MIDWAY SUNSET
Cogeneration Company



CC-1595

December 1, 2009

Mr. Chris Hoidal
Director, Western Region
Pipeline and Hazardous Materials Safety Administration
12300 W. Dakota Ave
Suite 110
Lakewood, CO 80228
Phone 720-963-3160

RE: **CPF 5-2009-0025M**
Midway Sunset Cogeneration Company (MSCC)
3466 W Crocker Springs Road, P.O. Box 457
Fellows, CA 93224-0457

This cover letter and attached documents are in response to your Notice Of Amendment (CPF 5-2009-0025M) dated November 9, 2009.

MSCC will not contest the Notice and has addressed the inadequacies identified. Attached is the amended MSCC Gas Pipeline Operator Qualification Program, which MSCC believes has addressed these inadequacies.

Please contact me at 661-768-3018 or at gjans@edisonmission.com should you have any questions concerning this matter.

Regards,

Greg Jans
Plant Manager
Midway Sunset Cogeneration Company

cc: Mr. Hossein Monfared
PHMSA Hazardous Materials Safety
Western Region Office
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Ontario, CA 91761
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Attachments: MSCC Gas Pipeline Operator Qualification Program Cover Sheet
MSCC Gas Pipeline Operator Qualification Program
Appendix A - Standardized Covered Tasks List
Appendix B - NCCER / MEA / OQSG Comparison Matrix

# Midway Sunset Cogeneration Company

## Pipeline Operator Qualification Program Guidelines

***49CFR §192 / §195***

***Rev. 4.0, November 20, 2009***

# GAS PIPELINE OPERATOR QUALIFICATION PROGRAM

## TABLE OF CONTENTS

# INTRODUCTION

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

## Program Design Model:

**Section I: Purpose and Scope**
The first part of the program explains the purpose and scope of the program.

**Section II: OPERATOR QUALIFICATION – WRITTEN ASSESSMENT PROCESS**
This Section specifies the process by which MSCC administers written evaluations used to help determine knowledge retention.

**Section III: OPERATOR QUALIFICATION - PERFORMANCE VERIFICATION PROCESS**
This Section specifies the process for verifying performance qualifications, 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 Section 7.

**Section IV: Training**
This section specifies guidelines and parameters for work force training for MSCC and Contractor / Sub-contractor Business Partners.

**Section V: Program Administration**
This Section outlines the criteria for program administration issues such as Management of Change, Notice requirements, and Record Keeping.

Special Note: OQ records are recognized as property. Therefore, participants in this process must understand ownership issues are involved. Ownership is described at two levels: Individual {individual summary} which belongs to the individual performing the covered tasks; Organizational, {work group summary}, which belongs to the organization that owns the plan. All contractors / sub-contractors therefore must provide access to these levels in order to proceed with conducting Covered Task activities.

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# NATURAL GAS OPERATOR QUALIFICATION PROGRAM

## Section I: PURPOSE

(49CFR §192.809/195.509)

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 October 28, 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 contractors / sub-contractors performing certain covered tasks, that require separate documentation, as required by the Operations and Maintenance manual, for example; Leak surveys, cathodic protection, regulator inspection.

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

## COVERED TASKS, COMPETENCIES AND SKILLS.

(49CFR §192.805/195.505)
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 or be directed and observed by a qualified individual. (Certain critical OQ-covered tasks such as hot tapping, stoppling, excavation, non-destructive testing, and welding will be performed by a qualified person only.) Qualification shall require both Written Assessment and Performance Evaluation. 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.

METHOD USED FOR DETERMINING COVERED TASK LIST:
MSCC has adopted the API/NCCER Standardized Covered Task List. Additional covered tasks shall be added to augment as needed. Refer to Appendix A for a complete Covered Task List.

## CONTRACTORS / SUB-CONTRACTORS.

(49CFR §§ 192.803/195.503, 192.805/195.505, 192.807/195.507)

Contractors / sub-contractors performing a covered task shall qualify in the following manner:

Contracting business partners / sub-contractors 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 V: Program Administration, of the contractor's / sub-contractor's evaluations and ensure they address the same knowledge, skills, and AOC's as MSCC's adopted program evaluations for the same tasks. MSCC has adopted the National Center for Construction Education and Research {NCCER} Pipeline Training and Assessment Program {PTAP}.

The DOT Coordinator will make sure the evaluations are documented e.g. test questions are written and observation evaluations include checklists indicating what is observed. Listed below are examples of programs available that meet the minimum standards of the MSCC OQ Program. Each of the listed programs provides acceptable evaluation methods for assessing qualifications for performing covered tasks.

Contracting business partners / sub-contractors will be required to provide all necessary documentation and evaluation materials upon request to permit MSCC DOT Coordinator the opportunity to verify transference to the NCCER PTAP baseline requirements.

Approved OQ Programming:
NCCER PTAP

MEA "OQforAll"
NACE
OQ Solutions Group

## Section II: QUALIFICATION BY WRITTEN AND PERFORMANCE EVALUATION.

(49CFR §§ 192.805/195.505, 192.803/195.503)
A written and performance evaluation is required in each covered task. Successful candidates shall meet the minimum passing requirements for each task performed in order to classify as Operator Qualified. 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.

MSCC has adopted the National Center for Construction Education and Research {NCCER} Pipeline Training and Assessment Program {PTAP}. This program provides for both written assessment and performance verification of the individual's knowledge, skills, and abilities.

Operator Qualification Program acknowledges evaluating and qualifying hands-on demonstrations of skills necessary to perform tasks on gas systems as a valid component for qualifying individuals. Operators shall use appropriate documentation forms to process hands on observations. Training course attendance records or manufacturer's procedures may be suitable for documentation in certain situations.

When performing direct observation the observer must appropriately document the observation. NCCER PTAP protocols provide Performance Verification forms for all Standardized Covered Tasks. These forms require a Certified Performance Evaluator to administer appropriately.

## QUALIFICATION BY PRE-TEST.

A general pre-test may, at the discretion of the DOT Coordinator, be offered to participants to establish specific knowledge base. If the test is passed in accordance to the testing procedures of the program within which the test is administered the participants shall be deemed Written Qualified. Performance Verified requires the participant, for each competency area, to demonstrate an adequate level of proficiency in accordance with the procedures of the program. Performance evaluations may be performed on the job, in simulation, or any other means recognized by the program guidelines in force at the time of the evaluation.

NOTE: To be recognized as Fully Qualified, a Participant must pass the Written Assessment and the Performance Evaluation for each task for which the participant is seeking qualification.

MSCC provides each individual who qualifies the opportunity to pre-test in accordance to the protocols of the NCCER PTAP program. Please contact the DOT Coordinator for details concerning the PTAP assessment process.

## RE-QUALIFICATION.

Examinations for re-qualification must be passed and documented in accordance with the time frames specified within the program in force at the time re-certification / re-qualification is required.

MSCC currently employs the NCCER PTAP process for Operator Qualification. This process stipulates all tasks are qualified for a time frame of 36 months. To avoid a lapse in qualification participants must re-qualify PRIOR to the 36 month term limit. Participants whose qualifications have expired may petition to re-test. All petitions shall be submitted to the DOT Coordinator.

## Section III: QUALIFICATION BY PERFORMANCE.

(49CFR §§ 192.803/195.503, 192.805/195.505)
Work performance history may not be used as sole evaluation method after October 28, 2002.
Prior to October 28, 2002 qualification by work experience was recognized under certain protocols. This method of qualification is no longer valid. All Qualified personnel must present valid evidence of such qualification(s). Valid evidence must include both written assessment and performance verification components to be considered complete. NCCER PTAP provides for both written assessment and performance-based verification of qualification for all Standardized Covered Tasks listed in the API/NCCER list cited above.

(49CFR §§ 192.805/195.505, 192.803/195.503)
Operator Qualification Program acknowledges evaluating and qualifying hands-on demonstrations of skills necessary to perform tasks on gas systems as a valid component for qualifying individuals. Operators shall use appropriate documentation forms to process hands on observations. Training course attendance records or manufacturer's procedures may be suitable for documentation in certain situations.

When performing direction and observation the director / observer must appropriately document the direction / observation.

NCCER PTAP protocols provide Performance Verification forms for all Standardized Covered Tasks. These forms require a Certified Performance Evaluator to administer appropriately.

In the event that an employee is not qualified to perform a certain covered task, that person may perform the covered task if under the direction and observation of a person that is qualified. (Certain critical OQ-covered tasks such as hot tapping, stoppling, excavation, non-destructive testing, and welding will be performed by a qualified person only.)The director / observer MUST present evidence of their qualifications for the task being directed / observed. This evidence must include both written assessment and performance verification components to be considered valid.

Direction / observation means, the director / observer must be in close enough proximity, in the immediate area, to be able to direct actions, and 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.

MSCC stipulates the following concerning Proximity, Direction and Observation:

- Close Proximity is defined as near enough to immediately intervene in the event a task is not being performed appropriately. Certain tasks may require closer direction / observation ranges due to the nature of task. The DOT Coordinator shall provide such variance information during project planning activities to all affected personnel.
- Observation requires a direct line of sight between the Observer and the Observee
- Directors / Observers shall have no other duties than the singular direction and observation of the individual performing the task. One Director / Observer – One Observee.
- Director / Observers, and the activity of directing / observing, shall not be permitted to adversely affect the safe completion of the task.
- Additional hazards, increased risk exposure, undue impediments to job completion, interference with process flow shall not be permitted for the sake of direction / observation. When these adverse conditions are recognized or anticipated the Direction / Observation Activity shall be suspended or prohibited from occurring. This will require a crew member exchange if the individual is not adequately qualified for the task.
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## RE-EVALUATION FOR CAUSE.

(49CFR §§192.803/195.503, 192.805/195.505)
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 DOT Coordinator 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:

- 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.
- An event that results in an emergency shutdown of an LNG facility.
- 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 DOT Coordinator 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 examination (to same criteria as initial qualifications.) Reasons an individual may no longer be qualified may include: injury or physical limitation, procedures seldom or rarely performed, observation of an error or incorrect procedure, a near-miss incident, evidence of an error or incorrect procedure, or any other evidence the individual may need to be re-evaluated and re-qualified.

Re-Qualification will adhere to the specific measures approved by the DOT Coordinator and Plant Manager. At a minimum, the Re-Qualification shall include, but not be limited to, the following measures:

- The individual will be barred from performance of the task(s) until full qualification is re-acquired.
- The individual will be required to attend formal training as prescribed in the NCCER PTAP programming. Training shall be facilitated by internal or external technical instructors. All instructor personnel shall be certified by NCCER's Instructor Certification Training Program {ICTP}
- The individual shall be required to pass the Written Assessment for all applicable task(s)
- The individual shall be required to pass Performance Evaluation for all applicable task(s)
- After successful completion of the Re-Qualification measures the individual will be required to submit to Task-Specific Direction / Observation for a minimum of two times, per task.
- The Director / Observer shall submit an evaluation report to the DOT Coordinator wherein the activities observed shall be reported. Included in this report shall be notations covering successful and/or unsuccessful activities, date/time/location of all directed and observed actions, and any feedback notes provided the individual being directed / observed. The Individual is encouraged to comment during this direction / observation / feedback phase.

## Section IV: TRAINING.

(49CFR §§ 192.803/195.503, 192.805/195.505)
The above requirements are accomplished through an on-going training program. All training and evaluation shall be conducted by or be in accordance with NCCER's PTAP 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. Details of delivery options are listed below:

- Workshops: best suited for refresher training for tasks performed infrequently or tasks involving critically high exposure to AOCs.
- Workshops may also be used to provide the necessary 'Hands On' training associated with covered tasks.
- Classroom activities are best suited for delivery of new concepts and procedures. This forum shall utilize lecture, audio-visual, table top exercises, and textbook components to deliver information
- Field simulations: a variant of the Workshop, this format is quite valuable to provide participants the experience and skill development in a setting that closely resembles the 'real world' environment of day-to-day operations.
- Project Planning Sessions shall be convened for the purpose of providing all affected persons with information concerning the scope of the task(s) to be performed. AOC, Energy Control, Technical Details,

Specific OQ requirements, and other critical information shall be provided, exchanged, discussed, and evaluated for possible improvement.

All hands-on activities will be conducted at the operator's gas facility, a gas facility of similar design, the MSCC training facilities, or at a workshop designated for the specific competencies and skills identified as covered tasks. All hands on activities shall be closely directed by an Instructor Fully Qualified in the task(s) being trained.

Any new or amended covered tasks shall have appropriate training materials outlined prior to conducting formal training.

If qualifications are questioned, retraining will be conducted as stipulated above {See Reevaluation For Cause}.

# Section V: Program Administration

## Abnormal Operating Conditions

(49CFR §192.803/195.503)

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 the NCCER PTAP process. Other training materials {methods, schools, workshops, etc.} need to ensure they cover the AOC's required for the task(s).

NCCER's Contren Learning Series contains training materials, technical data, and text book tools for all Standardized Covered Tasks.

## Notice of Changes

(49CFR §§ 192.801/195.501, 192.805/195.505)
DOT Coordinator will communicate {i.e. meeting, e-mail} with all affected individuals, contractors, and sub-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 content and distribution. This may include qualification and re-qualification procedures, equipment change and upgrades, new material specifications, O&M activity and new tasks and evaluations.

MSCC shall manage all process change by using the Management of Change {MOC} process referenced in the Policies and Procedures Manual {MW-VI-115}.

MSCC will notify the DOT Administrator or state agency participating under 49 U.S.C Chapter 601 in writing if MSCC significantly modifies the program after the DOT Administrator has verified that it complies with this section.

## Record Keeping

(49CFR §192.807/195.507)
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 performance verifications of persons that are no longer performing covered tasks shall be retained for the time period of five years after the qualification expires.

Operator Qualification Program records must be maintained for a period of no less than Five Years after the qualification has expired. An example would be a qualification that is valid for a period of three years and then expires would require records to be held an additional five years after the expiration date. Therefore the records would be kept a total of eight years.

Contractor / sub-contractor records must be provided to the Operator PRIOR to performing any Standardized Covered Task. Submission of these records may be in electronic or hard copy format. Conversion of record data shall be the responsibility of the Contractor / Sub-Contractor. Conversion shall be requested at the discretion of MSCC OQ Program Administrator.

**Qualification Records shall provide at a minimum the following:**

- **Identification of the individual**
- **Identification of the covered tasks the individual is qualified to perform**
- **Date(s) of current qualification**
- **Qualification method(s)**

## Records Management

MSCC shall maintain OQ program records on site. All official OQ records shall be maintained in the facility library. Working copies may be stored in office areas as need and convenience dictate.

## New Construction:

Will be regarded as an Operations and Maintenance activity - i.e. pipe replacement, main additions regulator station upgrades

## Mutual Aid:

(49 CFR §192.803/195.503)
Operator, Contractor, and Sub-Contractor personnel are covered by this program. Training will be required on assigned covered tasks, prior to performing these tasks, and all affected individuals will be listed. Training and qualification activities shall be the sole responsibility of the Contracting Business Partner / Sub-Contractor for MSCC projects for all contractor / sub-contractor business partner employees.

All personnel, regardless of employment relationship with MSCC {MSCC employee or Contracting Business Partner employee / Sub-Contractor employee}, 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. Please refer to Section II for a list of approved OQ programs. *In addition to the appropriate Covered Task Qualifications, all Contracting Business Partner / Sub-Contractor personnel shall be instructed on the components of the MSCC Emergency Response Procedure {Plant Procedure MW-VII-003}.*

## Program Performance and Evaluation

(49CFR §192.805/195.505)
DOT Coordinator is to evaluate the program as to performance, effectiveness and improvement.

Request for changes and/or additions to this plan shall be documented and processed in accordance to the MSCC MOC process {MW-VI-115}.. All change requests shall be managed by the DOT Coordinator. Document copies shall be archived at the Off Site Facility described in Section VIII with originals maintained by DOT Coordinator at MSCC.

Program Evaluations shall be conducted annually to determine effectiveness, accuracy, compliance with standards, record keeping practices. This evaluation shall be managed by the DOT Coordinator and may include external auditors. This audit process shall commence in January each year and complete on or before February 28 of the same year.

## Contractor and Sub-Contractor Annual Audit Review Process

Contracting / Sub-Contracting business partners shall submit to annual Operator Qualification Program Review activities. The process will be directed by the MSCC OQ Program Administrator. The program requires that annually each contractor / sub-contractor company must submit verification of OQ program integrity. An audit report citing findings and summarized commentary shall be compiled and remitted to MSCC Management for review and subsequent action if deemed appropriate.

Prospective business partners shall be required to submit to a Pre-Qualification OQ Program Review. This review action shall seek to evaluate OQ Program integrity for the purpose of approving the contractor / sub-contractor prior to start of DOT OQ affected projects. An audit report citing findings and summarized commentary shall be compiled and remitted to MSCC Management for review and subsequent action if deemed appropriate.

# Regulatory Code Review

## 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 DEFINITIONS.

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

(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.

### 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.

### 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.

# API Approved Liquid/Gas Covered Tasks List

with references to NCCER Pipeliner Training and Assessment Materials

Revision Date 01-16-09

**Note 1 - Workers must be qualified on either "Field" or "Control Center" Abnormal Operating Conditions, (AOC) or both.**
**Note 2 - Abnormal Operating Conditions are incorporated within each task performance verification.**
**Note 3 - Please see footnote for important information about Task 43**
**Note 4 - Please see footnote for important information about AOC Assessments**

| Task # | Task Type | API Covered Tasks and Sub-Tasks | Contren Learning Series Level | Contren Learning Series Module # | Written Assessments: E & I Pipeline Technician | Mechanical Pipeline Technician | Corrosion Preven. Field Tech 1-Measurement | Corrosion Preven. Field Tech 1-Installation | Corrosion Prevention Field Technician 2 | Corrosion Prevention Field Technician 3 | Field and Control Center Operations Technician | Liquid Pipeline Field Operations | Liquid Control Center Operations | Pipeline Maintenance Technician | Gas Maintenance Technician | Gas Pipeline Operations | Non Destructive Testing | Abnormal Operating Conditions-(General) | Abnormal Operating Conditions-(Control Ctr) | Abnormal Operating Conditions-(Gas) | Abnormal Operating Conditions-(Field) | Performance Verifications |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **AOC** | **L** | **Abnormal Operating Conditions (General)** | 1 | 66102 | | | | | | | | | | | | | | X | | | | Note 2 |
| **AOC** | **L/G** | **Abnormal Operating Conditions (Control)** | 1 | 65102 | | | | | | | | | | | | | | | X | | | Note 2 |
| **AOC** | **G** | **Abnormal Operating Conditions (Gas)** | 1 | 67107 | | | | | | | | | | | | | | | | X | | Note 2 |
| **AOC** | **L/G** | **Abnormal Operating Conditions (Field)** | 1 | 66102/67107 | | | | | | | | | | | | | | | | | X | Note 2 |
| **CORROSION** | | | | | | | | | | | | | | | | | | | | | | |
| **1** | **L/G** | **Conduct Annual Surveys or Electrically Inspect Unprotected Bare Pipe** | | Split | | | | | | | | | | | | | | | | | | |
| | | 1.1 Measure structure-to-soil potentials | 1 | 61108 | | | X | | | | | | | | | | | | | | | PV011 |
| | | 1.2 Conduct close interval survey | 2 | 61205 | | | | | X | | | | | | | | | | | | | PV012 |
| | | 1.3 Test to detect interference | 2 | 61203 | | | | | X | | | | | | | | | | | | | PV013 |
| | | 1.4 Inspect and perform electrical test of bonds | 2 | 61205 | | | X | | | | | | | | | | | | | | | PV014 |
| | | 1.5 Inspect and test isolation devices | 1 | 61108 | | | X | | | | | | | | | | | | | | | PV015 |
| **2** | **L/G** | **Maintain Test Leads** | | | | | | | | | | | | | | | | | | | | |
| | | 2.1 Inspect and verify test lead continuity | 1 | 61109 | | | | X | | | | | | | | | | | | | | PV021 |
| | | 2.2 Repair damaged test leads | | | | | | X | | | | | | | | | | | | | | PV022 |
| | | 2.3 Install test leads by non-exothermic welding methods | | | | | | X | | | | | | | | | | | | | | PV023 |
| | | 2.4 Install test leads by exothermic welding methods | | | | | | X | | | | | | | | | | | | | | PV024 |
| **3** | **L/G** | **Inspect Rectifier** | | | | | | | | | | | | | | | | | | | | |
| | | 3.1 Obtain a voltage and current output reading from a rectifier | 1 | 61108 | | | X | | | | | | | | | | | | | | | PV031 |
| | | 3.2 Check for proper operation of a rectifier | | | | | X | | X | | | | | | | | | | | | | PV032 |
| **4** | **L/G** | **Maintain Rectifier** | | | | | | | | | | | | | | | | | | | | |
| | | 4.1 Troubleshoot rectifier bond connections | 2 | 61202 | | | | | X | | | | | | | | | | | | | PV041 |
| | | 4.2 Repair or replace defective rectifier components | | | | | | | X | | | | | | | | | | | | | PV042 |
| | | 4.3 Adjustment of rectifier | | | | | | | | X | | | | | | | | | | | | PV043 |
| **5** | **L/G** | **Inspect Buried Pipe When Exposed** (Also in Maintenance 62204) | | | | | | | | | | | | | | | | | | | | |
| | | 5.1 Inspect for physical damage on buried or submerged pipe | 1 | 61105 | | | | X | | | | | | | | | | | | | | PV051 |
| | | 5.2 Inspect for external corrosion on buried or submerged pipe | | | | | | X | X | | | | | | | | | | | | | PV052 |
| | | 5.3 Inspect the condition of external coating on buried or submerged pipe | | | | | | X | X | | | | | | | | | | | | | PV053 |
| **7** | **L/G** | **Inspect and Perform Prevention Methods for Atmospheric Corrosion** | | Split | | | | | | | | | | | | | | | | | | |
| | | 7.1 Visual inspection of atmospheric coating | 1 | 61106 | | | | | X | | | | | | | | | | | | | PV071 |
| | | 7.2 Prepare surface for atmospheric coating using hand and power tools | 1 | 61106 | | | | X | | | | | | X | | | | | | | | PV072 |
| | | 7.3 Perform water pressure cleaning | 1 | 61106 | | | | X | | | | | | X | | | | | | | | PV073 |
| | | 7.4 Prepare surface for atmospheric coating by abrasive blasting | 2 | 61207 | | | | X | | | | | | X | | | | | | | | PV074 |
| | | 7.5 Apply atmospheric coating using hand application methods | 1 | 61106 | | | | X | | | | | | | | | | | | | | PV075 |
| | | 7.6 Apply atmospheric coating using spray applications | 2 | 61208 | | | | X | | | | | | | | | | | | | | PV076 |
| | | 7.7 Use coating inspection tools | 2 | 61206 | | | | X | | | | | | | | | | | | | | PV077 |
| **8** | **L/G** | **Measure Wall Thickness** | | | | | | | | | | | | | | | | | | | | |
| | | 8.1 Measure pit depth with pit gauge | 1 | 61104 | | | X | | | | | | | | | | | | | | | PV081 |
| | | 8.2 Measure wall thickness with handheld ultrasonic meter | | | | | X | | | | | | | | | | | | | | | PV082 |
| | | 8.3 Measure corroded area | | | | | X | | | | | | | | | | | | | | | PV083 |
| **9** | **L/G** | **Cathodic Protection Remediation** | | Split | | | | | | | | | | | | | | | | | | |
| | | 9.1 Install bonds | 2 | 61203 | | | | | | X | | | | | | | | | | | | PV091 |
| | | 9.2 Install galvanic anodes | 2 | 61201 | | | | | X | | | | | | | | | | | | | PV092 |
| | | 9.3 Install rectifiers | 2 | 61201 | | | | | | X | | | | | | | | | | | | PV093 |
| | | 9.4 Install impressed current groundbeds | 2 | 61201 | | | | | | X | | | | | | | | | | | | PV094 |
| | | 9.5 Repair shorted casings (Also in Maintenance 62304) | 2 | 61204 | | | | X | | | | | | | | | | | | | | PV095 |
| **10** | **L/G** | **Monitor for Internal Corrosion** | | | | | | | | | | | | | | | | | | | | |
| | | 10.1 Insert and remove coupons | 1 | 61111 | | | | X | | | | | | | | | | | | | | PV101 |
| | | 10.2 Monitor probes (on-line) | | | | | X | | | | | | | | | | | | | | | PV102 |
| **11** | **L/G** | **Perform Internal Corrosion Remediation** | 1 | 61111 | | | X | | | | | | | | | | | | | | | PV110 |
| | | No Subtasks | | | | | | | | | | | | | | | | | | | | |

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**Note 4 - Please see footnote for important information about AOC Assessments**

| Task # | Task Type | API Covered Tasks and Sub-Tasks | Contren Learning Series Level | Contren Learning Series Module # | Written Assessments: E & I Pipeline Technician | Mechanical Pipeline Technician | Corrosion Preven. Field Tech 1-Measurement | Corrosion Preven. Field Tech 1-Installation | Corrosion Prevention Field Technician 2 | Corrosion Prevention Field Technician 3 | Field and Control Center Operations Technician | Liquid Pipeline Field Operations | Liquid Control Center Operations | Pipeline Maintenance Technician | Gas Maintenance Technician | Gas Pipeline Operations | Non Destructive Testing | Abnormal Operating Conditions-(General) | Abnormal Operating Conditions-(Control Ctr) | Abnormal Operating Conditions-(Gas) | Abnormal Operating Conditions-(Field) | Performance Verifications |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **12** | **L/G** | **Inspect Internal Pipe Surface** | 1 | 61110 | | | | X | | | | | | | | | | | | | | PV120 |
| | | No Subtasks | | | | | | | | | | | | | | | | | | | | |
| **13** | **L/G** | **Apply and Repair External Coating on Buried or Submerged Pipe** | | Split | | | | X | | | | | | X | | | | | | | | |
| | | 13.1 Prepare surface for coating using hand and power tools | 1 | 61106 | | | | | | | | | | | | | | | | | | PV131 |
| | | 13.2 Perform water pressure cleaning | 1 | 61106 | | | | | | | | | | | | | | | | | | PV132 |
| | | 13.3 Prepare surface for coating by abrasive blasting | 2 | 61207 | | | | | | | | | | | | | | | | | | PV133 |
| | | 13.4 Apply coating using hand application methods | 1 | 61107 | | | | | | | | | | | | | | | | | | PV134 |
| | | 13.5 Apply coating using spray applications | 2 | 61208 | | | | | | | | | | | | | | | | | | PV135 |
| **MAINTENANCE** | | | | | | | | | | | | | | | | | | | | | | |
| **9** | **L/G** | 9.5 Repair shorted casings (Also in Corrosion 61204) | 2 | 62304 | | | | | | | | | | X | | | | | | | | PV095 |
| **14** | **L/G** | **Place and Maintain Line Markers** | 1 | 62106 | | | | | | | | | | X | | | | | | | | |
| | | 14.1 Locate line (Also in Corrosion 61103) | | | | | | | | | | | | | | | | | | | | PV141 |
| | | 14.2 Install marker | | | | | | | | | | | | | | | | | | | | PV142 |
| | | 14.3 Inspect and maintain marker | | | | | | | | | | | | | | | | | | | | PV143 |
| | | 14.4 Inspect and maintain aerial line markers | | | | | | | | | | | | | | | | | | | | PV144 |
| **15** | **L/G** | **Inspect Surface Conditions of Right-of-Way** | 2 | 62201 | | | | | | | | | | X | | | | | | | | |
| | | 15.1 Visual inspection of the surface | | | | | | | | | | | | | | | | | | | | PV151 |
| | | 15.2 Reporting protocols | | | | | | | | | | | | | | | | | | | | PV152 |
| **16** | **L/G** | **Inspect Navigable Waterway Crossing** | 2 | 62201 | | | | | | | | | | X | | | | | | | | |
| | | 16.1 Use of probing equipment | | | | | | | | | | | | | | | | | | | | PV161 |
| | | 16.2 Use of sonar equipment | | | | | | | | | | | | | | | | | | | | PV162 |
| | | 16.3 Reporting protocols | | | | | | | | | | | | | | | | | | | | PV163 |
| **17** | **L/G** | **Provide Temporary Marking of Buried Pipeline Prior to Excavation** | 1 | 62107 | | | | | | | | | | X | | | | | | | | |
| | | 17.1 Locate line (Also in Corrosion 61103) | | | | | | | | | | | | | | | | | | | | PV171 |
| | | 17.2 Install marker | | | | | | | | | | | | | | | | | | | | PV172 |
| | | 17.3 Inspect and maintain marker | | | | | | | | | | | | | | | | | | | | PV173 |
| **18** | **L/G** | **Inspection Following Excavation Activities and Leak Survey After Blasting** | 2 | 62206 | | | | | | | | | | X | | | | | | | | |
| | | 18.1 Utilize leak survey techniques | | | | | | | | | | | | | | | | | | | | PV181 |
| | | 18.2 Monitor for pressure loss | | | | | | | | | | | | | | | | | | | | PV182 |
| **20** | **L/G** | **Inspect Valves** (Also in Mechanical 63204) | 2 | 62203 | | | | | | | | | | X | | | | | | | | |
| | | 20.1 Routine walk-around inspection | | | | | | | | | | | | | | | | | | | | PV201 |
| | | 20.2 External integrity inspection | | | | | | | | | | | | | | | | | | | | PV202 |
| | | 20.3 Function test valve | | | | | | | | | | | | | | | | | | | | PV203 |
| | | 20.4 Leak test valve | | | | | | | | | | | | | | | | | | | | PV204 |
| **27** | **L** | **Inspection of Breakout Tanks** | 2 | 62202 | | | | | | | | | | X | | | | | | | | |
| | | 27.1 Routine monthly inspection of breakout tanks | | | | | | | | | | | | | | | | | | | | PV271 |
| | | 27.2 Inspection of in-service breakout tanks | | | | | | | | | | | | | | | | | | | | PV272 |
| **28** | **L/G** | **Provide Security for Pipeline Facilities** | 1 | 62106 | | | | | | | | | | X | | | | | | | | PV280 |
| | | No Subtasks | | | | | | | | | | | | | | | | | | | | |
| **29** | **L/G** | **Launching/Receiving Inline Inspection Device** | 3 | 62303 | | | | | | | | | | X | | | | | | | | |
| | | 29.1 Launching in-line inspection devices | | | | | | | | | | | | | | | | | | | | PV291 |
| | | 29.2 Receiving in-line inspection devices | | | | | | | | | | | | | | | | | | | | PV292 |
| **32** | | **32.0 Monitoring Excavation Activities** | 1 | 62107 | | | | | | | | | | | | | | | | | | PV320 |

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| Task # | Task Type | API Covered Tasks and Sub-Tasks | Contren Learning Series | | Written Assessments | | | | | | | | | | | | | | | | | | | | Performance Verifications |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Level | Module # | E & I Pipeline Technician | Mechanical Pipeline Technician | Corrosion Preven. Field Tech 1-Measurement | Corrosion Preven. Field Tech 1-Installation | Corrosion Prevention Field Technician 2 | Corrosion Prevention Field Technician 3 | Field and Control Center Operations Technician | Liquid Pipeline Field Operations | Liquid Control Center Operations | Pipeline Maintenance Technician | Gas Maintenance Technician | Gas Pipeline Operations | Non Destructive Testing | Abnormal Operating Conditions-(General) | Abnormal Operating Conditions-(Control Ctr) | Abnormal Operating Conditions-(Gas) | Abnormal Operating Conditions-(Field) | |
| **33** | **L/G** | **Moving In-Service Pipe** | | | | | | | | | | | | X | | | | | | | | | | | |
| | | 33.1 Determine allowable line pressure in section to be moved | 3 | 62305 | | | | | | | | | | | | | | | | | | | | | PV331 |
| | | 33.2 Preparation for movement activities | | | | | | | | | | | | | | | | | | | | | | | PV332 |
| | | 33.3 Moving in-service pipeline | | | | | | | | | | | | | | | | | | | | | | | PV333 |
| **34** | **L/G** | **Inspect Existing Pipe Following Movement** | 3 | 62302/305 | | | | | | | | | | X | | | | | | | | | | | PV340 |
| | | No Subtasks | | | | | | | | | | | | | | | | | | | | | | | |
| **35** | **L/G** | **Measure Clearance From Existing Pipe to Underground Structures Installed by Excavation, Boring, Directional Drilling** | 3 | 62302 | | | | | | | | | | X | | | | | | | | | | | PV350 |
| | | No Subtasks | | | | | | | | | | | | | | | | | | | | | | | |
| **36** | **L/G** | **Abandoning, Safe Disconnect, Purging and Sealing of Pipeline Facilities** | | | | | | | | | | | | X | | | | | | | | | | | |
| | | 36.1 Safe disconnect of pipeline facilities | 3 | 62309 | | | | | | | | | | | | | | | | | | | | | PV361 |
| | | 36.2 Purging of pipeline facilities | | | | | | | | | | | | | | | | | | | | | | | PV362 |
| | | 36.3 Sealing a disconnected portion of pipeline | | | | | | | | | | | | | | | | | | | | | | | PV363 |
| **37** | **L/G** | **Install or Repair Support Structures on Existing Above Ground Components** | 3 | 62304 | | | | | | | | | | X | | | | | | | | | | | PV370 |
| | | No Subtasks | | | | | | | | | | | | | | | | | | | | | | | |
| **38** | **L/G** | **Inspection Activities for Tie-Ins, Pipe Replacements, or Other Components Connecting to an Existing Pipeline** | | | | | | | | | | | | | | | | | | | | | | | |
| | | 38.1 Visually inspect pipe and pipe components | 2 | 62205 | | | | | | | | | | X | | | | | | | | | | | PV381 |
| | | 38.2 Verify non-destructive weld test (NDT) | | | | | | | | | | | | X | | | | | | | | | | | PV382 |
| | | 38.3 Visually inspect that welds meet DOT requirements (API 1104) | | | | | | | | | | | | X | | | | | | | | | | | PV383 |
| | | 38.4 Radiographic Testing of Pipeline Weld | 4 | 62401 | | | | | | | | | | | | | X | | | | | | | | |
| **39** | **L/G** | **Backfilling a Trench Following Maintenance** | 1 | 62107 | | | | | | | | | | X | | | | | | | | | | | PV390 |
| | | No Subtasks | | | | | | | | | | | | | | | | | | | | | | | |
| **40** | **L/G** | **Perform General Pipeline Repair Activities** | 3 | Split | | | | | | | | | | X | | | | | | | | | | | |
| | | 40.1 Tight fitting sleeve | 3 | 62304 | | | | | | | | | | | | | | | | | | | | | PV401 |
| | | 40.2 Oversleeve | 3 | 62304 | | | | | | | | | | | | | | | | | | | | | PV402 |
| | | 40.3 Clock spring | 3 | 62304 | | | | | | | | | | | | | | | | | | | | | PV403 |
| | | 40.4 Plidco split repair sleeve (Identify and use generic term for this area) | 3 | 62304 | | | | | | | | | | | | | | | | | | | | | PV404 |
| | | 40.5 Weld plus coupling (Identify and use generic term for this area) | 3 | 62304 | | | | | | | | | | | | | | | | | | | | | PV405 |
| | | 40.6 Stopple fitting preparation/sandwich valve installation | 3 | 62306 | | | | | | | | | | | | | | | | | | | | | PV406 |
| | | 40.7 Tapping a pipeline 2" and under | 3 | 62304 | | | | | | | | | | | | | | | | | | | | | PV407 |
| | | 40.8 Tapping a pipeline 2 ½" and larger | 3 | 62306 | | | | | | | | | | | | | | | | | | | | | PV408 |
| | | 40.9 Sealing the pipeline with a stopple plugging machine | 3 | 62306 | | | | | | | | | | | | | | | | | | | | | PV409 |
| | | 40.91 Plugging the pipeline with the lock-o-ring completion plug | 3 | 62304/306 | | | | | | | | | | | | | | | | | | | | | PV409-1 |
| **41** | **L/G** | **Conduct Pressure Test** | 2 | 62207 | | | | | | | | | | X | X | | | | | | | | | | PV410 |
| | | No Subtasks | | | | | | | | | | | | | | | | | | | | | | | |
| **42** | **L/G** | **Maintenance Welding on Pipelines** | | | | | | | | | | | | X | | | | | | | | | | | |
| | | 42.1 Repair of arc burns | | | | | | | | | | | | | | | | | | | | | | | PV421 |
| | | 42.2 Repair of defective welds, other than welds containing cracks | | | | | | | | | | | | | | | | | | | | | | | PV422 |
| | | 42.3 Repair of a direct pass on a weld containing a defect other than a crack | 3 | 62308 | | | | | | | | | | | | | | | | | | | | | PV423 |
| | | 42.4 Repair of butt welds containing cracks | | | | | | | | | | | | | | | | | | | | | | | PV424 |
| | | 42.5 Repair of a previously repaired area | | | | | | | | | | | | | | | | | | | | | | | PV425 |
| | | 42.6 Replacement of a weld or cylinder of pipe | | | | | | | | | | | | | | | | | | | | | | | PV426 |
| **52** | **G** | **Leakage Survey** | | | | | | | | | | | | | X | | | | | | | | | | |
| | | 52.1 Conduct vegetation survey | 2 | 62206 | | | | | | | | | | | | | | | | | | | | | PV521 |
| | | 52.2 Conduct a leak survey with a CGD | | | | | | | | | | | | | | | | | | | | | | | PV522 |
| | | 52.3 Conduct a leak survey with a flame ionization unit | | | | | | | | | | | | | | | | | | | | | | | PV523 |
| **59** | **G** | **Vault Maintenance** | 3 | 62310 | | | | | | | | | | | X | | | | | | | | | | PV590 |
| | | No Subtasks | | | | | | | | | | | | | | | | | | | | | | | |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **MECHANICAL** | | | | | | | | | | | | | | | | | | | | | | |
| **19** | **L/G** | **Valve Maintenance** | | Split | | | | | | | | | | | | | | | | | | |
| | | 19.1 Valve body winterization or corrosion inhibition | 1 | 63107 | | X | | | | | | | | | | | | | | | | PV191 |
| | | 19.2 Valve lubrication | 1 | 63107 | | X | | | | | | | | | | | | | | | | PV192 |
| | | 19.3 Valve seat sealing | 1 | 63107 | | X | | | | | | | | | | | | | | | | PV193 |
| | | 19.4 Valve stem packing maintenance | 1 | 63107 | | X | | | | | | | | | | | | | | | | PV194 |
| | | 19.5 Actuator/operator adjustment, electric (Also in E&I 64208) | 3 | 63308 | | X | | | | | | | | | | | | | | | | PV195 |
| | | 19.6 Actuator/operator adjustment, pneumatic | 3 | 63306 | | X | | | | | | | | | | | | | | | | PV196 |
| | | 19.7 Actuator/operator adjustment, hydraulic | 3 | 63307 | | X | | | | | | | | | | | | | | | | PV197 |
| **20** | **L/G** | **Inspect Valves** (Also in Maintenance 62203) | | | | X | | | | | | | | | | | | | | | | |
| | | 20.1 Routine walk-around inspection | | | | | | | | | | | | | | | | | | | | PV201 |
| | | 20.2 External integrity inspection | 2 | 63204 | | | | | | | | | | | | | | | | | | PV202 |
| | | 20.3 Function test valve | | | | | | | | | | | | | | | | | | | | PV203 |
| | | 20.4 Leak test valve | | | | | | | | | | | | | | | | | | | | PV204 |
| **21** | **L/G** | **Repair Valves** | | Split | | | | | | | | | | | | | | | | | | |
| | | 21.1 Repair valve actuator/operator, pneumatic | 3 | 63306 | | X | | | | | | | | | | | | | | | | PV211 |
| | | 21.2 Disassembly/re-assembly of valve | 2 | 63204 | | X | | | | | | | | | | | | | | | | PV212 |
| | | 21.3 Internal inspection of valve | 2 | 63204 | | X | | | | | | | | | | | | | | | | PV213 |
| | | 21.4 Repair valve actuator/operator, hydraulic | 3 | 63307 | | X | | | | | | | | | | | | | | | | PV214 |
| | | 21.5 Repair valve actuator/operator, electric | 3 | 63308 | | X | | | | | | | | | | | | | | | | PV215 |
| **22** | **L** | **Inspect Tank Pressure/Vacuum Breakers and Inspect, Test and Calibrate HVLTank Pressure Relief Valves** | 2 | 63205 | | X | | | | | | | | | | | | | | | | PV220 |
| | | No Subtasks | | | | | | | | | | | | | | | | | | | | |
| **23** | **L/G** | **Maintain and Repair Relief Valves and Pressure Limiting Devices** | | | | X | | | | | | | | | | | | | | | | |
| | | 23.1 Maintain/repair relief valves | 2 | 63205 | | | | | | | | | | | | | | | | | | PV231 |
| | | 23.2 Maintain/repair pressure limiting devices | | | | | | | | | | | | | | | | | | | | PV232 |
| **24** | **L/G** | **Inspect, Test and Calibrate Pressure Limiting Devices and Relief Valves** | 2 | 63205 | | X | | | | | | | | | | | | | | | | PV240 |
| | | No Subtasks | | | | | | | | | | | | | | | | | | | | |
| **ELECTRICAL AND INSTRUMENTATION** | | | | | | | | | | | | | | | | | | | | | | |
| **19** | **L/G** | 19.5 Actuator/operator adjustment, electric (Also in Mechanical 63308) | 2 | 64208 | X | | | | | | | | | | | | | | | | | PV195 |
| **25** | **L/G** | **Inspect, Test and Calibrate Pressures Switches and Transmitters** | | | X | | | | | | | | | | | | | | | | | |
| | | 25.1 Inspect, test and calibrate pressure switches | 2 | 64206 | | | | | | | | | | | | | | | | | | PV251 |
| | | 25.2 Inspect, test and calibrate pressure transmitters | | | | | | | | | | | | | | | | | | | | PV252 |
| **26** | **L/G** | **Verify or Set Protection Parameters for Programmable Controllers and/or Other Instrumentation Control Loops** | 2 | 64207 | X | | | | | | | | | | | | | | | | | PV260 |
| | | No Subtasks | | | | | | | | | | | | | | | | | | | | |
| **30** | **L** | **Test Overfill Protective Devices** | 2 | 64206 | X | | | | | | | | | | | | | | | | | PV300 |
| | | No Subtasks | | | | | | | | | | | | | | | | | | | | |
| **31** | **L** | **Inspect and Calibrate Overfill Protective Devices** | 2 | 64206 | X | | | | | | | | | | | | | | | | | PV310 |
| | | No Subtasks | | | | | | | | | | | | | | | | | | | | |
| **44** | **L** | **CPM Leak Detection** | | | X | | | | | | | | | | | | | | | | | |
| | | 44.1 Inspection, testing and calibrations of leak detection equipment | 2 | 64209 | | | | | | | | | | | | | | | | | | PV441 |
| | | 44.2 Verify the leak detection system meets design parameters | | | | | | | | | | | | | | | | | | | | PV442 |
| **55** | **G** | **Maintain Fixed Gas Detection Equipment** | 2 | 64210 | X | | | | | | | | | | | | | | | | | PV550 |
| | | No Subtasks | | | | | | | | | | | | | | | | | | | | |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **LIQUID PIPELINE FIELD OPERATIONS** | | | | | | | | | | | | | | | | | | | | | | |
| **43‡** | **L/G** | **Operations of a Pipeline System** | | Split | | | | | | | | | | | | | | | | | | |
| | | 43.1 Start-up of a pipeline | 1 | 60105 | | | | | | | X | | | | | | | | | | | PV431 |
| | | 43.2 Shutdown of a pipeline | 1 | 60105 | | | | | | | X | | | | | | | | | | | PV432 |
| | | 43.3 Monitor pressures, flows, communications and line integrity and maintain them within allowable limits | 1 | 60106 | | | | | | | X | | | | | | | | | | | PV433 |
| | | 43.4 Manually or remotely open or close valves or other equipment | 1 | 60105 | | | | | | | X | | | | | | | | | | | PV434 |
| **63** | **L** | **Operations of a Pipeline System** | | Split | | | | | | | | | | | | | | | | | | |
| | | 63.1 Start-up of a pipeline | 1 | 60105 | | | | | | | | X | | | | | | | | | | PV631 |
| | | 63.2 Shutdown of a pipeline | 1 | 60105 | | | | | | | | X | | | | | | | | | | PV632 |
| | | 63.3 Monitor pressures, flows, communications and line integrity and maintain them within allowable limits | 1 | 60106 | | | | | | | | X | | | | | | | | | | PV633 |
| | | 63.4 Manually or remotely open or close valves or other equipment | 1 | 60105 | | | | | | | | X | | | | | | | | | | PV634 |
| **LIQUID PIPELINE CONTROL CENTER OPERATIONS** | | | | | | | | | | | | | | | | | | | | | | |
| **43‡** | **L/G** | **Operations of a Pipeline System** | | Split | | | | | | | | | | | | | | | | | | |
| | | 43.1 Start-up of a pipeline | 1 | 65106 | | | | | | | X | | | | | | | | | | | PV431 |
| | | 43.2 Shutdown of a pipeline | 1 | 65106 | | | | | | | X | | | | | | | | | | | PV432 |
| | | 43.3 Monitor pressures, flows, communications and line integrity and maintain them within allowable limits | 1 | 65105 | | | | | | | X | | | | | | | | | | | PV433 |
| | | 43.4 Manually or remotely open or close valves or other equipment | 1 | 65106 | | | | | | | X | | | | | | | | | | | PV434 |
| **64** | **L** | **Operations of a Pipeline System** | | Split | | | | | | | | | | | | | | | | | | |
| | | 64.1 Start-up of a pipeline | 1 | 65106 | | | | | | | | | X | | | | | | | | | PV641 |
| | | 64.2 Shutdown of a pipeline | 1 | 65106 | | | | | | | | | X | | | | | | | | | PV642 |
| | | 64.3 Monitor pressures, flows, communications and line integrity and maintain them within allowable limits | 1 | 65105 | | | | | | | | | X | | | | | | | | | PV643 |
| | | 64.4 Manually or remotely open or close valves or other equipment | 1 | 65106 | | | | | | | | | X | | | | | | | | | PV644 |
| **GAS PIPELINE OPERATIONS** | | | | | | | | | | | | | | | | | | | | | | |
| **43‡** | **L/G** | **Operations of a Pipeline System** | | Split | | | | | | | | | | | | X | | | | | | |
| | | 43.1 Start-up of a pipeline | 1 | 67104/105 | | | | | | | | | | | | | | | | | | PV431 |
| | | 43.2 Shutdown of a pipeline | | | | | | | | | | | | | | | | | | | | PV432 |
| | | 43.3 Monitor pressures, flows, communications and line integrity and maintain them within allowable limits | | | | | | | | | | | | | | | | | | | | PV433 |
| | | 43.4 Manually or remotely open or close valves or other equipment | | | | | | | | | | | | | | | | | | | | PV434 |
| **65** | **G** | **Operations of a Pipeline System** | | Split | | | | | | | | | | | | X | | | | | | |
| | | 65.1 Start-up of a pipeline | 1 | 67104/105 | | | | | | | | | | | | | | | | | | PV651 |
| | | 65.2 Shutdown of a pipeline | | | | | | | | | | | | | | | | | | | | PV652 |
| | | 65.3 Monitor pressures, flows, communications and line integrity and maintain them within allowable limits | | | | | | | | | | | | | | | | | | | | PV653 |
| | | 65.4 Manually or remotely open or close valves or other equipment | | | | | | | | | | | | | | | | | | | | PV654 |
| **50** | **G** | **Purge Gas from a Pipeline** | 1 | 67104/105 | | | | | | | | | | | | X | | | | | | PV500 |
| | | No Subtasks | | | | | | | | | | | | | | | | | | | | |
| **51** | **G** | **Purge Air from a Pipeline** | 1 | 67104/105 | | | | | | | | | | | | X | | | | | | PV510 |
| | | No Subtasks | | | | | | | | | | | | | | | | | | | | |
| **54** | **G** | **Test Remote Control Shutdown Devices** | 1 | 67104/105 | | | | | | | | | | | | X | | | | | | PV540 |
| **56** | **G** | **Perform Incremental Pressure Increases to Uprate MAOP** | 1 | 67104/105 | | | | | | | | | | | | X | | | | | | PV560 |
| | | No Subtasks | | | | | | | | | | | | | | | | | | | | |
| **57** | **G** | **Operate Odorant Equipment** | 1 | 67104/105 | | | | | | | | | | | | X | | | | | | PV570 |
| | | No Subtasks | | | | | | | | | | | | | | | | | | | | |
| **58** | **G** | **Monitor Odorant Level** | 1 | 67104/105 | | | | | | | | | | | | X | | | | | | PV580 |
| | | No Subtasks | | | | | | | | | | | | | | | | | | | | |
| | | Yellow indicates most recent changes | | | | | | | | | | | | | | | | | | | | |
| **Note 3** | **43‡** | CT 43 Will no longer be available after 12/6/08. | | | | | | | | | | | | | | | | | | | | |
| **Note 4** | | AOC General and AOC Gas have been combined into AOC Field | | | | | | | | | | | | | | | | | | | | |

# OQSG / OQforAll / NCCER Comparison Matrix

| OQSG Topside Tasks | | OQSG Underwater Tasks | | INGAA | | | OQforAll | | NCCER | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Task # | Task Name | Task # | | Task # | Task Name | 49 CFR Reference | Task # | Task Name | Task # | Module # | Task Name |
| **CT01** | **Conducting Annual Cathodic Protection Surveys** | **CT01U** | **Cathodic Protection Inspection on Underwater Facilities** | **OQ110** | **Perform cathodic protection surveys on a section of pipeline** | **192.465(a)** | | | **1** | **Split** | **Conduct Annual Surveys or Electrically Inspect Unprotected Bare Pipe** |
| 1.1 | Function of conducting annual cathodic protection surveys | 1.1 | Prepare & Calibrate Test Equipment | | | | 195-0514 | Cathodic Protection Systems: Conducting Annual Cathodic Protection Surveys | 1.1 | 61109 | Measure structure-to-soil potentials |
| 1.2 | Measure structure-to-soil potential | 1.2 | Take & Record CP Readings | | | | | - OR - | 1.2 | 61205 | Conduct close interval survey |
| 1.3 | Close interval survey | | | OQ085 | Conduct test to determine cathodic protection current requirements | 192.457(a) | 192-0512 | Pipe-to-Soil Testing | 1.3 | 61203 | Test to detect interference |
| 1.4 | Interference testing | | | OQ120 | Inspect reverse current switches, diodes, and interference bonds | 192.465(c) | | | 1.4 | 61205 | Inspect and perform electrical test of bonds |
| 1.5 | Electrical isolation from foreign structures | | | | | | | | 1.5 | 61108 | Inspect and test isolation devices |
| 1.6 | Inspect and electrically test bonds | | | | | | | | | | |
| 1.7 | Visual atmospheric inspection | | | | | | | | | | |
| 1.8 | Abnormal Operating Conditions | 1.3 | Abnormal Operating Conditions | | | | | | | | |
| **CT02** | **Maintain Test Leads** | | | | **No Comparable Task Listed in INGAA Plan** | | | | **2** | **61109** | **Maintain Test Leads** |
| 2.1 | Function of test leads | | | | | | 195-0503 | Cathodic Protection Systems: Maintain Test Leads | 2.1 | | Inspect and Verify Test Lead Continuity |
| 2.2 | Inspect and Verify Test Lead Continuity | | | | | | | | 2.2 | | Repair damaged test leads |
| 2.3 | Repair or Replace Damaged Test Lead | | | | | | | - OR - | 2.3 | | Install test leads by non-exothermic welding methods |
| 2.4 | Abnormal Operating Conditions | | | | | | 192-0503 | Cathodic Protection Systems - Electrical Connections | 2.4 | | Install test leads by exothermic welding methods |
| **CT03** | **Inspect Cathodic Protection Rectifiers** | | | **OQ115** | **Inspect cathodic protection rectifiers or other impressed current power sources to insure that it is operating correctly** | **192.465(b)** | | | **3** | **61108** | **Inspect Rectifier** |
| 3.1 | Obtain a voltage and current output readings from rectifier | | | | | | 195-0505 | Cathodic Protection System Testing : Inspect Cathodic Protection Rectifiers | 3.1 | | Obtain a voltage and current output reading from a rectifier |
| 3.2 | Perform cathodic protection rectifiers on/off test | | | | | | | - OR - | 3.2 | | Check for proper operation of a rectifier |
| 3.3 | Abnormal Operating Conditions | | | | | | 192-0505 | Cathodic Protection System Testing | | | |
| **CT04** | **Cathodic Protection Rectifier Maintenance and Repair** | | | | **No Comparable Task Listed in INGAA Plan** | | | | **4** | **61202** | **Maintain Rectifier** |
| 4.1 | Troubleshoot and repair rectifiers | | | | | | 195-0501 | Cathodic Protection Systems: Rectifier Maintenance And Repair | 4.1 | | Troubleshoot rectifier bond connections |
| 4.2 | Abnormal Operating Conditions | | | | | | | - OR - | 4.2 | | Repair or replace defective rectifier components |
| | | | | | | | 192-0501 | Cathodic Protection Maintenance | 4.3 | | Adjustment of rectifier |
| **CT05** | **Electrically Inspect Bare Pipe** | | | | **No Comparable Task Listed in INGAA Plan** | | | | | | **No Comparable Task Listed in API/NCCER Task List** |
| 5.1 | Function of electrical inspection of bare pipe | | | | | | 195-0516 | Cathodic Protection Systems: Electrically Inspect Bare Pipe | | | |
| 5.2 | Measure soil resistivity | | | | | | | - OR - | | | |
| 5.3 | Measure soil-to-soil potential surveys | | | | | | 192-0511 | Soil Resistivity Testing | | | |
| 5.4 | Abnormal Operating Conditions | | | | | | | | | | |
| **CT06** | **Prevention of Atmospheric Corrosion** | **CT02U** | **Prevention of External Corrosion on Underwater Pipelines** | **OQ185** | **Monitor atmospheric corrosion on above ground piping** | **192.481** | | | **7** | **Split** | **Inspect & Perform Prevention Methods for Atmospheric Corrosion** |
| 6.1 | Understand the function of preventing atmospheric corrosion | | | | | | 195-0404 | Prevention of Atmospheric Corrosion | 7.1 | 61106 | Visual inspection of atmospheric coating |
| 6.2 | Inspection of coatings | 2.1 | Inspect Existing Coatings | | | | | | 7.2 | 61106 | Prepare surface for atmospheric coating using hand and power tools |
| 6.3 | Perform surface preparation | 2.2 | Perform Surface Preparation | | | | | | 7.3 | 61106 | Perform water pressure cleaning |
| 6.4 | Perform the application of coating | 2.3 | Repair Coatings and Application | | | | | | 7.4 | 61207 | Prepare surface for atmospheric coating by abrasive blasting |
| 6.5 | Abnormal Operating Conditions | 2.4 | Abnormal Operating Conditions | | | | | | 7.5 | 61106 | Apply atmospheric coating using hand application methods |
| | | | | | | | | | 7.6 | 61208 | Apply atmospheric coating using spray applications |

# OQSG / OQforAll / NCCER Comparison Matrix

| OQSG Topside Tasks | | OQSG Underwater Tasks | | INGAA | | | OQforAll | | NCCER | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Task # | Task Name | Task # | | Task # | Task Name | 49 CFR Reference | Task # | Task Name | Task # | Module # | Task Name |
| | | | | | | | | | 7.7 | 61206 | Use coating inspection tools |
| **CT07** | **Measure Wall Thickness of Pipe** | **CT03U** | **Measure Wall Thickness of Underwater Pipe** | | **No Comparable Task Listed in INGAA Plan - Listed as a subtask for various tasks** | | | | **8** | **61104** | **Measure Wall Thickness** |
| 7.1 | Measuring the wall thickness of pipe | 3.1 | Prepare & Calibrate Test Equipment | | | | 195-0405 | Measure Wall Thickness of Pipe | 8.1 | | Measure pit depth with pit gauge |
| 7.2 | Measure pit depth with pit gauge | 3.3 | Measure Pit Depth and Diameter using a Pit Gauge | | | | | | 8.2 | | Measure wall thickness with handheld ultrasonic meter |
| 7.3 | Measure pipe thickness with ultrasonic thickness meter | 3.2 | Measure Wall Thickness Using Ultrasonic Testing Methods | | | | | | 8.3 | | Measure corroded area |
| 7.4 | Collect RSTRENG Data | 3.4 | Abnormal Operating Conditions | | | | | | | | |
| 7.5 | Abnormal Operating Conditions | | | | | | | | | | |
| **CT08** | **Conducting Cathodic Protection Remediation** | **CT04U** | **Conduct Underwater Cathodic Protection Remediation** | **OQ160** | **Install test leads on the pipeline according to appropriate procedures and coat properly** | **192.471(a),(b)** | | | **9** | **Split** | **Cathodic Protection Remediation** |
| 8.1 | Install electrical bonds | 4.1 | Install Galvanic Anodes on Submerged Pipeline or Facilities | | | | 195-0515 | Cathodic Protection Systems: Conducting Cathodic Protection Remediation | 9.1 | 61203 | Install bonds |
| 8.2 | Install Galvanic and impressed current anodes | 4.2 | Abnormal Operating Conditions | | | | | - OR - | 9.2 | 61201 | Install galvanic anodes |
| 8.3 | Install rectifiers and transformers | | | | | | 192-1404 | Casing Vents and Seals | 9.3 | 61201 | Install rectifiers |
| 8.4 | Install test stations | | | | | | | | 9.4 | 61201 | Install impressed current groundbeds |
| 8.5 | Perform thermite welding procedure | | | | | | | | 9.5 | 61204 | Repair shorted casings |
| 8.6 | Conduct electrolyte resistivity measurements | | | | | | | | | | |
| 8.7 | Locate shorted casings | | | | | | | | | | |
| 8.8 | Abnormal Operating Conditions | | | | | | | | | | |
| **CT09** | **Monitoring for Internal Corrosion** | | | **OQ180** | **Inspect coupons or other devices used for monitoring internal corrosion in areas where corrosive gas is being transported** | **192.477** | | | **10** | **61111** | **Monitor for Internal Corrosion** |
| 9.1 | Extract or insert corrosion coupons | | | | | | 195-0403 | Corrosion Monitoring - Internal | 10.1 | | Insert and remove coupons |
| 9.2 | Extract or insert corrosion probes | | | | | | | - OR - | 10.2 | | Monitor probes (on-line) |
| 9.3 | Collecting a sample of pipeline contents | | | | | | 192-0401 | Corrosion Monitoring – Atmospheric, External, and Internal | | | |
| 9.4 | Abnormal Operating Conditions | | | | | | | | | | |
| **CT10** | **Inspect Buried Pipe When Exposed** | | | **OQ090** | **For buried pipe that is exposed, examine the condition of the coating of the pipe for evidence of corrosion** | **192.459** | | | **5** | **61105** | **Inspect Buried Pipe When Exposed** |
| 10.1 | Inspect for physical damage to pipe | | | | | | 195-0808 | Inspect Buried Pipe When Exposed | 5.1 | | Inspect for physical damage on buried or submerged pipe |
| 10.2 | Inspect (Examine) pipe coating | | | | | | | | 5.2 | | Inspect for external corrosion on buried or submerged pipe |
| 10.3 | Inspect for corrosion | | | | | | | | 5.3 | | Inspect the condition of external coating on buried or submerged pipe |
| 10.4 | Abnormal Operating Conditions | | | | | | | | | | |
| **CT11** | **Inspect, Test and Calibrate Overfill Protective Devices** | | | | **No INGAA Task Listed - Primarily a Liquids Task** | | | | **30/31** | **64206** | **Test Overfill Protective Devices / Inspect and Calibrate Overfill Protective Devices** |
| 11.1 | Function of overfill protective devices | | | | | | 195-0809 | Inspect, Test and Calibrate Overfill Protective Devices | | | No Subtasks Listed |
| 11.2 | Inspect and calibrate overfill protective devices | | | | | | | | | | |
| 11.3 | Abnormal Operating Conditions | | | | | | | | | | |
| **CT12** | **Internal Corrosion Remediation** | | | | **No INGAA Task Listed - Primarily a Liquids Task** | | | | **11** | **61111** | **Perform Internal Corrosion Remdiation** |
| 12.1 | Adjust inhibitor injection rates | | | | | | 195-1422 | Internal Corrosion Remediation | | | No Subtasks Listed |
| 12.2 | Abnormal Operating Conditions | | | | | | | | | | |
| **CT13** | **Inspect Internal Pipe Surfaces** | | | **OQ170** | **Inspect for internal corrosion on ends adjacent to removed section of pipe** | **192.745(b)(1)** | | | **12** | **61110** | **Inspect Internal Pipe Surface** |

# OQSG / OQforAll / NCCER Comparison Matrix

| OQSG Topside Tasks | | OQSG Underwater Tasks | | INGAA | | | OQforAll | | NCCER | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Task # | Task Name | Task # | | Task # | Task Name | 49 CFR Reference | Task # | Task Name | Task # | Module # | Task Name |
| 13.1<br>13.2<br>13.3 | Identify different types of internal corrosion and their mechanisms<br>Identify internal corrosion evaluation tools<br>Abnormal Operating Conditions | | | | | | 195-0406 | Inspect Internal Pipe Surfaces | | | No Subtasks Listed |
| **CT14** | **Application and Repair of External Coatings** | | | **OQ095** | **Inspect and properly apply approved coatings to above and below ground piping** | **192.461(a), 192.479(b)(3)** | | | **13** | **61107** | **Apply and Repair External Coating on Buried or Submerged Pipe** |
| 14.1<br>14.2<br>14.3 | Identify and apply external coatings<br>Application and repair of external coatings<br>Abnormal Operating Conditions | | | | | | 195-0407<br>- OR -<br>192-0402 | Application and Repair of External Coatings<br>- OR -<br>Coating Maintenance | 13.1<br>13.2<br>13.3<br>13.4<br>13.5 | 61107<br>61106<br>61207<br>61107<br>61208 | Prepare surface for coating using hand and power tools<br>Perform water pressure cleaning<br>Prepare surface for coating by abrasive blasting<br>Apply coating using hand application methods<br>Apply coating using spray applications |
| **CT15** | **Place and Maintain Line Markers** | **CT05U** | **Conduct Temporary Marking of Underwater Pipelines** | **OQ355** | **Placing and maintaining pipeline markers** | **192.707** | | | **14** | **62106** | **Place and Maintain Line Markers** |
| 15.1<br>15.2<br>15.3<br>15.4<br>15.5 | Place and maintain line markers<br>Locate pipeline<br>Install line markers<br>Inspect and maintain line markers and aerial line markers<br>Abnormal Operating Conditions | 5.1<br>5.2<br>5.3<br>5.4 | Locate Pipeline<br>Determine Pipeline Depth<br>Install Temporary Pipeline Marker<br>Abnormal Operating Conditions | | | | 195-1413<br>- OR -<br>192-1413 | Placing & Maintaining Line Markers<br>- OR -<br>Line Markers | 14.1<br>14.2<br>14.3<br>14.4 | | Locate line<br>Install marker<br>Inspect and maintain marker<br>Inspect and maintain aerial line markers |
| **CT16** | **(Liquid) Inspect Surface Conditions of Right of Way And Perform Leak Surveys for Liquid Pipelines** | | | **No Comparable Task Listed in INGAA Plan** | | | | | **15** | **62201** | **Inspect Surface Conditions of Right of Way** |
| 16.1<br>16.2<br>16.3 | Inspect surface conditions of right of way<br>Follow company's reporting protocols<br>Abnormal Operating Conditions | | | | | | 195-1204 | Inspect Surface Conditions of Right of Way , Perform Leak Survey | 15.1<br>15.2 | | Visual inspection of the surface<br>Reporting protocols |
| **CT16** | **(Gas) Inspect Surface Conditions of Right of Way And Perform Leak Surveys for Gas Pipelines** | | | **No Comparable Task Listed in INGAA Plan** | | | | | **15** | **62201** | **Inspect Surface Conditions of Right of Way** |
| 16.1<br>16.2<br>16.3<br>16.4 | Inspect surface conditions of right of way<br>Perform gas leakage surveys<br>Follow the company's reporting protocols<br>Abnormal Operating Conditions | | | | | | 192-1204 | Inspect Surface Conditions of Right of Way, Perform Leak Survey | 15.1<br>15.2 | | Visual inspection of the surface<br>Reporting protocols |
| **CT17** | **Inspect Navigable Waterway Crossings** | | | **No Comparable Task Listed in INGAA Plan** | | | | | **16** | **62201** | **Inspect Navigable Waterway Crossing** |
| 17.1<br>17.2<br>17.3 | Inspect navigable waterway crossings<br>Use of probes and sonar equipment<br>Abnormal Operating Conditions | | | | | | 195-1205 | Inspect Navigable Waterway Crossings | 16.1<br>16.2<br>16.3 | | Use of probing equipment<br>Use of sonar equipment<br>Reporting protocols |
| **CT18** | **Inspection of Breakout Tanks** | | | **No Comparable Task Listed in INGAA Plan** | | | | | **27** | **62202** | **Inspection of Breakout Tanks** |
| 18.1<br>18.2<br>18.3<br>18.4<br>18.5 | Function of regulatory compliance and inspection for breakout tanks<br>Inspect breakout tanks in accordance with API Standard 653<br>Inspect breakout tanks in accordance with API Standard 510<br>Inspect other breakout tanks<br>Abnormal Operating Conditions | | | | | | 195-0810 | Inspection of Breakout Tanks | 27.1<br>27.2 | | Routine monthly inspection of breakout tanks<br>Inspection of in-service breakout tanks |
| **CT19** | **Provide Temporary Marking of Buried Pipeline Prior to Excavation** | | | **OQ310** | **Temporary marking of buried pipelines** | **192.614(c)(5)** | | | **17** | **62107** | **Provide Temporary Marking of Buried Pipeline Prior to Excavation** |
| 19.1<br>19.2<br>19.3<br>19.4<br>19.5 | Function of temporary marking of buried pipeline and the locating equipment<br>Locate pipeline<br>Install temporary markers<br>Determine depth of pipeline<br>Abnormal Operating Conditions | | | | | | 195-0801<br>- OR -<br>192-0801 | Provide Temporary Marking of Buried Pipeline Prior to Excavation<br>- OR -<br>Locating Pipelines | 17.1<br>17.2<br>17.3 | | Locate line<br>Install marker<br>Inspect and maintain marker |

# OQSG / OQforAll / NCCER Comparison Matrix

| OQSG Topside Tasks | | OQSG Underwater Tasks | | INGAA | | | OQforAll | | NCCER | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Task # | Task Name | Task # | | Task # | Task Name | 49 CFR Reference | Task # | Task Name | Task # | Module # | Task Name |
| **CT20** | **Inspection Following Excavation Activities And Leak Survey After Blasting** | | | **OQ315** | **Inspect excavation activities that may result in damage to the pipeline including blasting activities** | **192.614(c)(6)** | | | **18** | **62206** | **Inspection Following Excavation Activities and Leak Survey After Blasting** |
| 20.1 | Function of inspection procedures and leak surveys | | | | | | 195-0804 | Inspection After Excavation Activities and Leak Survey After Blasting | 18.1 | | Utilize leak survey techniques |
| 20.2 | Utilize leak survey techniques | | | | | | | | 18.2 | | Monitor for pressure loss |
| 20.3 | Monitor for pressure loss | | | | | | | | | | |
| 20.4 | Abnormal Operating Conditions | | | | | | | | | | |
| **CT21** | **Provide Security for Pipeline Facilities** | | | **OQ345** | **Patrol transmission lines** | **192.705** | | | **28** | **62106** | **Provide Security for Pipeline Facilities** |
| 21.1 | Provide protection to pipeline facilities | | | | | | 195-3001 | Provide Security for Pipeline Facilities | | | No Subtasks Listed |
| 21.2 | Abnormal Operating Conditions | | | | | | | | | | |
| | | | | | | | | | **22** | **63205** | **Inspect Tank Pressure/Vacuum Breakers and Inspect, Test and Calibrate HVL Tank Pressure Relief Valves** |
| | | | | | | | 195-0810 | Inspection of Breakout Tanks | | | |
| **CT22** | **Inspect Valves** | **CT06U** | **Conduct Underwater Valve Inspection, Maintenance and Repair** | **OQ420** | **Inspect, maintain and partially operate valves** | **192.745** | | | **20** | **62203** | **Inspect Valves** |
| 22.1 | Inspect valves | 6.1 | Identify Valve Types & Components | | | | 195-1427VI | Valve Inspection | 20.1 | | Routine walk-around inspection |
| 22.2 | Conduct routine walk around inspection | 6.2 | Conduct Visual Inspection of Valves & Flanges | | | | | - OR - | 20.2 | | External integrity inspection |
| 22.3 | Conduct external integrity inspection of the valve | 6.3 | Identify Maintenance Procedures | | | | 192-1427 | Valve Maintenance* | 20.3 | | Function test valve |
| 22.4 | Perform a function test of the valve | 6.4 | Repair Valve as Instructed | | | | | | 20.4 | | Leak test valve |
| 22.5 | Abnormal Operating Conditions | 6.5 | Abnormal Operating Conditions | | | | | | | | |
| **CT23** | **Repair Valves** | | | | **No Comparable Task Listed in INGAA Plan** | | | | **21** | **Split** | **Repair Valves** |
| 23.1 | Understand valve types and components | 6.1 | Identify Valve Types & Components | | | | 195-1427VR | Valve Repair | 21.1 | 63306 | Repair valve actuator/operator, pneumatic |
| 23.2 | Perform preventive maintenance | 6.3 | Identify Maintenance Procedures | | | | | | 21.2 | 63204 | Disassembly/re-assembly of valve |
| 23.3 | Repair valves and actuators/operators | 6.4 | Repair Valve as Instructed | | | | | | 21.3 | 63204 | Internal inspection of valve |
| 23.4 | Abnormal Operating Conditions | 6.5 | Abnormal Operating Conditions | | | | | | 21.4 | 63307 | Repair valve actuator/operator, hydraulic |
| | | | | | | | | | 21.5 | 63308 | Repair valve actuator/operator, electric |
| **CT24** | **Inspect, Test and Calibrate Relief Valves** | | | | **No Comparable Task Listed in INGAA Plan** | | | | **24** | **63205** | **Inspect, Test and Calibrate Pressure Limiting Devices and Relief Valves** |
| 24.1 | Function of relief valves | | | | | | 195-1804 | Inspect, Test and Calibrate Relief Valves | | | No Subtasks Listed |
| 24.2 | Understand terminology associated with inspecting, testing and calibrating relief valves | | | | | | | - OR - | | | |
| 24.3 | Identify procedures for inspection, testing and calibration of relief valves | | | | | | 192-1803 | Pressure Regulating, Limiting, and Relief Devices - Operation and Maintenance | | | |
| 24.4 | Abnormal Operating Conditions | | | | | | | | | | |
| **CT25** | **Maintain/Repair Relief Valves** | | | | **No Comparable Task Listed in INGAA Plan** | | | | **23** | **63205** | **Maintain and Repair Relief Valves and Pressure Limiting Devices** |
| 25.1 | Identify critical parts associated with a relief valve | | | | | | 195-1805 | Maintain/Repair Relief Valves | 23.1 | | Maintain/repair relief valves |
| 25.2 | Disassemble, clean, inspect, repair, and replace internal components of a relief valve | | | | | | | - OR - | 23.2 | | Maintain/repair pressure limiting devices |
| 25.3 | Repair and calibrate the sensing device and re-assemble and re-install the valve | | | | | | 192-1803 | Pressure Regulating, Limiting, and Relief Devices - Operation and Maintenance | | | |
| 25.4 | Abnormal Operating Conditions | | | | | | | | | | |
| **CT26** | **Inspect, Test and Calibrate Pressure Limiting Devices** | | | **OQ405** | **Inspect and test pressure limiting and regulating devices** | **192.739** | | | **24** | **63205** | **Inspect, Test and Calibrate Pressure Limiting Devices and Relief Valves** |
| 26.1 | Recognize and locate pressure limiting devices | | | | | | 195-1806 | Inspect, Test and Calibrate Pressure Limiting Devices | | | No Subtasks Listed |
| 26.2 | Identify procedures for isolation or removal of a pressure limiting device | | | | | | | - OR - | | | |

# OQSG / OQforAll / NCCER Comparison Matrix

| OQSG Topside Tasks | | OQSG Underwater Tasks | | INGAA | | | OQforAll | | NCCER | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Task # | Task Name | Task # | | Task # | Task Name | 49 CFR Reference | Task # | Task Name | Task # | Module # | Task Name |
| 26.3 | Inspect, test, and calibrate pressure limiting devices | | | | | | 192-1803 | Pressure Regulating, Limiting and Relief Devices - Operation and Maintenance | | | |
| 26.4 | Repair and reinstall pressure limiting devices | | | | | | | | | | |
| 26.5 | Abnormal Operating Conditions | | | | | | | | | | |
| **CT27** | **Inspect, Test and Calibrate Pressure Switches and Transmitters** | | | **No Comparable Task Listed in INGAA Plan** | | | | | **25** | **64206** | **Inspect, Test and Calibrate Pressure Switches and Transmitters** |
| 27.1 | Identify testing methods | | | | | | 195-1807 | Inspect, Test and Calibrate Pressure Switches and Transmitters | 25.1 | | Inspect, test and calibrate pressure switches |
| 27.2 | Inspect, test, and calibrate pressure switches and transmitters | | | | | | | - OR - | 25.2 | | Inspect, test and calibrate pressure transmitters |
| 27.3 | Abnormal Operating Conditions | | | | | | 192-1803 | Pressure Regulating, Limiting and Relief Devices - Operation and Maintenance | | | |
| **CT28** | **Verify or Set Protection Parameters for Programmable Controllers and/or other Instrumentation Control Loops** | | | **No Comparable Task Listed in INGAA Plan** | | | | | **26** | **64207** | **Verify or Set Protection Parameters for Programmable Controllers and/or Other Instrumentation Control Loops** |
| 28.1 | Functions of a PLC and elements | | | | | | 195-1808 | Programmable Logic Controllers | | | No Subtasks Listed |
| 28.2 | Verify data set points, parameters and data location within PLC program | | | | | | | | | | |
| 28.3 | Calibrate, test and document system set points | | | | | | | | | | |
| 28.4 | Abnormal Operating Conditions | | | | | | | | | | |
| **CT29** | **Moving In-Service Pipe** | **CT07U** | **Movement of In-Service Underwater Pipeline** | **No Comparable Task Listed in INGAA Plan** | | | | | **33** | **62305** | **Moving In-Service Pipe** |
| 29.1 | Determine allowable line pressure in section of pipe | | | | | | 195-1402MP | Moving In-Service Pipe | 33.1 | | Determine allowable line pressure in section to be moved |
| 29.2 | Prepare for pipeline movement activities | | | | | | | | 33.2 | | Preparation for movement activities |
| 29.3 | Move in-service pipe | 7.1 | Move In-Service Pipeline | | | | | | 33.3 | | Moving in-service pipeline |
| 29.4 | Abnormal Operating Conditions | 7.3 | Abnormal Operating Conditions | | | | | | | | |
| **CT30** | **Inspect Existing Pipe Following Movement** | | | **No Comparable Task Listed in INGAA Plan** | | | | | **34** | **62302** | **Inspect Existing Pipe Following Movement** |
| 30.1 | Function of inspecting an existing pipe following a movement | | | | | | 195-0805 | Inspect Existing Pipe Following Movement | | | No Subtasks Listed |
| 30.2 | Inspect pipeline for secondary stresses, physical damage, corrosion and coating damage | 7.2 | Conduct Inspection of Pipeline for Secondary Stresses, Physical Damage and Coating Damage | | | | | | | | |
| 30.3 | Abnormal Operating Conditions | 7.3 | Abnormal Operating Conditions | | | | | | | | |
| **CT31** | **Measure Clearance from Existing Pipe to Underground Structures Installed by Excavation, Boring, Directional Drilling** | | | **No Comparable Task Listed in INGAA Plan** | | | | | **35** | **62302** | **Measure Clearance From Existing Pipe to Underground Structures Installed by Excavation, Boring, Directional Drilling** |
| 31.1 | Function of inspecting clearances between existing pipes and underground structures and equipment used to perform the inspection | | | | | | 195-1405CG | Inspection of Clearance of Existing Pipe to Underground Structures | | | No Subtasks Listed |
| 31.2 | Assure minimum clearances are maintained and that interference and corrosion control testing are performed during the installation of | | | | | | | - OR - | | | |
| 31.3 | Abnormal Operating Conditions | | | | | | 192-1405 | Underground Clearances | | | |
| **CT32** | **Abandoning, Safe Disconnect, Purging, and Sealing of Pipeline Facilities** | **CT08U** | **Abandoning, Safe Disconnect, Purging and Sealing of Underwater Pipelines** | **OQ385** | **Abandon or deactivate facilities** | **192.727** | | | **36** | **62309** | **Abandoning, Safe Disconnect, Purging and Sealing of Pipeline Facilities** |
| 32.1 | Function of and requirements for permanently or temporarily decommissioning or removing a pipeline facility from service | 8.4 | Bury Disconnected Segment of Pipeline | | | | 195-1401 | Abandoning, Safe Disconnect Purging, and Sealing of Pipeline Facilities | 36.1 | | Safe disconnect of pipeline facilities |
| 32.2 | Safely disconnect pipeline facilities | 8.2 | Safely Disconnect Pipeline | | | | | - OR - | 36.2 | | Purging of pipeline facilities |
| 32.3 | Purge pipeline facilities | 8.1 | Purge Pipeline | | | | 192-1401 | Abandonment or Inactivation of Facilities | 36.3 | | Sealing a disconnected portion of pipeline |
| 32.4 | Seal a disconnected portion of pipeline | 8.3 | Seal Disconnected Segment of Pipeline | | | | | | | | |
| 32.5 | Abnormal Operating Conditions | 8.5 | Abnormal Operating Conditions | | | | | | | | |

# OQSG / OQforAll / NCCER Comparison Matrix

| OQSG Topside Tasks | | OQSG Underwater Tasks | | INGAA | | | OQforAll | | NCCER | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Task # | Task Name | Task # | | Task # | Task Name | 49 CFR Reference | Task # | Task Name | Task # | Module # | Task Name |
| **CT33** | **Installation, or Replacement/Repair of Support Structures On Existing or New Aboveground Components** | **CT09U** | **Installation, Replacement or Repair of Support Structures on Underwater Components** | **No Comparable Task Listed in INGAA Plan** | | | | | **37** | **62304** | **Install or Repair Support Structures on Existing Aboveground Components** |
| 33.1 | Replace or repair support structures on existing or new aboveground components | 9.1 | Replace or Repair Support Structures on Existing Underwater Components | | | | 195-1424 | Installation, Replacement or Repair of Support Structures | | | No Subtasks Listed |
| 33.2 | Install additional or revised support structure elements to existing aboveground structures | 9.2 | Install Additional Underwater Support Structure Elements to Components | | | | | - OR - | | | |
| 33.3 | Abnormal Operating Conditions | 9.3 | Abnormal Operating Conditions | | | | 192-1424 | Support and Anchor Maintenance – Exposed Pipe* | | | |
| **CT34** | **Inspection Activities for Tie-ins, Pipeline Replacements, or Other Components Connecting to an Existing Pipeline** | **CT10U** | **Inspection of Underwater Pipeline Facilities** | **No Comparable Task Listed in INGAA Plan** | | | | | **38** | **62205** | **Inspection Activities for Tie-ins, Pipe Replacements, or Other Components Connecting to an Existing Pipeline** |
| 34.1 | Function of inspection activities for tie-ins, pipe replacements, or other components connecting to an existing pipeline | 10.1 | Conduct General Pipeline Inspection | | | | 195-0806 | Inspection Activities for Tie-ins, Pipeline Replacements, or Other Components | 38.1 | | Visually inspect pipe and pipe components |
| | | 10.2 | Inspect Pipeline Crossings | | | | | | 38.2 | | Verify non-destructive weld test (NDT) |
| 34.2 | Visually inspect pipe and pipe components | 10.3 | Inspect Flanged Tie-ins | | | | | | 38.3 | | Visually inspect that welds meet DOT requirements (API 1104) |
| 34.3 | Verify welder qualifications | 10.4 | Inspect Repairs | | | | | | 38.4 | | Perform non-destructive weld test (NDT) |
| 34.4 | Ensure proper installation | 10.5 | Inspect Support Structures | | | | | | | | |
| 34.5 | Abnormal Operating Conditions | 10.6 | Abnormal Operating Conditions | | | | | | | | |
| **CT35** | **Backfilling a Trench Following Maintenance** | | | **No Comparable Task Listed in INGAA Plan** | | | | | **39** | **62107** | **Backfilling a Trench Following Maintenance** |
| 35.1 | Function of backfilling a trench following pipeline maintenance | | | | | | 195-1402BF | Backfilling a Trench Following Maintenance | | | No Subtasks Listed |
| 35.2 | Perform backfilling operations on the pipeline following maintenance | | | | | | | - OR - | | | |
| 35.3 | Proper use of a tamping tool and backhoe | | | | | | 192-1402 | Backfilling | | | |
| 35.4 | Determine amount of cover required | | | | | | | | | | |
| 35.5 | Abnormal Operating Conditions | | | | | | | | | | |
| **CT36** | **Performing General Pipeline Repair Activities** | **CT11U** | **Perform Underwater Pipeline Repair Activities** | **Various INGAA Tasks** | | | | | **40** | **Split** | **Perform General Pipeline Repair Activities** |
| 36.1 | Procedures used for general pipeline repair activities | 11.1 | Excavate Pipeline | | | | 195-3605 | Perform General Pipeline Repair Activities | 40.1 | 62304 | Tight fitting sleeve |
| 36.2 | Install tight fitting sleeves | | | | | | | | 40.2 | 62304 | Oversleeve |
| 36.3 | Install oversleeves | 11.3 | Perform Basic Cutting Operations | | | | | - OR - | 40.3 | 62304 | Clock spring |
| 36.4 | Install composite wrap sleeves | 11.5 | Install Spool Piece | OQ365A | Transmission Lines: Permanent field repair of imperfections and damages | 192.713 | 192-1426 | Tapping Steel and Plastic Pipe* | 40.4 | 62304 | Plidco split repair sleeve (Identify and use generic term for this area) |
| 36.5 | Install mechanical split repair sleeves | 11.2 | Install Mechanical Split Sleeve Repair Clamp | | | | | - AND - | 40.5 | 62304 | Weld plus coupling (Identify and use generic term for this area) |
| 36.6 | Install mechanical couplings | 11.4 | Install Couplings | | | | 192-1432 | Leak Clamps and Sleeves | 40.6 | 62306 | Stopple fitting preparation/sandwich valve installation |
| 36.7 | Perform hot tapping | **CT15U** | **Perform an Underwater Hot Tap** | OQ335 | Tapping pipelines under pressure (hot taps) | 192.627 | | - AND - | 40.7 | 62304 | Tapping a pipeline 2" and under |
| 36.8 | Install pipeline plugs | 8.3 | Seal Disconnected Segment of Pipeline | | | | 192-1005 | Mechanical Joints* | 40.8 | 62306 | Tapping a pipeline 2 1/2" and larger |
| 36.9 | Abnormal Operating Conditions | 11.6 & 15.6 | Abnormal Operating Conditions | | | | | | 40.9 | 62306 | Sealing the pipeline with a stopple plugging machine |
| | | | | | | | | | 40.91 | 62304/306 | Plugging the pipeline with the lock-o-ring completion plug |
| **CT37** | **Conduct Pressure Test** | | | **OQ195, OQ200** | **Substantiate MAOP for steel pipe above 30% of SMYS, Substantiate MAOP for steel pipe below 30% of SMYS** | **192.505(a), 192.507** | | | **41** | **62207** | **Conduct Pressure Test** |
| 37.1 | Function of a pressure test and equipment | | | | | | 195-1301 | Conduct Pressure Test | | | No Subtasks Listed |
| 37.2 | Conduct a pressure test and record the results | | | | | | | - OR - | | | |

# OQSG / OQforAll / NCCER Comparison Matrix

| OQSG Topside Tasks | | OQSG Underwater Tasks | | INGAA | | | OQforAll | | NCCER | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Task # | Task Name | Task # | | Task # | Task Name | 49 CFR Reference | Task # | Task Name | Task # | Module # | Task Name |
| 37.3 | Abnormal Operating Conditions | | | | | | 192-1301 | Leak and Strength Test – Service Lines, Mains, and Transmission Lines | | | |
| **CT38** | **Maintenance Welding on Pipelines** | | | | **Multiple INGAA Tasks** | | | | **42** | **62308** | **Maintenance Welding on Pipelines*** |
| 38.1 | Pipeline maintenance welding requirements | | | OQ020 | Visually Inspect welds which are not non-destructively tested | 192.241(b) | 195-2401 | Maintenance Welding on Pipelines | 42.2 | | Repair of arc burns |
| 38.2 | Repair of arc burns | | | OQ015 | Visual Inspection per sec. 3 & 6 of API 1104 | 192.241(a),(b) | | - OR - | | | Repair of defective welds, other than welds containing cracks |
| 38.3 | Repair of defective welds other than welds containing cracks | | | OQ030 | Perform non-destructive testing of welds | 192.243(a) | 192-2402 | Visual Inspection of Welds | 42.3 | | Repair of a direct pass on a weld containing a defect other than a crack |
| 38.4 | Repair of cover pass | | | | | | 192-2403 | Non Destructive Testing of Welds | 42.4 | | Repair of butt welds containing cracks |
| 38.5 | Repair of butt welds containing cracks | | | OQ035 | Repair of defective welds containing cracks | 192.245(a),(b) | | | 42.5 | | Repair of a previously repaired area |
| 38.6 | Repair of previously repaired areas | | | OQ040 | Repair of previously repaired areas | 192.245(c) | 192-1421 | Installation of Steel Pipe – Repair of Imperfections or Damage | 42.6 | | Replacement of a weld or cylinder of pipe |
| 38.7 | Replace welds or cylinders of pipe | | | | | | 192-2401 | Welding | | | |
| 38.8 | Abnormal Operating Conditions | | | | | | | | | | |
| **CT39 E&P** | **Operations of a Pipeline System (Exploration & Production Facility)** | **CT12U** | **Operation of an Underwater Assembly** | **OQ250** | **Follow applicable procedure for starting up or shutting down any part of the pipeline to assure operation within MAOP limits** | **192.605(b)(5)** | | | **43** | **Split** | **Operations of a Pipeline System** |
| 39.1 | Pipeline startup procedures | 12.1 | Manually Operate Valves on an Underwater Assembly | | | | | | 43.1 | 65106 | Start-up of a pipeline |
| 39.2 | Pipeline shutdown procedures | | | | | | | | 43.2 | 65106 | Shutdown of a pipeline |
| 39.3 | Monitor pressures, flows, temperatures and communications to ensure proper operations | | | | | | | NA | 43.3 | 65105 | Monitor pressures, flows, communications and line integrity and maintain them within allowable limits |
| 39.4 | Abnormal Operating Conditions | 12.2 | Abnormal Operating Conditions | | | | | | 43.4 | 65106 | Manually or remotely open or close valves or other equipment |
| **CT39 P** | **Operations of a Pipeline System** | | | **OQ250** | **Follow applicable procedure for starting up or shutting down any part of the pipeline to assure operation within MAOP limits** | **192.605(b)(5)** | | | **43** | **Split** | **Operations of a Pipeline System** |
| 39.1 | Identify activities associated with the safe startup of a pipeline system | | | | | | 195-1414PS | Operations of a Pipeline System (Pipeline) | 43.1 | 67104/105 | Start-up of a pipeline |
| 39.2 | Identify steps necessary for the safe shutdown of a pipeline system | | | | | | | - OR - | 43.2 | 67104/105 | Shutdown of a pipeline |
| 39.3 | Demonstrate knowledge of monitoring and maintenance of pressures, flows and line integrity | | | | | | 192-1414 | Pipeline Shutdown, Startup, or Pressure Change | 43.3 | 67104/105 | Monitor pressures, flows, communications and line integrity and maintain them within allowable limits |
| 39.4 | Abnormal Operating Conditions | | | | | | | | 43.4 | 67104/105 | Manually or remotely open or close valves or other equipment |
| **CT40** | **Computational Pipeline Monitoring (CPM) Leak Detection** | | | | **No Comparable Task Listed in INGAA Plan** | | | | **44** | **64209** | **CPM Leak Detection** |
| 40.1 | Understand functions of CPM equipment | | | | | | 195-2705 | Computational Pipeline Monitoring (CPM) Leak Detection | 44.1 | | Inspection, testing and calibrations of leak detection equipment |
| 40.2 | Test, calibrate, repair, replace, and maintain CPM equipment | | | | | | | | 44.2 | | Verify the leak detection system meets design parameters |
| 40.3 | Verify that the leak detection system meets design specifications | | | | | | | | | | |
| 40.4 | Abnormal Operating Conditions | | | | | | | | | | |
| **CT41** | **Operate Pressure Relieving Devices for Launching and Receiving Facilities** | **CT13U** | **Perform Underwater Pigging Activities** | | **No Comparable Task Listed in INGAA Plan** | | | | **29** | **62303** | **Launching/Receiving Inline Inspection Device** |
| 41.1 | Identify names and operation of the valves used on a launching facility | 13.1 | Perform Basic Launching Procedures | | | | 195-1414LR | Operate Pressure Relieving Devices on Launching and Receiving Facilities | 29.1 | | Launching in-line inspection devices |
| 41.2 | Sequence of events needed to isolate, relieve pressure and drain fluids from the launcher | | | | | | | | 29.2 | | Receiving in-line inspection devices |
| 41.3 | Understand procedures involved with launching a pig | | | | | | | | | | |
| 41.4 | Identify names and operation of the valves used on a receiving facility | 13.2 | Perform Basic Receiving Procedures | | | | | | | | |

# OQSG / OQforAll / NCCER Comparison Matrix

| OQSG Topside Tasks | | OQSG Underwater Tasks | | INGAA | | | OQforAll | | NCCER | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Task # | Task Name | Task # | | Task # | Task Name | 49 CFR Reference | Task # | Task Name | Task # | Module # | Task Name |
| 41.5 | Understand procedures involved with receiving a pig | | | | | | | | | | |
| 41.6 | Sequence of events needed to isolate, relieve pressure and drain fluids from the receiver | | | | | | | | | | |
| 41.7 | Abnormal Operating Conditions | 13.3 | Abnormal Operating Conditions | | | | | | | | |
| **CT42** | **Performing Maintenance on Valves** | | | **OQ420** | **Inspect, maintain and partially operate valves** | **192.745** | | | **19** | **Split** | **Valve Maintenance** |
| 42.1 | Identify components and maintenance methods of valves | | | | | | 195-1427VM | Valve Maintenance | 19.1 | 63107 | Valve body winterization or corrosion inhibition |
| | | | | | | | | - OR - | | | |
| 42.2 | Perform valve body and/or actuator maintenance | | | | | | | | 19.2 | 63107 | Valve lubrication |
| 42.3 | Abnormal Operating Conditions | | | | | | 192-1427 | Valve Maintenance | 19.3 | 63107 | Valve seat sealing |
| | | | | | | | | | 19.4 | 63107 | Valve stem packing maintenance |
| | | | | | | | | | 19.5 | 63308 | Actuator/operator adjustment, electric |
| | | | | | | | | | 19.6 | 63306 | Actuator/operator adjustment, pneumatic |
| | | | | | | | | | 19.7 | 63307 | Actuator/operator adjustment, hydraulic |
| **CT43** | **Perform Flange Bolting Procedures** | **CT14U** | **Perform Underwater Flange Mating Procedures** | **No Comparable Task Listed in INGAA Plan** | | | | | | | **No Comparable Task in API/NCCER Task List** |
| 43.1 | Understand the purpose of and identify hazards associated with flange bolting procedures | | | | | | | | | | |
| 43.2 | Understand how to avoid pinch points | | | | | | | | | | |
| 43.3 | Perform flange assembly general procedures (Make-up) | 14.1 | Perform General Flange Assembly Procedures (Make-up) | | | | | | | | |
| 43.4 | Perform flange disassembly general procedures (Break-out) | 14.2 | Perform General Flange Disassembly Procedures (Break-out) | | | | | | | | |
| 43.5 | Abnormal Operating Conditions | 14.3 | Abnormal Operating Conditions | | | | | | | | |
| **CT45** | **Perform Leakage Survey** | | | **OQ350** | **Conducting leakage surveys** | **192.706** | | | **52** | **62206** | **Leakage Survey** |
| 45.1 | Function of leakage surveys and equipment used | | | | | | 195-1206 | Perform Leakage Survey | 52.1 | | Conduct vegetation survey |
| 45.2 | Perform visual surveys | | | | | | | - OR - | 52.2 | | Conduct a leak survey with a CGD |
| 45.3 | Perform pipeline leakage survey using a combustible gas detector | | | | | | 192-1201 | Leakage Survey: Distribution and Transmission | 52.3 | | Conduct a leak survey with a flame ionization unit |
| 45.4 | Perform pipeline leakage survey using a flame ionization detector | | | | | | | | | | |
| 45.5 | Abnormal Operating Conditions | | | | | | | | | | |
| **CT46** | **Vault Maintenance** | | | **OQ425** | **Inspection of vaults and maintenance of ventilating equipment (applies only to pressure regulating devices in vaults)** | **192.749** | | | **59** | **62310** | **Vault Maintenance** |
| 46.1 | Function of vault maintenance | | | | | | 192-1802D | Vault Maintenance | | | No Subtasks Listed |
| 46.2 | Perform vault maintenance | | | | | | | - OR - | | | |
| 46.3 | Abnormal Operating Conditions | | | | | | 192-1802T | Vault Maintenance | | | |
| **CT48** | **Purge a Pipeline** | | | **OQ340, Q340A** | **Purge pipeline facilities with gas, air or inert gas** | **192.629** | | | **50/51** | **67104/105** | **Purge Gas from a Pipeline/Purge Air from a Pipeline** |
| 48.1 | Safely purge hydrocarbons or air from a pipeline | | | | | | 195-1418PG | Purge a Pipeline | | | No Subtasks Listed |
| 48.2 | Remove hydrocarbons from a pipeline | | | | | | | | | | |
| 48.3 | Remove air from the pipeline | | | | | | | | | | |
| 48.4 | Abnormal Operating Conditions | | | | | | | | | | |
| **CT50** | **Testing an Emergency Shutdown Device** | | | **No Comparable Task Listed in INGAA Plan** | | | | | **54** | **67104/105** | **Test Remote Control Shutdown Devices** |

# OQSG / OQforAll / NCCER Comparison Matrix

| OQSG Topside Tasks | | OQSG Underwater Tasks | | INGAA | | | OQforAll | | NCCER | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Task # | Task Name | Task # | | Task # | Task Name | 49 CFR Reference | Task # | Task Name | Task # | Module # | Task Name |
| 50.1<br>50.2 | Test Emergency Shut Down (ESD) System<br>Abnormal Operating Conditions | | | | | | 195-1819 | Testing an Emergency Shutdown Device | 54.1 | | Test emergency shutdown (ESD) system |
| **CT51** | **Perform Incremental Pressure Increases to Uprate MAOP** | | | **OQ195, OQ200** | **Substantiate MAOP for steel pipe above 30% of SMYS, Substantiate MAOP for steel pipe below 30% of SMYS** | **192.505(a), 192.507** | | | **56** | **67104/105** | **Perform Incremental Pressure Increases to Uprate MAOP** |
| 51.1<br><br><br><br><br>51.2<br>51.3 | <br>Perform incremental pressure increases to uprate maximum allowable operating pressure<br><br><br>Perform incremental pressure increases<br>Abnormal Operating Conditions | | | | | | 195-2301<br>- OR -<br>192-2301 | Perform Incremental Pressure Increases to Uprate MAOP<br>- OR -<br>Uprating Steel Pipelines to a Pressure that will Produce a Hoop Stress 30% or More of SMYS | | | No Subtasks Listed |
| **CT52** | **Operate Odorant Equipment** | | | **No Comparable Task Listed in INGAA Plan** | | | | | **57/58** | **67104/105** | **Operate Odorant Equipment** |
| 52.1<br><br>52.2<br><br>52.3<br><br>52.4<br>52.5 | Characteristics of odorants and requirements for odorants in natural gas pipelines<br>Determine odorization injection rates and test for odorant levels<br>Recognize the different types of odorant injection equipment<br>Operate and maintain an odorant injection system<br>Abnormal Operating Conditions | | | | | | 195-1506<br>- OR -<br>192-1501 | Operate Odorant Equipment<br>- OR -<br>Odorization – Mains and Transmission Lines | | | No Subtasks Listed |
| **CT54** | **Gas Detection and Alarm System Maintenance and Performance Testing** | | | **OQ400** | **Test and maintain gas detection and alarm system for compressor stations** | **192.736(c)** | | | **55** | **64210** | **Maintain Fixed Gas Detection Equipment** |
| 54.1<br><br>54.2<br><br>54.3 | Identify and describe gas detection devices and their alarm systems<br>Calibrate, test, and maintain gas detection systems<br><br>Abnormal Operating Conditions | | | | | | 192-0201<br>- OR -<br>195-1505 | Gas Detection and Alarm System Maintenance and Performance Test<br><br>Maintain Fixed Gas Detection Equipment | | | No Subtasks Listed |
| **CT55** | **Isolation of a Gas Compressor Unit** | | | **OQ255** | **Isolating units or sections of pipe and for purging before returning to service** | **192.605(b)(6)** | | | | | **No Comparable Task in API/NCCER List** |
| 55.1<br><br>55.2<br>55.3 | Isolate a gas compressor unit<br>Prepare an isolated compressor unit for startup<br>Abnormal Operating Conditions | | | | | | 192-0202 | Isolation of a Gas Compressor Unit | | | |
| **CT56** | **Compressor Station Inspection and Testing of Remote Control Shutdown Devices** | | | **OQ390** | **Inspect and test compressor station relief devices** | **192.731(a)** | | | | | **No Comparable Task in API/NCCER List** |
| 56.1<br><br><br>56.2<br>56.3 | <br>Identify and describe remote control shutdown devices and associated terms<br>Test remote control shutdown devices<br>Abnormal Operating Conditions | | | | | | 192-0205 | Compressor Station Inspection and Testing of Remote Control Shutdown Devices | | | |
| **CT57** | **Startup, Shutdown and Operation of aTurbine Driven Gas Compressor Unit** | | | **OQ260** | **Perform start-up, operating and shutdown of compressor unit(s)** | **192.605(b)(7)** | | | | | **No Comparable Task in API/NCCER List** |
| 57.1<br><br>57.2<br><br>57.3<br>57.4 | Operation of a engine turbine driven gas compressor unit<br><br>Start-up a turbine driven gas compressor unit<br>Shutdown of a turbine driven gas compressor unit<br>Abnormal Operating Conditions | | | | | | 192-0301<br><br>192-0302<br><br>192-0303 | Operating a Gas Compressor Unit<br><br>Shutting Down a Gas Compressor Unit<br><br>Starting a Gas Compressor Unit | | | |
| **CT58** | **Startup, Shutdown and Operation of an Engine Driven Gas Compressor Unit** | | | **OQ260** | **Perform start-up, operating and shutdown of compressor unit(s)** | **192.605(b)(7)** | | | | | **No Comparable Task in API/NCCER List** |

# OQSG / OQforAll / NCCER Comparison Matrix

| OQSG Topside Tasks | | OQSG Underwater Tasks | | INGAA | | | OQforAll | | NCCER | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Task # | Task Name | Task # | | Task # | Task Name | 49 CFR Reference | Task # | Task Name | Task # | Module # | Task Name |
| 58.1 | Understand the operation of an engine driven gas compressor unit | | | | | | 192-0301 | Operating Gas Compressor Units | | | |
| 58.2 | Start-up an engine driven gas compressor unit | | | | | | 192-0302 | Shutting Down Gas Compressor Units | | | |
| 58.3 | Shutdown of an engine driven gas compressor unit | | | | | | 192-0303 | Starting a Gas Compressor Unit | | | |
| 58.4 | Abnormal Operating Conditions | | | | | | | | | | |
| **CT60** | **General Abnormal Operating Conditions** | | | **No Comparable Task Listed in INGAA Plan** | | | | | | | **No Comparable Task in API/NCCER List** |
| 60.1 | Define and understand an abnormal operating condition | | | | | | | | | | |
| 60.2 | Recognize and respond to the malfunction or failure of pipeline components | | | | | | | | | | |
| 60.3 | Recognize and respond to physical damage to the pipeline system | | | | | | | | | | |
| 60.4 | Recognize and respond to the unexpected activation of a safety device | | | | | | | | | | |
| 60.5 | Recognize and respond to abnormal facility conditio | | | | | | | | | | |
| 60.6 | Prevention of Accidental Ignition | | | | | | | | | | |
| **CT61** | **Documentation, Reporting, & OQ Recordkeeping** | | | **No Comparable Task Listed in INGAA Plan** | | | | | | | **No Comparable Task in API/NCCER List** |
| 61.1 | Identify and maintain required documentation | | | | | | 195-0000 | OQ61 Documentation and Reporting | | | |
| 61.2 | Identify safety related conditions that require reporting | | | | | | | | | | |
| 61.3 | Identify Operator Qualifications recordkeeping requirements | | | | | | | | | | |
| 61.4 | Abnormal Operating Conditions | | | | | | | | | | |
| **CT65** | **Damage Prevention During Excavation of In-Service Pipe by or on Behalf of an Operator** | | | | | | | | **32** | **62107** | **Monitoring Excavation Activities** |
| 65.1 | Prepare for Excavation Activities | | | | | | 192-0804 | Damage Prevention During Excavation Activities | | | |
| 65.2 | Perform Inspection Activites During Excavation | | | | | | 195-0804 | Inspection After Excavation Activities & Leak Survery After Blasting | | | |
| 65.3 | Inspection Activites Following Excavation | | | | | | | | | | |
| 65.4 | Recognize and React to Abnormal Operating Conditions | | | | | | | | | | |