

## 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.



QUALIFICATION EVALUATION

- Initial
- Subsequent

EMPLOYEE FULL NAME (PRINT)		Last four of SS#

Job Title \_\_\_\_\_ Area \_\_\_\_\_ Work Location \_\_\_\_\_

Subtask Name Inspect / Test / Maintain Gas Detection / Alarms Subtask #: 13-01.00

**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
<b>1. Safety Requirements:</b>	<input type="checkbox"/>
• Ability to identify and resolve abnormal operating condition(s)	
<b>2. Access, understand and apply the following Company Standard(s):</b>	<input type="checkbox"/>
• Gas Standard – CGT 4291	
<b>3. Map Reading:</b>	<input type="checkbox"/>
• Locate & identify gas detector using operating diagram or facility drawing	
• Verify operating diagram or facility drawing is accurate	
<b>4. Inspection &amp; Operation:</b>	<input type="checkbox"/>
• Determine if system operations will be affected by gas detector testing	
• Inspect associated piping condition for leakage and corrosion	
• Check mechanical operation of gas detector	
• Adjust gas detector to appropriate set point to comply with applicable codes	
<b>5. Operation Procedures:</b>	<input type="checkbox"/>
• Knowledge of gas detector troubleshooting procedures	
• Documentation of gas detector inspection / test / maintenance completed, with abnormalities noted if applicable	

**EVALUATION 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: Inspect / Test / Maintain Gas Detection / Alarms Subtask#: 13-01.00

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.	Provide individual with Inspect / Test / Maintain Gas Detection / Alarms Test.

**Performance**

3. – 5.	<p>Individual must perform checks as required on the Qualification Evaluation for each of these following method(s):</p> <ul style="list-style-type: none"> <li>• Map Reading</li> <li>• Inspection &amp; Operation</li> <li>• Operation Procedures</li> </ul> <p><b>Note:</b> Skill must be demonstrated through simulation or actual field performance. Individual must verbalize each action step (bulleted items in Steps 3-5).</p>
---------	---


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)

## GSMTS Operator Qualification Training Requirements

<u>Infrared Gas Detection System</u> <u>Task 13-01</u> <u>Inspection, Testing, and Maintenance</u>	<u>Initial Qualification</u> <sup>(1)</sup>	<u>Initial Qualification</u> <sup>(2)</sup>	<u>Subsequent Qualification</u> <sup>(3)</sup>
<b><u>I. Recommended Training Or Equivalent</u></b>  On-The-Job Training	Must follow the Company/Union Program  	Required	Optional
<b><u>II. Text and Reference Review</u></b>		Required: Text and References listed in Training Binder FTO that pertain to all of Vol. 3 TB 2-6	Required: Review JPM Vol. 3 TB 2-6.1 thru 2-6.4 and all applicable Job Aids listed in this FTO.
<b><u>III. On-The-Job Training</u></b>  Job Performance Measure JPM		Required: JPM Vol. 3 TB 2-6.1 thru TB 2-6.4	Required: JPM Vol. 3 TB 2-6.1
<b><u>IV. Academic Requirements</u></b>		No further requirement (Testing completed with training)	Subsequent OQ Test
<b><u>V. Documentation</u></b>		Original OQ form kept in WC; Original JPM's kept in District's training file.	

<sup>(1)</sup> Employee new to PG&E (also pertains to an existing GSMTS Journeyman advancing to the next classification in the training program).

<sup>(2)</sup> PG&E Journeyman with task in base classification but is not Operator Qualified to do the task.

<sup>(3)</sup> PG&E Journeyman currently Operator Qualified in the task.

<b>Objective</b>	<b>Trainee Name:</b> [Click here and enter name]
The trainee will be able to describe and explain how the infrared gas path detector works, the physical layout of the system, and the system diagnostics.	
<b>OJT Instructions</b>	<b>OJT Hours Guideline:</b> 20 hours
<p><b>Reviewer’s Role</b> – A qualified reviewer (journey person or equivalent) will <u>guide</u> 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.</p> <p><b>Trainee’s Role</b> – Under direction of a qualified reviewer, the trainee will <u>perform</u> the sub tasks described below to prepare for completing a Job Performance Measure.</p>	<p><b>OJT Process Steps</b></p> <ol style="list-style-type: none"> <li>1. GMS reviews FTO requirements with SME.</li> <li>2. GMS determines Sub tasks &amp; OJT hours.</li> <li>3. GMS schedules with WMS.</li> <li>4. SME and Trainee complete OJT hours.</li> <li>5. Completed –signed FTO is returned to GMS.</li> <li>6. GMS verifies completed FTO.</li> <li>7. GMS schedules JPM.</li> </ol>
<p><b>Text and References:</b></p> <ul style="list-style-type: none"> <li>• Emergency System Drawings</li> <li>• Operating and Maintenance Instructions (OMI)</li> <li>• UO Standard S4291 – Compressor Building Gas Detection</li> <li>• Station Design Philosophy</li> <li>• Vendor Manuals and Drawings</li> </ul>	
<p><b>Trainee Materials:</b></p> <ul style="list-style-type: none"> <li>• HMI (Human Machine Interface)</li> </ul>	
<p><b>Safety Requirements:</b></p> <ul style="list-style-type: none"> <li>• In performance of these tasks, be able to identify and resolve any abnormal operating conditions.</li> <li>• Wear the appropriate clothing and use all personal safety equipment (PPE).</li> <li>• Provide work protection.</li> <li>• Code of Safe Practices Section 13.</li> </ul>	
<p><b>Major Sub Tasks:</b></p> <p>Vol 2 TB 2-8.1 Infrared Gas Detection Systems</p> <p>Vol 2 TB 2-8.2 Testing Procedures</p> <p>Vol 2 TB 2-8.3 Align Heads</p> <p>Vol 2 TB 2-8.4 System Diagnostics</p>	

**Sub Task Vol 3 TB 2-6.1 Infrared Gas Detection System**

**Objective:** The trainee will be able to correctly describe and explain the infrared gas detection system.

**Demonstrate and/or explain:**

- how to use station drawing and/or maps to locate and identify Gas Detection System components.
- how to locate and identify the transmitter heads, the receiver heads, and the reflector.
- the effects on system operations during testing of the Gas Detection System.
- testing procedure frequency.
- how the system works.
  - path system.
  - measures density of methane to distance in the path.
  - data sent directly to programmable logic controller (PLC).
  - PLC determines if conditions are normal, abnormal, or require emergency shutdown (ESD).
- vendor drawings of the system.
- control panel hardware and intrinsically safe barriers (ITB).
- how to perform a physical inspection of all devices associated with the Gas Detection System.
- how to perform necessary documentation.

Hours Recommended	OJT Hours Received*	Trainee	Reviewer	Date
8 Hours	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	[Initials]	[Initials]	[Date]

**Sub Task Vol 3 TB 2-6.2 Testing Procedures**

**Objective:** The trainee will be able to correctly perform testing procedures.

**Demonstrate and/or explain:**

- cut out of system (soft switch) for testing.
- testing procedures using semi-opaque slides.
  - LEL meter response.
  - alarm response.
  - trip response.
- maintenance periods are TBD because system is new.
- system guarantee is five years.

Hours Recommended	OJT Hours Received*	Trainee	Reviewer	Date
4 Hours	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	[Initials]	[Initials]	[Date]

**Sub Task Vol 3 TB 2-6.3 Align Heads**

**Objective:** The trainee will be able to correctly align transmitter or receiver heads as needed.

**Demonstrate and/or explain how to:**

- determine when alignment is needed.
- align transmitter or receiver heads as needed for peaking sensitivity.

Hours Recommended	OJT Hours Received*	Trainee	Reviewer	Date
4 Hours	□□□□	[Initials]	[Initials]	[Date]

**Sub Task Vol 3 TB 2-6.4 System Diagnostics**

**Objective:** The trainee will be able to explain system diagnostics.

**Demonstrate and/or explain how:**

- system diagnostics send data to the PLC.
- the PLC determines when the system is in an abnormal state:
  - open wire.
  - beam blocked.
  - sensitivity.
- to observe and interrupt any related alarms on HMI.
- to troubleshoot and correct system problems.

Hours Recommended	OJT Hours Received*	Trainee	Reviewer	Date
4 Hours	□□□□	[Initials]	[Initials]	[Date]



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

**Objective:** The trainee can correctly:

- identify major components.
- explain the theory of operation.
- perform preventive maintenance, troubleshooting, and testing procedures safely and effectively.

**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.

Sub Task Vol 3 TB 2-6.1 Infrared Gas Detection System			
Task Element	Evaluation Method P = Perform S = Simulate D = Describe	Results S = Satisfactory U = Unsatisfactory NA = Not Applicable	Evaluator Signoff
Describe and explain the infrared gas detection system.	Method <input type="checkbox"/> P <input type="checkbox"/> S <input type="checkbox"/> D	Results <input type="checkbox"/> S <input type="checkbox"/> U <input type="checkbox"/> NA	Initials Date

**Standard:** The trainee can correctly:

- use station drawing and/or maps to locate and identify Gas Detection System components.
- locate and identify the transmitter heads, the receiver heads, and the reflector.
- explain the effects on system operations during testing of the Gas Detection System.
- state the testing procedure frequency.
- explain how the system works.
  - path system.
  - measures density of methane to distance in the path.
  - data sent directly to programmable logic controller (PLC).
  - PLC determines if conditions are normal, abnormal, or require emergency shutdown (ESD).
- explain how to use vendor drawings of the system.
- explain control panel hardware and intrinsically safe barriers (ITB).
- perform a physical inspection of all devices associated with the Gas Detection System.
- perform necessary documentation.



Operator Qualification – Job Performance Measure					
Trainee Name		Corp ID	SSN	Location	
Last	First	4 digits	Last 4 digits	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 3 TB 2-6.2 Testing Procedures**

Task Element	Evaluation Method P = Perform S = Simulate D = Describe	Results S = Satisfactory U = Unsatisfactory NA = Not Applicable	Evaluator Signoff
Test the infrared gas path detector.	Method <input type="checkbox"/> P <input type="checkbox"/> S <input type="checkbox"/> D	Results <input type="checkbox"/> S <input type="checkbox"/> U <input type="checkbox"/> NA	Initials Date

**Standard:** The trainee can correctly:

- cut out the system for testing.
- perform testing with semi-opaque slides.
- interpret alarm responses.

Operator Qualification – Job Performance Measure					
Trainee Name		Corp ID	SSN	Location	
Last	First	4 digits	Last 4 digits	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 3 TB 2-6.3 Align Heads**

Align the infrared gas path detection heads.	Method <input type="checkbox"/> P <input type="checkbox"/> S <input type="checkbox"/> D	Results <input type="checkbox"/> S <input type="checkbox"/> U <input type="checkbox"/> NA	Initials Date
--	--	--	------------------

**Standard:** The trainee can correctly:

- determine when alignment is needed.
- perform alignment to return conditions to normal.
- align transmitter and receiver heads for peak sensitivity.

**Sub Task Vol 3 TB 2-6.4 System Diagnostics**

Explain system diagnostics	Method <input type="checkbox"/> P <input type="checkbox"/> S <input type="checkbox"/> D	Results <input type="checkbox"/> S <input type="checkbox"/> U <input type="checkbox"/> NA	Initials Date
----------------------------	--	--	------------------

**Standard:** The trainee can correctly explain how:

- system diagnostics send data to the PLC.
- the PLC determines when the system is in an abnormal state:
  - open wire
  - beam blocked
  - sensitivity
- to observe and interrupt any related alarms on HMI.
- to troubleshoot and correct system problems.

Link to UO Standard S4291 "Compressor Building Gas Detection and  
Warning Systems":

[http://www.wedm3/cgi-  
bin/doccontent.dll?LibraryName=dmspge01^dmsedm01&SystemType=2&LogonId=75a  
cc78e290b76c6822da75a12be24c0&DocId=010250169&Page=1](http://www.wedm3/cgi-bin/doccontent.dll?LibraryName=dmspge01^dmsedm01&SystemType=2&LogonId=75acc78e290b76c6822da75a12be24c0&DocId=010250169&Page=1)