified and documented all applicable covered **tasks.[Enforceable]**

Guidance Topics

The rule requires that the operator identify covered tasks, which are those tasks covered by regulations that meet the four-part test set forth in the OQ rule. Investigation of the following characteristics is important to determine whether the requirements of the rule have been met:

1.	The method used by the operator to develop its covered task list was thorough, documented, and considered all tasks performed to meet applicable regulatory requirements by employees and contractors.
2.	The operator understands the personnel qualification-related activities that pose significant risk to the integrity of pipeline facilities (e.g., excavation and backfilling) and has considered them in the development of its covered task list.
3.	The operator identifies how it ensures the addition, revision, or deletion of covered tasks to incorporate changes to operations or regulations.
4.	The operator definition of operations and maintenance is consistent with regulatory requirements as they are applied to pipeline facilities.
5.	The operator identifies the individuals who are qualified to perform the covered tasks.

Small Operator Guidance

The operator should be able to show they have ensured its list of covered tasks performed on its system is complete. Has the operator ensured the covered task list that has been developed, fits the operation and maintenance of the system?

Available Material/Information

1. List of covered tasks

Rule Requirement		§192.801/195.501 (b) For the purpose of this subpart, a covered task is an activity, identified by the operator, that: (1) Is performed on a pipeline facility; (2) Is an operations or maintenance task; (3) Is performed as a requirement of this part; and (4) Affects the operation or integrity of the pipeline.
		§192.805/195.505 Each operator shall have and follow a written qualification program. The program shall include provisions to: (a) Identify covered tasks;

Inspection Summary		
	Process Implementation	

Protocol 2.01 Inspection Results		
		No Issues Identified
		Potential Issues Identified (explain in summary)
		Not Applicable (explain in summary)

Documents Reviewed:

Document Number	Rev.	Date	Document Title

2.01 Inspection Notes:

Protocol #2.02	**Evaluation Method(s) (Demonstration of Knowledge, Skill and Ability) and Relationship to Covered Tasks**
Protocol Question	Has the operator established and documented the evaluation method(s) appropriate to each covered task?.
	Verify what evaluation method(s) has been established and documented for each covered **task.[Enforceable]** Verify that the operator' s evaluation program ensures that individuals can perform assigned covered **tasks.[Enforceable]**

Guidance Topics

The operator is responsible for ensuring that all individuals whether employees or contractors, have been evaluated using one or more of the evaluation methods identified in the OQ rule and can perform the covered tasks assigned to them. Investigation of the following characteristics is important to determine whether the requirements of the rule have been met:

1. The evaluation methods used for qualification of individuals performing covered tasks are derived from the requirements of the covered tasks, and consider any unique needs (e.g., the inability to read) of the individuals being evaluated.
2. Evaluation methods are consistently applied across the operator' s organization such that all individuals performing the same covered task are evaluated using consistent methods.
3. Evaluation methods of operator employees and contractors include the evaluation of an individual' s knowledge, skills, and abilities to ensure that the individual can perform the assigned covered tasks.

Small Operator Guidance

Does the operator's plan list the evaluations that it will accept as evidence of qualification for each covered task?

The operator should be prepared to produce copies of the evaluations (tests, observation checklists, etc.) used to qualify individuals for each covered task and O&M procedures. The former need not be in the operator's possession, however should be able to be produced within a reasonable # of days following an audit.

The Operator should ensure the evaluations address critical skills and abilities in addition to critical knowledge needed to perform each task. For example, certain tasks require physical abilities and physical skills critical to accomplishing the covered task in addition to knowledge of how to perform the task. In that instance, the Operator should ensure its evaluation includes a test to address the physical ability of the individual to perform the task. The actual evaluation may involve a knowledge based test, plus a practical application in the field to demonstrate physical ability and proficiency. Further, the testing for covered tasks included in the qualification program should also include questions on Abnormal Operating Conditions (AOC's) associated with the task to both recognize and react to the AOCs.

The operator should validate that the:

- evaluations address the knowledge, skills and abilities required to perform the routine aspects of the task,
- evaluations are appropriate for the task as it is described in the operator's O&M procedures for the specific types of equipment on which the task is performed,
- be able to demonstrate that the test questions, observation criteria, etc. used to evaluate the knowledge, skills, abilities and abnormal operating conditions are those required to perform the task following the specific procedures and equipment used by the operator.

Note: This is particularly important if the operator is using "off-the-shelf" evaluations developed by contractors, consortia or other vendor. If the off the shelf evaluations address different equipment or procedures, the operator should be able to demonstrate that these evaluations adequately address the same knowledge, skills and abilities as required by the operators procedures and equipment.

Available Material/Information

1. List of evaluations accepted for qualification for each covered task
2. Samples of each evaluation listed in #1

Rule Requirement	§192.803/195.503 Qualified means that an individual has been evaluated and can: (a) Perform assigned covered tasks; and (b) Recognize and react to abnormal operating conditions. Evaluation means a process, established and documented by the operator, to determine an individual' s ability to perform a covered task by any of the following:
	(a) Written examination;
	(b) Oral examination;
	(c) Work performance history review;
	(d) Observation during:
	(1) Performance on the job,
	(2) On the job training, or
	(3) Simulations; or
	(e) Other forms of assessment.
	§192.805/195.505 Each operator shall have and follow a written qualification program.
	The program shall include provisions to:
	(b) Ensure through evaluation that individuals performing covered tasks are qualified;

Inspection Summary		
	Process Implementation	

Protocol 2.02 Inspection Results		
		No Issues Identified
		Potential Issues Identified (explain in summary)
		Not Applicable (explain in summary)

Documents Reviewed:

Document Number	Rev.	Date	Document Title

2.02 Inspection Notes:

Compliance Inspection
Comprehensive Operator Qualification
Element 3

Identify Individuals Performing Covered Tasks

Scope:
This Element addresses the operator's documentation of an individual's evaluation and qualification for performing a covered task and assurance at the job site that only qualified individuals are performing covered tasks. The element also addresses the operator's development of provisions for performance of a covered task by an unqualified individual under the direction and observation of a qualified individual.

Protocol #3.01	**Development and Documentation of Areas of Qualification for Individuals Performing Covered Tasks**
Protocol Question	Does the operator's program document the evaluation and qualifications of individuals performing covered tasks, and can the qualification of individuals performing covered tasks be verified at the job site?
	Verify that the operator' s qualification program has documented the evaluation of individuals performing covered tasks. **[Enforceable]** Verify that the operator' s qualification program has documented the qualifications of individuals performing covered tasks. **[Enforceable]**

Guidance Topics

The rule requires that the operator ensure through evaluation that individuals performing covered tasks are qualified, and that records supporting an individual' s current qualification be maintained while the individual is performing a covered task. Investigation of the following characteristics is important to determine whether the requirements of the rule have been met:

1. Documentation of the qualification of individuals (including contractors) performing covered tasks is maintained and is retrievable by work supervisors to support assignment of individuals to perform covered tasks.
2. Methods such as a current hard copy list, qualification card, central electronic database, or other forms of covered task qualification information are used at the job site to verify the qualifications of individuals performing covered tasks.

Small Operator Guidance

Can the operator produce the evaluation records for all individuals, employee and contractor, who performed a covered task on its system over the past 5 years (or October 28, 2002, whichever is later)? The operator should be able to provide dates that each individual passed each of the required evaluations, the name of the person who conducted the review, and a copy of a sample evaluation for review. The operator, a contractor or a third party may keep records.

Is information on individuals and the tasks for which they are qualified available to supervisors? Lists should be available. Lists may be hardcopy, on-line, computer or any other media that provides current qualification information to supervisors. Lists need not be maintained at the job site as long as the documentation proves that the individuals performing the task are qualified or being directed and observed by a qualified person.

Available Material/Information

1. For each individual who performs covered tasks, written or electronic records of the date each individual completed each evaluation required for a task and the name of the person who administered the evaluation.

Rule Requirement	§192.805/195.505 Qualification Program Each operator shall have and follow a written qualification program. The program shall include provisions to: (b) Ensure through evaluation that individuals performing covered tasks are qualified;
	§192.807/195.507 Recordkeeping Each operator shall maintain records that demonstrate compliance with this subpart. (a) Qualification records shall include: (1) Identification of qualified individual(s); (2) Identification of the covered tasks the individual is qualified to perform; (3) Date(s) of current qualification; and (4) Qualification method(s). (b) Records supporting an individual' s current qualification shall be maintained while the individual is performing the covered task.

Inspection Summary		
	Process	
	Implementation	

Protocol 3.01 Inspection Results		**No Issues Identified**
		Potential Issues Identified (explain in summary)
		Not Applicable (explain in summary)

Documents Reviewed:

Document Number	Rev.	Date	Document Title

3.01 Inspection Notes:

Protocol #3.02	**Covered Task Performed by Non-Qualified Individual**
Protocol Question	Has the operator established provisions to allow non-qualified individuals to perform covered tasks while being directed and observed by a qualified individual, and are there restrictions and limitations placed on such activities?
	Verify that the operator' s program includes provisions for the performance of a covered task by a non-qualified individual under the direction and observation by a qualified individual**.[Enforceable]**

Guidance Topics

The rule allows the performance of a covered task by a non-qualified individual if that individual is directed and observed by an individual qualified to perform the covered task. Investigation of the following characteristics is important to determine whether the requirements of the rule have been met:

1. Consideration has been given to tasks that cannot or should not be performed by non-qualified individuals under the direction and observation of a qualified individual, due to their complexity or due to the critical nature of the task.
2. For tasks where appropriate, guidance on the span of control by qualified individuals of non-qualified individuals has been established on a task-specific basis.

Small Operator Guidance

Operators should ensure that non-qualified personnel are watched by a person qualified in the covered task being performed, who would be capable of interrupting the activity to take immediate corrective action should an unsafe action occur**.** The guidance above for larger operators also applies to small operators, The operator should be prepared to discuss this issue.

Available Material/Information

1. Written operator qualification plan.
2. If available, any written guidance to supervisors on how to direct and observe non-qualified individuals.

Rule Requirement	§805/505 Qualification Program Each operator shall have and follow a written qualification program. The program shall include provision to: (c) Allow individuals that are not qualified pursuant to this subpart to perform a covered task if directed and observed by an individual that is qualified;

Inspection Summary		
	Process Implementation	

Protocol 3.02 Inspection Results		
		No Issues Identified
		Potential Issues Identified (explain in summary)
		Not Applicable (explain in summary)

Documents Reviewed:

Document Number	Rev.	Date	Document Title

3.02 Inspection Notes:

Compliance Inspection
Comprehensive Operator Qualification
Element 4

Evaluate and Qualify Individuals Performing Covered Tasks

Scope:
This Element addresses the operator's use of work performance history review as the sole method for initial evaluation of an individual's qualification to perform covered tasks, and the identification of additional methods of evaluation to be used in addition to, or in place of, work performance history review subsequent to October 28, 2002. The element also addresses the operator's development of AOCs for covered tasks and the methods employed to communicate AOCs for the purpose of qualification.

PROTOCOL #4.01	**Role of and Approach to "Work Performance History Review"**
Protocol Question	Does the operator use work performance history review as the sole method of qualification for individuals performing covered tasks prior to October 26, 1999, and does the operator' s program specify that work performance history review will not be used as the sole method of evaluation for qualification after October 28, 2002?
	Verify that after October 28, 2002, work performance history is not used as a sole evaluation **method.[Enforceable]** Verify that individuals beginning work on covered tasks after October 26, 1999 have not been qualified using work performance history review as the sole method of evaluation. **[Enforceable]**

Guidance Topics

The rule requires that the operator ensure through evaluation that individuals performing covered tasks are qualified, and that one or more of the methods identified in the rule are used for evaluation. Work performance history review is an allowed evaluation method for initial qualification of individuals performing covered tasks prior to October 26, 1999, but may not be used as a sole method of evaluation for subsequent evaluations, or for initial evaluations for qualification after October 28, 2002. Investigation of the following characteristics is important to determine whether the requirements of the rule have been met:

1. The operator has established criteria for the use of work performance history review as an evaluation method.
2. The operator did not use work performance history review as an initial evaluation method, or used it sparingly and with documented justification.
3. The operator' s written program plan and/or evaluation documentation identifies that after October 28, 2002, work performance history review will not be used as the sole method of evaluation for qualification, and that work performance history will not be used as a sole evaluation method for subsequent qualification.

Small Operator Guidance

If the operator uses work performance history review as the sole method of qualifying individuals, were these evaluations performed prior to October 28, 2002?

Does the WPHR documentation verify that the individual performed the task prior to October 26, 1999?

Has a review of WPHR documentation verified that there is no reason to question an individual's qualification for the task (e.g. records were searched, supervisors were interviewed and no evidence of lack of competence was found?

WPHR documentation should include:

1. The date and name of the person who conducted the review.
2. Records dated prior to 10/26/99 showing a person performed a covered task.~~,~~
3. Statements by supervisors, if supported by documentation, are acceptable if they address whether individuals had accidents attributable to them.
4. Reviews that show~~n~~ the individual has followed the company's operating procedures.
5. The individual has the ability to recognize and react to AOC's.

Additional Information could include:

1. Written performance appraisals showing no reason to suspect the person is not qualified.
2. That training and follow-up reviews have taken place

Available Material/Information 1. Records of work performance history review, including the date the review was conducted, the name of the person conducting the review, the covered task for which the individual is being qualified.	
Rule Requirement	§192.803/195.503 Definitions Evaluation means a process, established and documented by the operator, to determine an individual' s ability to perform a covered task by any of the following:
	(a) Written examination;
	(b) Oral examination;
	(c) Work performance history review;
	(d) Observation during:
	(1) Performance on the job,
	(2) On the job training, or
	(3) Simulations; or
	(e) Other forms of assessment.
	§192.805/195.505 Qualification Program
	Each operator shall have and follow a written qualification program. The program shall
	include provisions to:
	(b) Ensure through evaluation that individuals performing covered tasks are qualified;
	§192.809/195.509 General
	(c) Work performance history review may be used as a sole evaluation method for
	individuals who were performing a covered task prior to October 26, 1999.
	(d) After October 28, 2002, work performance history may not be used as a sole
	evaluation method.

Inspection Summary		
	Process	
	Implementation	

Protocol 4.01 Inspection Results		**No Issues Identified**
		Potential Issues Identified (explain in summary)
		Not Applicable (explain in summary)

Documents Reviewed:

Document Number	Rev.	Date	Document Title

4.01 Inspection Notes:

Protocol #4.02	**Evaluation of Individual's Capability to Recognize and React to AOCs**
Protocol Question	Are all qualified individuals able to recognize and react to AOCs? Has the operator evaluated and qualified individuals for their capability to recognize and react to AOCs? Are the AOCs identified those that the individual may reasonably anticipate and appropriately react to during the performance of the covered task? Has the operator established provisions for communicating AOCs for the purpose of qualifying individuals?
	Verify that individuals performing covered tasks have been qualified in recognizing and reacting to AOCs they may encounter in performing such tasks. **[Enforceable]**

Guidance Topics

The ability to recognize and react to AOCs is required for qualification of individuals to perform covered tasks, whether the individuals are employed by the operator or are contractor individuals. The operator must demonstrate that the ability to recognize and react to AOCs is a part of each individual' s evaluation for qualification. Investigation of the following characteristics is important to determine whether the requirements of the rule have been met:

1. AOCs used for evaluation of individuals performing covered tasks consist of those AOCs that the operator can reasonably anticipate the individual will encounter while performing the covered task.
2. In addition to task-specific AOCs (i.e., those that may be caused by performance of the task), generic AOCs (i.e., those that may reasonably be encountered during performance of the task) have been identified and used in qualification in cases where special requirements and conditions for the task being performed must be considered.
3. Evaluation methods for both employees and contractor individuals include evaluation of the appropriate reaction of an individual upon recognition of an AOC.
4. The operator utilizes incident/accident investigations, employee feedback programs, or other approaches to ensure that the AOCs identified and used in evaluating individuals are representative of those that could reasonably be anticipated during performance of covered tasks.

Small Operator Guidance

The operator should have evaluated its systems and operations to determine credible AOCs and identified how it expects its personnel to react to these.

Evaluations used by the operator should address how to recognize and react to abnormal operating conditions.

AOC evaluations may be broken out into a separate section of the evaluation or may be incorporated within those portions of the evaluations that address routine knowledge, skills and abilities.

The operator should be able to demonstrate that all abnormal operating conditions that can reasonably be anticipated to be encountered related to the task being performed are addressed in the evaluations, particularly if off-the-shelf evaluations are being used.

Available Material/Information

1. Samples of the evaluations used to qualify individuals for covered tasks.
2. Only if the operator has identified AOCs, a copy of the AOC list.

Rule Requirement	§192.803/195.503 Definitions abnormal operating condition means a condition identified by the operator that may indicate a malfunction of a component or deviation from normal operations that may: (a) Indicate a condition exceeding design limits; or (b) Result in a hazard(s) to individuals, property, or the environment Qualified means that an individual has been evaluated and can: (a) Perform covered tasks; and (b) Recognize and react to abnormal operating conditions.

Inspection Summary		
	Process Implementation	

Protocol 4.02 Inspection Results		
		No Issues Identified
		Potential Issues Identified (explain in summary)
		Not Applicable (explain in summary)

Documents Reviewed:

Document Number	Rev.	Date	Document Title

4.02 Inspection Notes:

Compliance Inspection
Comprehensive Operator Qualification
Element 5

Continued/Periodic Evaluation of Individuals Performing Covered Tasks

Scope:
This Element addresses the operator's review of individuals performing covered tasks when the individuals were involved in an incident or accident, or when an individual is determined to be no longer qualified or the qualification of an individual is questionable. The element also addresses the reevaluation interval for individuals performing covered tasks.

Protocol #5.01	**Personnel Performance Monitoring**
PROTOCOL QUESTION	Does the operator' s program include provisions to evaluate an individual if the operator has reason to believe the individual is no longer qualified to perform a covered task based on: • Covered task performance by an individual contributed to an incident or accident. ▪ Other factors affecting the performance of covered tasks.
	Verify that the operator' s program ensures evaluation of individuals whose performance of a covered task may have contributed to an incident or accident. **[Enforceable]** Verify that the operator has established provisions for determining whether an individual is no longer qualified to perform a covered task, and requires reevaluation **[Enforceable]**

Guidance Topics

The rule requires that the operator 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 or an accident as defined in Part 195, or evaluate an individual if the operator has reason to believe that the individual is no longer qualified to perform a covered task. Investigation of the following characteristics is important to determine whether the requirements of the rule have been met:

1. Methods and documentation exist to determine if individuals are performing covered tasks properly. These methods may include, but not be limited to: internal audits, third-party audits or inspections, assessments of procedure compliance, supervisor reviews, or assessment by a technical specialist.

2. The operator has addressed the rule requirements in the written program plan and has established implementation requirements that include criteria and documentation requirements.

Small Operator Guidance

The operator's plan should include provisions to:

Re-evaluate an individual involved in an accident,

Re-evaluate an individual if the operator has reason to believe that the individual is no longer qualified.

Reasons an individual may no longer be qualified may include:

- injury or physical limitation,
- procedures seldom or rarely used by the individual,
- observation of an error or incorrect procedure,
- an incident near-miss,
- evidence of an error or incorrect procedure,
- any other evidence the individual may need to be re-evaluated and requalified.

If not spelled out in the written plan, the operator should be prepared to show how it implements these provisions. If the operator has had to conduct any such re-evaluations, the operator should have records and the reason the re-evaluation was believed necessary.

Available Material/Information

1. Written operator qualification plan
2. If available, any other documentation the operator has developed to implement these provisions.

Rule Requirement	§192.805/195.505 Qualification Program Each operator shall have and follow a written qualification program. The program shall include provisions to: (d) Evaluate an individual if the operator has reason to believe that the individual' s performance of a covered task contributed to an incident as defined in Part 191/accident as defined in Part 195; (e) Evaluate an individual if the operator has reason to believe that the individual is no longer qualified to perform a covered task;

Inspection Summary		
	Process Implementation	

Protocol 5.01 Inspection Results		**No Issues Identified**
		Potential Issues Identified (explain in summary)
		Not Applicable (explain in summary)

Documents Reviewed:

Document Number	Rev.	Date	Document Title

5.01 Inspection Notes:

Protocol #5.02	**Reevaluation Interval and Methodology for Determining the Interval**
Protocol Question	Has the operator established and justified requirements for reevaluation of individuals performing covered tasks?
	Verify that the operator has established intervals for reevaluating individuals performing covered tasks. **[Enforceable]**

Guidance Topics

The rule requires that an operator identify covered tasks and the intervals at which evaluation of the individual' s qualification is needed. Investigation of the following characteristics is important to determine whether the requirements of the rule have been met:

1. Basis for the reevaluation intervals considering regulatory practice and/or performance history for similar tasks,
2. Consideration of the need for task-specific reevaluation intervals,
3. Justification of reevaluation intervals considering at a minimum, the risk inherent in the task and the time between successive performances of the task by a qualified individual.

Small Operator Guidance

Has the operator established re-evaluation intervals for each task? Are these intervals consistent with those of other operators? Particularly if the small operator has accepted re-evaluation intervals developed by associations, consortia and other vendors, the operator should be able to justify the re-evaluation intervals it is using for its personnel are reasonable to retain needed skills for the function.

Available Material/Information

1. A list of re-evaluation intervals for each task.

Rule Requirement	§192.805/195.505 Qualification Program Each operator shall have and follow a written qualification program. The program shall include provision to: (g) Identify those covered tasks and the intervals at which evaluation of the individual' s qualifications is needed.

Inspection Summary		
	Process Implementation	

Protocol 5.02 Inspection Results		
		No Issues Identified
		Potential Issues Identified (explain in summary)
		Not Applicable (explain in summary)

Documents Reviewed:

Document Number	Rev.	Date	Document Title

5.02 Inspection Notes:

Compliance Inspection
Comprehensive Operator Qualification
Element 6

Monitor Program Performance; Seek Improvement Opportunities

Scope:
This Element addresses the operator' s plans for continued improvement of the OQ program and investigates mechanisms established for periodic review and revision of the program when warranted.

PROTOCOL #6.01	**Program Performance and Improvement**
Protocol Question	Does the operator have provisions to evaluate performance of its OQ program and implement improvements to enhance the effectiveness of its program? **[Non Enforceable]**

Guidance Topics

Although there are no specific requirements in the rule for the operator to review the OQ program periodically and seek to implement improvements over time, it is reasonable that improvements will be identified that should be incorporated into the program as the program matures and the operator gains valuable feedback through a continuing review of performance trends. This item investigates whether the operator has anticipated the evolutionary nature of its program and has established provisions to identify and assess improvement opportunities and implement those that will result in greater program effectiveness and an increased level of safety. Investigation of the following characteristics is important to determine whether the requirements of the rule have been met:

1. The operator has documented in its OQ plan a periodic requirement for program review.
2. The operator is actively involved in industry groups that seek to improve OQ programs and establish practices that will be identified and documented in consensus standards.
3. A review process has been established by the operator to assemble feedback on program effectiveness and needed improvements, and to periodically assess the feedback to identify improvements that should be made to the OQ program.

Small Operator Guidance

The person responsible for the OQ program should periodically review the adequacy of the written OQ plan provisions. The operator should be prepared to change and update the plan as deemed necessary. The person responsible for managing the OQ program should communicate changes that affect covered tasks to the individuals who perform the tasks. At a minimum it is recommended to review the OQ Plan along with the annual review of the operator's Operations and Maintenance manual.

Available Material/Information

1. None

Rule Requirement	§192.805/195.505 Qualification Program Each operator shall have and follow a written qualification program.

Inspection Summary		
	Process	
	Implementation	

Protocol 6.01 Inspection Results		
		No Issues Identified
		Potential Issues Identified (explain in summary)
		Not Applicable (explain in summary)

Documents Reviewed:

Document Number	Rev.	Date	Document Title

6.01 Inspection Notes:

Compliance Inspection
Comprehensive Operator Qualification
Element 7

Maintain Program Records

Scope:
This Element addresses how the operator implements the rule requirements for retention of records and supporting documentation that establishes the qualification of individuals performing covered tasks and the covered tasks that individuals are qualified to perform.

Protocol #7.01	**Qualification "Trail"(i.e., covered task, individual performing, evaluation method(s), continuing performance evaluation, reevaluation interval, reevaluation records).**
Protocol Question	Does the operator maintain records in accordance with the requirements of 49 CFR 192, subpart N, and 49 CFR 195, subpart G, for all individuals performing covered tasks, including contractor individuals?
	Verify that qualification records for all individuals performing covered tasks include the information identified in the regulations.[Enforceable] Verify that the operator' s program ensures the retention of records of prior qualification and records of individuals no longer performing covered tasks for at least five years**. [Enforceable]** Verify that the operator' s program ensures the availability of qualification records of individuals (employees and contractors) currently performing covered tasks, or who have previously performed covered tasks. [**Enforceable]**

Guidance Topics

The rule requires certain information to be included in records of qualification for individuals performing covered tasks, and that these records be retained for at least five years. Although not identified specifically, records that are specified in the OQ plan and documentation that is required to demonstrate compliance with rule provisions should logically have retention requirements as part of the OQ program implementation. Investigation of the following characteristics is important to determine whether the requirements of the rule have been met:

1. Supporting documentation for implementation of the OQ program, including documentation of:
   a. The methodology for identifying covered tasks;
   b. The reevaluation interval for each covered task and the basis for the reevaluation interval chosen; and
   c. The approach used to select individuals for evaluation and qualification.
2. The operator has considered the need for periodic back-up of qualification database information, whether in-house databases or industry databases, to ensure continued availability of information required to meet rule provisions.
3. The operator has established provisions to ensure the continued presence and availability of contractor records for individuals currently performing, or who have previously performed, covered tasks for the operator.

Small Operator Guidance

The operator should be able to produce the evaluation records for all individuals, employee and contractor, who performed a covered task on its system over the past 5 years (or October 28, 2002, whichever is later)? The operator should be able to provide dates that each individual passed each of the required evaluations and a copy of a sample evaluation for review.

Records may be kept by the operator, a contractor or a third party. If maintained offsite the operator should be able to produce the records within a reasonable time.

Available Material/Information

1. For each individual who performs covered tasks, written or electronic records of the date each individual completed each evaluation required for a task and the name of the person who administered the evaluation.
2. Samples of each evaluation listed in #1.

Rule Requirement	§192.807/195.507 Recordkeeping Each operator shall maintain records that demonstrate compliance with this subpart. (a) Qualification records shall include: (1) Identification of qualified individual(s); (2) Identification of the covered tasks the individual is qualified to perform; (3) Date(s) of current qualification; and (4) Qualification method(s). (b) Records supporting an individual' s current qualification shall be maintained while the individual is performing the covered task. Records of prior qualification and records of individuals no longer performing covered tasks shall be retained for a period of five years.

Inspection Summary	Process Implementation	

Protocol 7.01 Inspection Results		
		No Issues Identified
		Potential Issues Identified (explain in summary)
		Not Applicable (explain in summary)

Documents Reviewed:

Document Number	Rev.	Date	Document Title

7.01 Inspection Notes:

Compliance Inspection
Comprehensive Operator Qualification
Element 8

Manage Change

Scope:
This Element addresses how the operator manages changes to procedures, tools, standards and other changes to the OQ program and how these changes are incorporated into the qualification and evaluation methods for individuals performing covered tasks, and the methods employed to communicate changes to individuals performing covered tasks, whether operator employees or contractors.

Protocol #8.01	**Management of Changes (to Procedures, Tools, Standards, etc.**
Protocol Question	Does the operator' s OQ program identify how changes to procedures, tools standards and other elements used by individuals in performing covered tasks are communicated to the individuals, including contractor individuals, and how these changes are implemented in the evaluation method(s)?
	Verify that the operator' s program identifies changes that affect covered tasks and how those changes are communicated, when appropriate, to affected individuals.[Enforceable] Verify that the operator' s program identifies and incorporates changes that affect covered tasks.[**Enforceable]** Verify that the operator' s program includes provisions for the communication of changes (e.g., who, what, when, where, why) in the qualification program to the affected individuals.[Enforceable] Verify that the operator incorporates changes into initial and subsequent evaluations.[Enforceable] Verify that contractors supplying individuals to perform covered tasks for the operator are notified of changes that affect task performance and thereby the qualification of these individuals.[Enforceable]

Guidance Topics

The rule requires that the operator communicate changes that affect covered tasks to individuals performing those covered tasks. In order to perform this effectively, the operator must have a change management methodology so that it knows when changes are occurring, what changes have an impact on covered task performance, the relative significance of the change and how it affects the continued qualification of individuals, and mechanisms to effectively communicate changes to qualified individuals. Investigation of the following characteristics is important to determine whether the requirements of the rule have been met:

1. Identification of the methods used to communicate changes to affected individuals.
2. Means of ensuring that affected personnel are kept up-to-date on current requirements of the OQ program.
3. Changes to the OQ plan and revisions to the plan are made and communicated to the appropriate individuals.

Small Operator Guidance

Operators must consider how changes to their O&M procedures, systems and equipment may affect their Operator Qualification Plan.

The operator should periodically identify changes, which need to be communicated to its workers and addressed in its OQ plan.

The operator should ensure the person responsible for managing the OQ program is:

- aware of the need and the importance of ensuring qualified personnel are prepared for changed conditions,
- changes affecting covered tasks are communicated to the individuals who perform the task,
- fully aware of the written OQ plan provisions to address and manage changes to its systems.

If changes have occurred that trigger this provision, have the evaluations for affected tasks been adjusted to address the change?

Available Material/Information 1. Written OQ Plan, task list and evaluation requirements 2. If changes have occurred since the past inspection that triggered changes to any of the above, documentation of what changes were made and why should be reviewed, if available.	
Rule Requirement	§192.805/195.505 Qualification Program Each operator shall have and follow a written qualification program. The program shall include provisions to: (f) Communicate changes that affect covered tasks to individuals performing those covered tasks;

Inspection Summary	Process Implementation	

Protocol 8.01 Inspection Results		
		No Issues Identified
		Potential Issues Identified (explain in summary)
		Not Applicable (explain in summary)

Documents Reviewed:

Document Number	Rev.	Date	Document Title

8.01 Inspection Notes:

APPENDIX 2

The attached training material cross-reference guide is to assist operators in referencing Midwest Energy Association (MEA) training materials that are available. MEA training materials are a suggested type of training materials available to operators and are not required under the IAMU program. If other training material is used, that material should be documented in Division 7.

MEA is a consortium of energy industry organizations that pursue operational excellence by providing training and information resources for themselves and other organizations to enhance employee safety, productivity, and positive customer relations. MEA accomplish this by:

1. Seeking opportunities that leverage the power of association.
2. Connecting members so needs are expressed, information is shared, and problems are solved.
3. Pooling expertise and dollars to create unique, high value services.
4. Sponsoring major operating conferences, workshops and classes.
5. Creating "distance" or packaged training and certification services such as computer, video and workbook programs; tests and evaluations.
6. Developing compliance tools to meet OSHA, EPA and DOT regulations.

VIDEOS *This program is no longer distributed as of Jan 2003.*
The OQTP was developed to help natural gas operators and other users train and re-qualify their employees in basic safety subjects.

This qualification training is designed to comply with U. S. Department of Transportation (DOT) standards mandated by the Pipeline Safety Act of 1992. Minimum Federal safety standards for natural gas pipelines are published by DOT in Title 49 of the Code of Federal Regulations, part 192 (49 CFR §192).

The OQTP is a “generic” training course that serves many audiences. The core of the program covers common procedures and requirements for complying with Federal regulations and maintaining safe work conditions. The modular structure of the program allows individual Companies to add information to tailor the instruction to their own regional, State, or corporate policies.

OQforAll
More than eight years of development and testing have produced OQ for all, OQ for all is designed to complement your current training program and apprenticeship practices, providing everything you need to successfully meet the DOT Operator Qualification (OQ) Regulation.

Q41
The Q41 evaluation materials were developed using a process to ensure the reliability and validity of the materials. The development process relied on input from subject matter experts. The materials are designed to evaluate an individual’s ability to perform covered tasks in accordance with the requirements in Title 49, Code of Federal Regulations, Part 192. In addition, the materials are designed to evaluate an individual’s ability to recognize and react to abnormal operating conditions as required by the 49 CFR 192, Subpart N, Qualification of Pipeline Personnel.

MEA TRAINING MATERIAL CROSS-REFERENCE GUIDE

REQUIRED COMPETENCIES AND SKILLS

(Protocols 1.05, 2.02, 4.01, 5.02 §192.803/195.503, §192.805/195.505, §192.809/195.509 Amdt 192-90, 8-20-01)

	Competencies and Skills	Suggested Training Reference[1]	Q41 References	OQforAll References
Sec. 1	**Fundamentals of Natural Gas**			
1.1	Characteristics and hazards of natural gas	Gas Fundamentals Training, MEA-101	Abnormal Operating Conditions Test	192-0101 Characteristics and Hazards of Natural Gas
1.2	Potential ignition sources: indoor and outdoor	Gas Fundamentals Training, MEA-102	Abnormal Operating Conditions Test	192-102 192-2011 Prevention of Accidental Ignition
1.3	Recognizing emergency conditions	Gas Fundamentals Training, MEA-103	CTS-2011 Prevention of Accidental Ignition	Abnormal Operating Conditions Module
1.4	Recognizing and reporting natural gas leaks	Gas Fundamentals Training, MEA-104	CTS-1201 Leakage Survey: Distribution & Transmission	192-1202 Outside Gas Leakage Investigation, Pinpointing, and Grading 192-1203 Inside Gas Leakage Investigation
Sec. 2	**Record keeping**			
2.1	Documenting materials and installation records	Operator's workshop, O&M Manual MEA-402	N/A	N/A
2.2	Documenting maximum allowable operating pressure (MAOP)	Operator's Workshop, O&M Manual MEA-421	CTS 1301 Leak and Strength Test – Service Lines, Mains, and Transmission Lines CTS 1422 Segment Repair, Replacement, Etc. (Service Lines, Mains and Transmission Lines) CTS 1803 Pressure Regulating, Limiting, and Relief Device – Operation and Maintenance CTS-2301 Uprating Steel Pipelines to a Pressure that will Produce a Hoop Stress 30% or More of SMYS CTS-2302 Uprating Steel Pipelines to a Pressure that will Produce a Hoop Stress Less than 30% SMYS	192-2301 Uprating Steel Pipelines to a Pressure that will Produce a Hoop Stress 30% or More of SMYS 192-2302 Uprating Pipelines to a Pressure that will Produce a Hoop Stress Less than 30% SMYS

	Competencies and Skills	Suggested Training Reference[1]	Q41 References	OQforAll References
2.3	System up-rating	Operator's Workshop, MEA-521	CTS-1419 Uprating: Reinforce or Anchor Offsets, Bends, and Dead Ends CTS-2301 Uprating Steel Pipelines to a Pressure that will Produce a Hoop Stress 30% or More of SMYS CTS-2302 Uprating Steel Pipelines to a Pressure that will Produce a Hoop Stress Less than 30% SMYS	192-1419 Uprating: Reinforce or Anchor Offsets, Bends, and Dead-ends 192-2301 Uprating Steel Pipelines to a Pressure that will Produce a Hoop Stress 30% or More of SMYS 192-2302 Uprating Pipelines to a Pressure that will Produce a Hoop Stress Less than 30% SMYS
2.4	Investigating and documenting line failure	Operator's Workshop, MEA-462	N/A	Abnormal Operating Conditions Module
2.5	Accident reporting	Operator's Workshop, O&M Manual, MEA-103	N/A	Abnormal Operating Conditions Module
Sec. 3	**Marking and Mapping Facilities**			
3.1	Locating facilities using the conductive method	Operator's Workshop, Manufacturer's Procedures, MEA-402	CTS 0801 Locating Pipelines	192-0801 Locating Pipelines
3.2	Locating facilities using the inductive method	Operator's Workshop, Manufacturer's Procedures, MEA-402	CTS 0801 Locating Pipelines	192-0801 Locating Pipelines
3.3	Locating facilities using the inductive method (two persons)	Operator's Workshop, Manufacturer's Procedures, MEA-402	CTS 0801 Locating Pipelines	192-0801 Locating Pipelines
3.4	Determining depth through triangulation	Operator's Workshop, Manufacturer's Procedures, MEA-402	CTS 0801 Locating Pipelines CTS 1417 Protection When Minimum Cover Not Met	192-0801 Locating Pipelines 192-1417 Protection when Minimum Cover not Met
3.5	System mapping	Operator's Workshop MEA-402	CTS 0901 System Patrolling	192-0901 System Patrolling
Sec. 4	**Fundamentals of Field Safety in Construction, Operation, and Maintenance**			
4.1	Personal protective equipment	OSHA compliance manual and training, MEA-111	N/A	N/A
4.2	Power tool safety	OSHA compliance manual and training, MEA-121	N/A	N/A

	Competencies and Skills	Suggested Training Reference[1]	Q41 References	OQforAll References
4.3	Proper firefighting techniques	Emergency Procedures Training, MEA-122	N/A	N/A
4.4	Controlling the accidental release of gas	Emergency Procedures Training, MEA-131	Abnormal Operating Conditions Test	Abnormal Operating Conditions Module
4.5	Soil subsidence	OSHA compliance manual and training, MEA-201	CTS 1402 Backfilling	192-1402 Backfilling
4.6	Atmospheric corrosion	Operator's Workshop, MEA-202	CTS 0401 Corrosion Monitoring – Atmospheric, External, and Internal	192-0401 Corrosion Monitoring - Atmospheric, External, and Internal
4.7	Recognizing unsafe meter sets	MEA-211	CTS 1422 Segment Repair, Replacement, Etc. (Service Lines, Mains and Transmission Lines)	192-1422 Segment Repair, Replacement, Etc. (Service Lines, Mains and Transmission Lines)
4.8	Confined space entry (vaults, etc.)	OSHA compliance manual and training, MEA-501	CTS 1802 Vault Maintenance	192-1802 Vault Maintenance
4.9	Job site protection	Compliance manual and training, MEA-MEA-401	N/A	N/A
4.10	Purging safety	Operator's Workshop, MEA-422	CTS 1418 Purging	192-1418 Purging
4.11	Pressure testing steel and plastic pipeline	Operator's Workshop, MEA-421	CTS 1301 Leak and Strength Test – Service Lines, Mains, and Transmission Lines	192-1301 Leak and Strength Test - Service Lines, Mains, and Transmission Lines
4.12	Abandoning facilities	Operator's Workshop, MEA-471	CTS 1401 Abandonment or Inactivation of Facilities	192-1401 Abandonment or Inactivation of Facilities
4.13	Excavation safety	OSHA compliance manual and training, MEA-404	New CTS 12/03	N/A
Sec. 5	**Fundamentals of Gas Leaks - Survey and Response**			
5.1	Leak classification	Emergency Procedures Training, Gas Fundamentals Training, MEA-221	CTS 1201 Leakage Survey: Distribution & Transmission CTS 1202 Outside Leakage Investigation, Pinpointing, and Grading CTS 1203 Inside Gas Leakage Investigation	192-1201 Leakage Survey: Distribution and Transmission 192-1202 Outside Gas Leakage Investigation, Pinpointing, and Grading 192-1203 Inside Gas Leakage Investigation

	Competencies and Skills	**Suggested Training Reference[1]**	**Q41 References**	**OQforAll References**
5.2	Procedures for leak surveys and patrols	Operator's Workshop, MEA-271	CTS 1201 Leakage Survey: Distribution & Transmission CTS 1202 Outside Leakage Investigation, Pinpointing, and Grading CTS 1203 Inside Gas Leakage Investigation	192-1201 Leakage Survey: Distribution and Transmission 192-1202 Outside Gas Leakage Investigation, Pinpointing, and Grading 192-1203 Inside Gas Leakage Investigation
5.3	Combustible gas indicators	Operator's Workshop, Manufacturer's Procedures MEA-231	CTS 1201 Leakage Survey: Distribution & Transmission CTS 1202 Outside Leakage Investigation, Pinpointing, and Grading CTS 1203 Inside Gas Leakage Investigation	192-1201 Leakage Survey: Distribution and Transmission 192-1202 Outside Gas Leakage Investigation, Pinpointing, and Grading 192-1203 Inside Gas Leakage Investigation
5.4	Electronic gas detectors	Operator's Workshop, Manufacturer's Procedures, MEA-231	CTS 1201 Leakage Survey: Distribution & Transmission CTS 1202 Outside Leakage Investigation, Pinpointing, and Grading CTS 1203 Inside Gas Leakage Investigation	192-1201 Leakage Survey: Distribution and Transmission 192-1202 Outside Gas Leakage Investigation, Pinpointing, and Grading 192-1203 Inside Gas Leakage Investigation
5.5	Flame ionization	Operator's Workshop, Manufacturer's Procedures MEA-232	CTS 1201 Leakage Survey: Distribution & Transmission CTS 1202 Outside Leakage Investigation, Pinpointing, and Grading CTS 1203 Inside Gas Leakage Investigation	192-1201 Leakage Survey: Distribution and Transmission 192-1202 Outside Gas Leakage Investigation, Pinpointing, and Grading 192-1203 Inside Gas Leakage Investigation
5.6	Bar hole testing and purging	Operator's Workshop, MEA-261	CTS 1202 Outside Leakage Investigation, Pinpointing, and Grading CTS 1803 Pressure Regulating, Limiting, and Relief Device – Operation and Maintenance	192-1201 Leakage Survey: Distribution and Transmission 192-1202 Outside Gas Leakage Investigation, Pinpointing, and Grading 192-1203 Inside Gas Leakage Investigation

	Competencies and Skills	Suggested Training Reference[1]	Q41 References	OQforAll References
Sec. 6	**Fundamentals of Customer Service**			
6.1	Carbon monoxide (CO) testing	Operator's Workshop, MEA-241	N/A	192-0101 Characteristics and Hazards of Natural Gas
6.2	Investigating leaks	Operator's Workshop, MEA-272	CTS 1201 Leakage Survey: Distribution & Transmission CTS 1202 Outside Leakage Investigation, Pinpointing, and Grading CTS 1203 Inside Gas Leakage Investigation	192-1201 Leakage Survey: Distribution and Transmission 192-1202 Outside Gas Leakage Investigation, Pinpointing, and Grading 192-1203 Inside Gas Leakage Investigation
6.3	Combustion and ventilation air requirements	Operator's Workshop, MEA-301	N/A	N/A
6.4	Pilot light operation	Operator's Workshop, MEA-311, 324	N/A	N/A
6.5	Gas-air adjustment	Operator's Workshop, MEA-312	N/A	N/A
6.6	Appliance venting	Operator's Workshop, MEA-313	N/A	N/A
6.7	Pressure checks to establish gas service	Operator's Workshop, MEA-321	CTS 1301 Leak and Strength Test – Service Lines, Mains, and Transmission Lines	192-1301 Leak and Strength Test – Service Lines, Mains, and Transmission Lines
6.8	Establishing and disconnecting gas	Operator's Workshop, MEA-322	CTS 1301 Leak and Strength Test – Service Lines, Mains, and Transmission Lines CTS 2014 Service Lines Not In Use and Service Discontinuance	192-1301 Leak and Strength Test – Service Lines, Mains, and Transmission Lines 192-2014 Service Lines Not In Use and Service Discontinuance
Sec. 7	**Fundamentals of Construction**			
7.1	Pressure testing steel and plastic pipeline	Operator's Workshop, MEA-421	CTS 1301 Leak and Strength Test – Service Lines, Mains, and Transmission Lines	192-1301 Leak and Strength Test – Service Lines, Mains, and Transmission Lines
7.2	Procedures for abandoning facilities	Operator's Workshop, MEA-471	CTS 1401 Abandonment or Inactivation of Facilities	192-1401 Abandonment or Inactivation of Facilities

	Competencies and Skills	Suggested Training Reference[1]	Q41 References	OQforAll References
7.3	Cathodic protection (general)	Operator's Workshop, MEA-431	CTS 0501 Cathodic Protection System Maintenance CTS 0503 Cathodic Protection Systems - Electrical Connections CTS 0505 Cathodic Protection System Testing	192-0501 Cathodic Protection System Maintenance 192-0503 Cathodic Protection Systems - Electrical Connections 192-0505 Cathodic Protection System Testing
7.4	Constructing facilities across streets, railroads, and waterways	Operator's Workshop, MEA-453	CTS 1404 Casing Vents and Seals	192-1404 Casing Vents and Seals
7.5	Operating thermite welder	Operator's Workshop, Manufacturer's Procedures, MEA-431	CTS 0401 Corrosion Monitoring – Atmospheric, External, and Internal	192-0401 Corrosion Monitoring - Atmospheric, External, and Internal
7.6	Installing tracer wire	Operator's Workshop, DOT Small Gas Operators Manual MEA-451, 452	CTS 1408 Installation of Plastic Pipe CTS 1409 Installation of Steel Pipe	192-1408 Installation of plastic pipe 192-1409 Installation of Steel Pipe
7.7	Installing valves	Operator's Workshop, MEA-451	CTS 1427 Valve Maintenance	192-1427 Valve Maintenance
7.8	Steel and cast iron repair fittings	Operator's Workshop, Manufacturer's Procedures, MEA-461	CTS 1001 Cast Iron Joints - Sealing CTS 1422 Segment Repair, Replacement, Etc. (Service Lines, Mains and Transmission Lines) CTS 1430 Internal Sealing - Cast Iron and Ductile Iron Segments	192-1001 Cast Iron Joints – Sealing 192-1422 Segment Repair, Replacement, Etc. (Service Lines, Mains and Transmission Lines) 192-1430 Internal Sealing - Cast Iron and Ductile Iron Segments
7.9	Maintaining steel and cast iron mains	Operator's Workshop, MEA-462	CTS 1422 Segment Repair, Replacement, Etc. (Service Lines, Mains and Transmission Lines	192-1422 Segment Repair, Replacement, Etc. (Service Lines, Mains and Transmission Lines)
7.10	Reinforcing steel and plastic mains	Fusion Workshop, MEA-463	CTS 1424 Support, Expansion Joints and Anchor Maintenance - Exposed Pipeline	192-1424 Support and Anchor Maintenance - Exposed Pipeline

	Competencies and Skills	Suggested Training Reference[1]	Q41 References	OQforAll References
7.11	Plastic pipe joining (fusion)	Fusion Workshop, MEA-411	CTS 1001 Cast Iron Joints - Sealing CTS 1002 Plastic Pipe – Electrofusion CTS 1003 Plastic Pipe - Butt Heat Fusion CTS 1004 Plastic Pipe – Sidewall Heat Fusion	192-1001 Cast Iron Joints– Sealing 192-1002 Plastic Pipe – Electrofusion 192-1003 Plastic Pipe - Butt Heat Fusion 192-1004 Plastic Pipe - Sidewall Heat Fusion
7.12	Plastic pipe joining (mechanical couplings)	Operator's Workshop, MEA-463	CTS 0803 Inspection for Damage	192-0803 Inspection for Damage
7.13	Recognition of defective material	Operator's Workshop, MEA-411, 412, 421	CTS 1411 Inspection	192-1411 Inspection
7.14	Steel pipe joining by welding	Pipeline Welding Workshop, Qualified Welding Procedures	CTS 2401 Welding	192-2401 Welding
7.15	Steel pipe joining by mechanical couplings	Operator's Workshop, Operator's Workshop, MEA-412	CTS 1005 Mechanical Joints	192-1005 Mechanical Joints
7.16	Damage prevention	Operator's Workshop, MEA-462	CTS 0803 Inspection for Damage	192-0803 Inspection for Damage
7.17	Application of padding and shielding	Operator's Workshop, MEA-453	CTS 1402 Backfilling	192-1402 Backfilling
7.18	Replacing emergency valves	Operator's Workshop, MEA-441, 511	N/A	N/A
7.19	Installing meter sets	Operator's Workshop, MEA-211, 322, 452	CTS 1803 Pressure Regulating, Limiting, and Relief Device – Operation and Maintenance	192-1803 Pressure Regulating, Limiting, and Relief Device -Operation and Maintenance
7.20	Tapping and stopping steel pipe 1" through 4"	Operator's Workshop, MEA-441	CTS 1426 Tapping Steel and Plastic Pipe	192-1426 Tapping Steel and Plastic Pipe
7.21	Tapping and stopping steel pipe 6" through 8"	Operator's Workshop, Manufacture's Procedures	CTS 1426 Tapping Steel and Plastic Pipe	192-1426 Tapping Steel and Plastic Pipe
7.22	Tapping and stopping polyethylene pipe	Operator's Workshop, MEA-451, 452	CTS 1426 Tapping Steel and Plastic Pipe	192-1426 Tapping Steel and Plastic Pipe
7.23	Vault abandonment	Operator's Workshop, MEA-471, 501	CTS 1802 Vault Maintenance	192-1802 Vault Maintenance
Sec. 8	**Fundamentals of Construction – Heavy Equipment Operation**			
8.1	Operating backhoe	Operator's Workshop, MEA-403	N/A	N/A

	Competencies and Skills	Suggested Training Reference[1]	Q41 References	OQforAll References
8.2	Operating trencher	Operator's Workshop, Manufacturer's Procedures, MEA-403	N/A	N/A
8.3	Operating boring equipment	Operator's Workshop, Manufacturer's Procedures	N/A	N/A
8.4	Ditch and backfill inspection	Operator's Workshop, MEA-404	CTS 1402 Backfilling	192-1402 Backfilling
Sec. 9	**Fundamentals of Measurement and Control**			
9.1	Metering	Metering Workshop	N/A	N/A
9.2	Odorization measurement and control	Operator's Workshop, MEA-251	CTS 1501 Odorization – Mains and Transmission Lines	192-1501 Odorization - Mains and Transmission Lines
Sec. 10	**Corrosion Control**			
10.1	Cathodic protection	Corrosion control workshop, MEA-431	CTS 0501 Cathodic Protection System Maintenance	192-0501 Cathodic Protection System Maintenance
10.2	Internal corrosion	Corrosion control workshop, MEA-431	CTS 0401 Corrosion Monitoring – Atmospheric, External, and Internal	192-0401 Corrosion Monitoring - Atmospheric, External, and Internal
10.3	External corrosion	Corrosion control workshop, MEA-431	CTS 0401 Corrosion Monitoring – Atmospheric, External, and Internal	192-0401 Corrosion Monitoring - Atmospheric, External, and Internal
10.4	Atmospheric corrosion	Corrosion control workshop, MEA-202	CTS 0401 Corrosion Monitoring – Atmospheric, External, and Internal	192-0401 Corrosion Monitoring - Atmospheric, External, and Internal
10.5	Coatings	Corrosion control workshop, MEA-431	CTS 0402 Coating Maintenance	192-0402 Coating Maintenance
10.6	Holiday detection (coating inspection)	Corrosion control workshop, MEA-431	CTS 0402 Coating Maintenance	192-0402 Coating Maintenance
10.7	Painting and jacketing above ground facilities	Corrosion control workshop, MEA-202	CTS 0402 Coating Maintenance	192-0402 Coating Maintenance
10.8	Installation of cathodic protection (sacrificial anode system)	Corrosion control workshop, MEA-431	CTS 0501 Cathodic Protection System Maintenance CTS 0503 Cathodic Protection Systems - Electrical Connections CTS 0505 Cathodic Protection System Testing	192-0501 Cathodic Protection System Maintenance 192-0503 Cathodic Protection Systems - Electrical Connections 192-0505 Cathodic Protection System Testing

	Competencies and Skills	Suggested Training Reference[1]	Q41 References	OQforAll References
10.9	Installation of impressed current system	Corrosion control workshop, MEA-431	CTS 0501 Cathodic Protection System Maintenance CTS 0503 Cathodic Protection Systems - Electrical Connections CTS 0505 Cathodic Protection System Testing	192-0501 Cathodic Protection System Maintenance 192-0503 Cathodic Protection Systems - Electrical Connections 192-0505 Cathodic Protection System Testing
10.10	Inspection, monitoring cathodic protection system	Corrosion control workshop, MEA-431	CTS 0501 Cathodic Protection System Maintenance CTS 0503 Cathodic Protection Systems - Electrical Connections CTS 0505 Cathodic Protection System Testing	192-0501 Cathodic Protection System Maintenance 192-0503 Cathodic Protection Systems - Electrical Connections 192-0505 Cathodic Protection System Testing
Sec. 11	**Odorization**			
11.1	Operating and maintaining differential odorant system	Operator's Workshop, O&M Manual, MEA-251	CTS 0501 Cathodic Protection System Maintenance	192-0501 Cathodic Protection System Maintenance
11.2	Operating and maintaining injection odorant system	Operator's Workshop, O&M Manual, MEA-251	CTS 1501 Odorization – Mains and Transmission Lines	192-1501 Odorization - Mains and Transmission Lines
11.3	Testing odorant level	Operator's Workshop, O&M Manual, MEA-251	CTS 1501 Odorization – Mains and Transmission Lines	192-1501 Odorization - Mains and Transmission Lines
Sec. 12	**Other Operating and Maintenance Skills**			
12.1	Operating valves (including emergency valves), regulators, and relief valves	Operator's Workshop, O&M Manual, MEA-244, 511, 512	CTS 0701 Locating, Installing, and Protecting Customer Meters and Regulators CTS 0702 Customer Pressure Regulating, Limiting, and Relief Device – Operation and Maintenance	192-0701 Locating, Installing, and Protecting Customer Meters and Regulators 192-0702 Customer Pressure Regulating, Limiting, and Relief Devices - Operation and Maintenance

	Competencies and Skills	**Suggested Training Reference[1]**	**Q41 References**	**OQforAll References**
12.2	Inspecting pressure regulating and limiting stations	Operator's Workshop, O&M Manual, MEA-512	CTS 0701 Locating, Installing, and Protecting Customer Meters and Regulators CTS 0702 Customer Pressure Regulating, Limiting, and Relief Device – Operation and Maintenance	192-0701 Locating, Installing, and Protecting Customer Meters and Regulators 192-0702 Customer Pressure Regulating, Limiting, and Relief Devices - Operation and Maintenance
12.3	Inspecting and maintaining key valves	Operator's Workshop, O&M Manual, MEA-511	CTS 1427 Valve Maintenance	192-1427 Valve Maintenance
12.4	System uprating	Operator's Workshop, O&M Manual, MEA-521	CTS 1419 Uprating: Reinforce or Anchor Offsets, Bends, and Dead Ends	192-1419 Uprating: Reinforce or Anchor Offsets, Bends, and Dead-ends
Sec. 13	**Operating Peak Shaving Plant (Propane/air mixture/injection)**			
13.1	Pre-start-up procedures	O&M Manual, Emergency shut down procedures	N/A	N/A
13.2	Start-up/operating procedures/shut down in accordance with operators manual for specific equipment	O&M Manual, Emergency shut down procedures	CTS 0301 Operating Gas Compressor Units CTS 0302 Shutting Down Gas Compressor Units	192-0301 Operating a Gas Compressor Unit 192-0302 Shutting Down a Gas Compressor Unit

[1] Reference to operator training refers to workshops conducted by state and regional associations, such as the Iowa Association of Municipal Utilities and the Midwest Energy Association (formerly known as Midwest Gas Association), manufacturers and distributors of gas industry products and equipment, state regulatory agencies, and other organizations. Specific references to MEA materials are to training modules in the Midwest Energy Association's Operator Qualification Training series.