Gas Transmission – Maintenance and Construction
QUALIFICATION EVALUATION FORMS

This document contains all the required forms and tools to properly qualify an employee in the given OQ task. The following instructions will guide you in how to complete this process.

This document contains the following documents:

Pages 1 and 2: Official DOT input forms. This document is to be completed by an approved OQ Evaluator for the given task. Field supervisors are not to sign and submit this document unless they are an approved evaluator.

Page 3 : This table contains the required training requirements for either initial or subsequent OQ Evaluation. It specifies the required formal training, OJT (via FTO's) and performance testing (JPM's) that must be completed prior to OQ Evaluation.

Pages 4 – end: These contain the actual Field Training Outlines necessary to complete any required OJT and Job Performance Measurements (JPM's) associated with this task. **These must be completed prior to OQ Evaluation**.

To complete the **OQ Process** follow these steps:

1. Go to the T drive and find the desired OQ folder for the given OQ task

   T:\TRAINING\OPERATOR QUALIFICATION\ New Initial and Subsequent Forms
2. Determine if the employee requires initial or subsequent evaluation.
3. See page 3 of the document which specifies the required training.
4. Schedule the employee to complete any required formal training.
5. Working with your district MP, schedule the employee to complete any required OJT or testing (see pages 4 to the end)
6. If formal training, Field Training Outlines and JPM's are complete, contact [redacted] to schedule an evaluation. The primary role of the Evaluator is to assess knowledge, skills and abilities. They are not there to provide training.
7. Upon completion of OQ Evaluation, page 1 of this document is sent to [redacted] for processing. Do not send in this form directly to HR Learning Services.
8. The original DOT Form (page 1) is forwarded to HRLS by [redacted] This notification is then input into Training Server and will appear on the DOT Operator Qualification Report for the employee's district. Maintenance Planning is also notified so that PLM (report 70) can be updated with current information.

The employee can now be properly scheduled to perform OQ associated work.

Pacific Gas and Electric Company

DOT OPERATOR QUALIFICATION

QUALIFICATION EVALUATION

❒ **Initial**
❒ **Subsequent**

EMPLOYEE FULL NAME (PRINT)		Last four of SS#

Job Title _____ Area _____ Work Location _____

Subtask Name Internal Corrosion / Monitor Subtask #: 03-09.00

SUBTASK OBJECTIVE: Using one or more of the below "Evaluation Methods", demonstrated the knowledge, skill and ability to perform this task following these qualification criteria.

		Qualified
1.	**Safety Requirements:**	❑
	• Ability to identify and resolve abnormal operating condition(s)	
2.	**Access, understand and apply the following Company Standard(s):**	❑
	• Gas Standards - O – 16, page 7, 8 of 24, section 6, sub-part A thru J	
3.	**Recognize Corrosion Problem:**	❑
	• Demonstrates the ability to distinguish between internal and external corrosion • Obtain and process water samples taken from well sites	
4.	**Interprets Probes:**	❑
	• Demonstrates the ability to correctly obtain and use the proper instrument to acquire internal corrosion readings • Record information obtained on proper forms	
5.	**Interprets Inhibitor Pumps:**	❑
	• Demonstrates the ability to monitor, fill, and maintain inhibitor pump facilities	
6.	**Remove Pipeline Liquids:**	❑
	• Demonstrates the ability to apply safety rules when removing and disposing of liquids acquired at specific locations and at specified frequencies	
7.	**Choosing Pump & Probe Locations:**	❑
	• Demonstrates the ability to choose the proposed locations for installation of corrosometer probes and inhibitor pumps	
8.	**Obtain Dew Point Reading:**	❑
	• Monitor dew points at specified locations and at specified frequencies • Record information obtained on proper forms	
9.	**Internal Corrosion Records:**	❑
	• Demonstrates the ability to fill out the forms • Corrosion probe reads • Inhibitor pump injection rates • Gallon age of water removed • Mitigation plans	

EVALUTION METHODS (Check all that apply)

Observation On-The-Job Performance ❑ Observation by Simulation ❑ Oral Test ❑
Observation by On-The-Job Training ❑ Written Base Test ❑ OTHER - Field Performance Audit ❑

Comments / Actions:

EVALUATOR'S NAME AND CORP ID | EVALUATOR'S SIGNATURE | DATE

6/23/05 version
*OM&C/FSD - Mail completed **original** Qualification Evaluation form(s) to [redacted] Room B101 @ 3301 Crow Canyon Rd, San Ramon, CA.*
*CGT - Mail completed **original** Qualification Evaluation form(s) to [redacted] @ 375 N. Wiget Lane, Walnut Creek, CA.*
OM&C/FSD/CGT - Send copy to LGOQPC (Local Gas Operator Qualification Plan Coordinator)

Initial/Subsequent Evaluator Instructions

Subtask Name: Internal Corrosion / Monitor Subtask#: 03-09.00

Evaluator must provide the following reference material(s):

- Abnormal Operating Condition (AOC) Job Aid
- Gas Standard

Note:
Using reference material(s) listed above, individuals must answer all questions correctly. If individual cannot provide the correct answer(s) or demonstrate performance after two additional attempts, the Evaluator should refer to the Operator Qualification Basic Plan Manual, Section 1.3.3.3 for further instructions.

Knowledge

Criteria #	Requirement
1.	Review Annual Operator Qualification Job Aid and Abnormal Operating Conditions (AOC) with individual(s).
2.	There are no test questions for this subtask.

Performance

3. – 9.	Individual must perform checks as required on the Qualification Evaluation for each of these following method(s): • Recognize Corrosion Problem • Interprets Probes • Interprets Inhibitor Pumps • Remove Pipeline Liquids • Choosing Pump & Probe Locations • Obtain Dew Point Reading • Internal Corrosion Records **Note:** Skill must be demonstrated through simulation or actual field performance. Individual must verbalize each action step (bulleted items in Steps 3-9).

GSMTS Operator Qualification Training Requirements

CORROSION CONTROL Task 03-09 Internal Corrosion/Monitor	Initial Qualification[1]	Initial Qualification[2]	Subsequent Qualification[3]
I. Recommended Training Or Equivalent 1. GSM&TS Corrosion Training or 2. GAS_0003 Learning Servcs	Must follow the Company/ Union Program ↓	Required	Optional
II. Text and Reference Review		Required: Text and References listed in Training Binder FTO that pertain to Vol. 2, TB 2-8.1, 8.7	Required: Review of Gas Standard S4133 and applicable Job Aid.
III. On-The-Job Training Job Performance Measure JPM		Required: JPM Vol 2, TB 2-8.1, 8.7	Required: JPM Vol 2, TB 2-8.7
IV. Academic Requirements		No further requirement (Testing completed with training)	Subsequent OQ Test
V. Documentation	Original OQ form kept in WC; Original JPM's kept in District's training file.		

[1] **Employee new to PG&E (also pertains to an existing GSMTS Journeyman advancing to the next classification in the training program).**
[2] **PG&E Journeyman with task in base classification but is not Operator Qualified to do the task.**
[3] **PG&E Journeyman currently Operator Qualified in the task.**

Supports OQ tasks: 03-02, 03-03, 03-04, 03-05, 03-06, 03-07, 03-08, 03-09, 03-10, 03-11

Objective	**Trainee Name:** [Click here and enter name]

The trainee will be able to correctly perform:

- the tasks associated with corrosion cells and external corrosion.
- basic operations and maintenance procedures for pipeline cathodic protection systems.

OJT Instructions	**OJT Hours Guideline:** 228 hours

Reviewer's Role – A qualified reviewer (journeyperson or equivalent) will guide the trainee in completing the objectives for each sub task in this outline. Work with the trainee by discussing, explaining, or performing as necessary the concepts associated with each sub task.

Trainee's Role – Under direction of a qualified reviewer, the trainee will review all text and reference material before performing the training sub tasks described below to prepare for completing a Job Performance Measure.

OJT Process Steps

1. GMS reviews FTO requirements with SME.
2. GMS determines Sub tasks & OJT hours.
3. GMS schedules with WMS.
4. SME and Trainee complete OJT hours.
5. Completed –signed FTO is returned to GMS.
6. GMS verifies completed FTO.
7. GMS schedules JPM.

Text and References:

- Gas Information Bulletin 176 – Casing Venting and Electrical Isolation Requirements
- Gas Standards and Specifications (GS&S):
  - E-30 Selecting and Applying Coatings on Exposed Gas Piping
  - E-35 Selecting and Applying Coatings for Buried Transmission Pipe
  - O-10, 10.1, and 10.2 Electrolysis Test Stations
  - O-11 Cathodic Protection Rectifiers
  - O-71 Copper-Copper Sulfate Ref Electrodes
  - O-72 Approved Multimeters
- PG&E Approved Schools and On-Site Training
- UO Standards:
  - S4112 Physical Inspection of Pipelines
  - S4126 Cathodic Protection
  - S4133 Corrosion control of Gas Transmission Facilities
  - S4711 Pipe Wrap Removal

Job Aids

- Air-to-Soil Transitions
- Calibrate a Copper-Copper Sulfate Ref Electrode
- Cathodic Protection
- Coating Inspection
- Corrosion Control Rectifier Troubleshooting
- Ground Resistance Tester
- How To Measure Structure-To-Soil Potential With A DPM
- How To Prepare the DPM prior to use
- How To Replace The Batteries In the VC-1 Calibrator
- How To Replace The Battery In the Digital Potential Meter Model DPM
- How To Troubleshoot A Goodall Rectifier
- How To Troubleshoot A Universal Rectifier
- Spanning and Taking Pipe-to-Soil Readings

Trainee Materials:

- Maps (to locate an ETS)
- PPE
- Cad welder, volt-ohm meter, pipe-to-soil meter, half cell

Safety Requirements:

- In performance of these tasks, be able to identify and resolve any abnormal operating conditions.
- Provide work protection.

Supports OQ tasks: 03-02, 03-03, 03-04, 03-05, 03-06, 03-07, 03-08, 03-09, 03-10, 03-11

Major Sub Tasks:

Vol 2 TB 2-8.1	Corrosion Cell Terminology
Vol 2 TB 2-8.2	Pipe to Soil Reads
Vol 2 TB 2-8.3	Rectifier Maintenance
Vol 2 TB 2-8.4	Rectifier Reads and Basic Inspections
Vol 2 TB 2-8.5	Installation of Anodes
Vol 2 TB 2-8.6	Transmission Pipe Coatings
Vol 2 TB 2-8.7	Internal Corrosion/Monitor Atmospheric Corrosion/Monitor
Vol 2 TB 2-8.8	Physical Inspection of Pipelines
Vol 2 TB 2-8.9	Electrical Isolation – Testing/ Inspecting
Vol 2 TB 2-8.10	Cathodic Protection System Maintenance

Supports OQ tasks: 03-02, 03-03, 03-04, 03-05, 03-06, 03-07, 03-08, 03-09, 03-10, 03-11

Sub Task Vol 2 TB 2-8.1 **Corrosion Cell Terminology**

Objective: The trainee will be able to correctly explain the terminology associated with corrosion cells and external corrosion.

Explain:

- the components of a corrosion cell.
- the relationship of the anode to the pipeline and the current path.
- the function of a rectifier in a cathodic protection system.
- the relationship between the millivolt reading on a pipe-to-soil meter and the amount of protection associated with the pipeline.
- the maximum allowable millivolt reading and why.

Hours Recommended	OJT Hours Received*	Trainee	Reviewer	Date
10 Hours	☐☐☐☐☐ ☐☐☐☐☐			

Sub Task Vol 2 TB 2 – 8.7 **Internal Corrosion / Monitor**

Objective: The trainee will be able to correctly demonstrate and/or explain basic concepts and applications associated with internal corrosion monitoring.

Demonstrate and/or explain:

- internal corrosion.
- how to process water samples taken from well sites.
- how to use a corrosometer probe and record readings at required frequencies.
- how to monitor, fill, and maintain inhibitor pump facilities (as needed in the District).
- how to remove pipeline liquids at specified locations and explain specified frequencies.
- the process to determine locations of inhibitor pumps and corrosometer probes.
- how to perform dew point readings at specified locations and explain specified frequencies.
- how to document all internal corrosion records and monitoring data (A-forms, probe reads, inhibitor pump injection rates, gallon of water removed, mitigation plans, etc.).

Hours Recommended	OJT Hours Received*	Trainee	Reviewer	Date
20 Hours	☐☐☐☐☐ ☐☐☐☐☐ ☐☐☐☐☐ ☐☐☐☐☐			

Supports OQ tasks: 03-02, 03-03, 03-04, 03-05, 03-06, 03-07, 03-08, 03-09, 03-10, 03-11

Operator Qualification – Job Performance Measure			
Trainee Name Last First	Corp ID 4 digits	SSN Last 4 digits	Location Headquarters or District Name

Directions: This form documents the Job Performance Measures of the named trainee. Upon completion, the results will be put into the Operator Qualification database. The Evaluator will:

- observe the tasks as they are performed or described and rate the results.
- stop a task if the participant's actions will endanger life or equipment.

Safety Requirements:

- In performance of these tasks, be able to identify and resolve any abnormal operating conditions.
- Wear the appropriate clothing and use all personal safety equipment (PPE).
- Provide work protection.
- Code of Safe Practices Section 13.

Sub Task Vol 2 TB 2-8.1 **Corrosion Cell Terminology**			
Task Element	Evaluation Method P = Perform S = Simulate D = Describe	Results S = Satisfactory U = Unsatisfactory NA = Not Applicable	Evaluator Initials Date
Knowledge of the terminology associated with corrosion cells and external corrosion.	Method P S D	Results S U NA	Initials Date

Standard: The trainee can correctly explain:

- the components of a corrosion cell.
- the relationship of the anode to the pipeline and the current path.
- the function of a rectifier in a cathodic protection system.
- the relationship between the millivolt reading on a pipe to soil meter and the amount of protection associated with the pipeline.
- the maximum allowable millivolt reading and why.

Supports OQ tasks: 03-02, 03-03, 03-04, 03-05, 03-06, 03-07, 03-08, 03-09, 03-10, 03-11

Trainee Name Last First	Corp ID 4 digits	SSN Last 4 digits	Location Headquarters or District Name

Directions: This form documents the Job Performance Measures of the named trainee. Upon completion, the results will be put into the Operator Qualification database. The Evaluator will:

- observe the tasks as they are performed or described and rate the results.
- stop a task if the participant's actions will endanger life or equipment.

Safety Requirements:

- In performance of these tasks, be able to identify and resolve any abnormal operating conditions.
- Wear the appropriate clothing and use all personal safety equipment (PPE).
- Provide work protection.
- Code of Safe Practices Section 13.

Sub Task Vol 2 TB 2-8.7 **Internal Corrosion / Monitor**			
Demonstrate basic concepts and applications associated with internal corrosion monitoring.	Method P S D	Results S U NA	Initials Date

Standard: The trainee can correctly demonstrate and/or explain:

- internal corrosion.
- how to process water samples taken from well sites.
- how to use a corrosometer probe and at what required frequency.
- how to monitor, fill, and maintain inhibitor pump facilities as needed in the District.
- how to remove pipeline liquids at specified locations and explain specified frequencies.
- the process to determine locations of inhibitor pumps and corrosometer probes.
- how to take dew point readings at specified locations and explain specified frequencies.
- how to document of all internal corrosion records and monitoring data (A-forms, probe reads, inhibitor pump injection rates, gallon of water removed, mitigation plans, etc.).

Link to UO Standard S4133:
http://wwwedm3/cgi-bin/doccontent.dll?LibraryName=dmspge01^dmsedm01&SystemType=2&LogonId=f45b323a86d40dc5dd8db6d5af529850&DocId=003741662&Page=1

Job Aids:

Job Aid Vol 2 TB2-8a How To Troubleshoot A Goodall Rectifier

Job Aid Vol 2 TB2-8b How To Troubleshoot A Universal Rectifier

Job Aid Vol 2 TB2-8c How To Replace The Battery In the Digital Potential Meter Model DPM

Job Aid Vol 2 TB2-8d How To Prepare the Digital Potential Meter Prior to Use

Job Aid Vol 2 TB2-8e How To Measure A Structure To Soil Potential With A DPM

Job Aid Vol 2 TB2-8f Ground Resistance Tester

Job Aid Vol 2 TB2-8g How To Replace The Batteries In the VC-1 Calibrator

Job Aid Vol 2 TB2-8h Cathodic Protection

Job Aid Vol 2 TB2-8i Corrosion Control Rectifier Troubleshooting

Job Aid Vol 2 TB2-8j Spanning and Taking Pipe to Soil Readings

Job Aid Vol 2 TB2-8k Calibrate a Copper-Copper Sulfate Reference Electrode

Job Aid Vol 2 TB2-8L Coating Inspection

Job Aid Vol 2 TB2-8M Air to Soil Transitions

See Volume 3 TB1 for other supporting job aids for this module.

Job Aid Vol 3 TB 1.12a How to Use a Multimeter

Job Aid Vol 3 TB 1.12b How to Take DC Voltage Measurements

Job Aid Vol 3 TB 1.12c How to Take AC Voltage Measurements

Job Aid Vol 3 TB 1.12d How to Take DC Amperage Measurements

Job Aid Vol 3 TB 1.12e How to Take Resistance Measurements

Job Aid Vol 3 TB 1.12f How to Take a Conductivity Test

Job Aid Vol 3 TB 1.12g Spanning and Taking Pipe to Soil Readings

Job Aid Vol 3 TB 1.12h How to Troubleshoot An AC Switchbox

Link to Job Aids: http://wwwint02/gsm/training/job_aids.htm