

Initial/Subsequent Evaluator Instructions

Subtask Name Start / Operate Shutdown Turbine - Local Subtask# 12-01 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 Start / Operate Shutdown Turbine - Local Test

Performance	
3 - 6	<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"> • Map Reading • Equipment Check • Turbine Compressor Operation • Operation Procedures <p style="text-align: center;">Note</p> <p>Skill must be demonstrated through simulation or actual field performance. Individual must verbalize each action step (bulleted items in Steps 3-6)</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)



OPERATOR QUALIFICATION

- Initial
- Subsequent

Subtask Questions

EMPLOYEE FULL NAME (PRINT)		Date

Subtask Name Start / Operate Shutdown Turbine - Local Subtask # 12-01

Instructions Answer the questions below in the space provided. All questions must be answered correctly

1. Prior to starting a unit, which of the following must be checked or verified?

- A. Master Clearance Board
- B. Operating Log Book
- C. Contact Gas System Operations
- D. Visually inspect unit
- E. Inform personnel at the station
- F. All of the above

2. Once a local start sequence is initiated, which of the following should occur?

- A. Prelube starts
- B. Buffer air system comes on (if unit is equipped with dry gas seals)
- C. Unit piping purges and pressurizes
- D. Unit cranks, light off, accelerates, compressor breakaway achieved
- E. Unit "completed sequence" or "on line"
- F. All of the above

3. When there is an active gas detection impairment, can the unit be operated? If yes, what, if any, systems should be monitored?

- A. Yes, the unit can be operated Station must be manned and periodically checked with a portable gas detection system
- B. No, it can not be operated until device is fixed
- C. Yes, the unit can be operated Station must be manned
- D. No, the unit can not be operated Station must be manned and periodically checked with a portable gas detection system



Subtask Name Start / Operate Shutdown Turbine - Local Subtask # 12-01

Instructions Answer the questions below in the space provided. All questions must be answered correctly.

4 For a non-ESD stop, approval must be obtained from _____ prior to taking a unit off line

- A Gas System Operations via Brentwood
- B. Director
- C Engineer
- D Tech Specialist

5 Which of the following must occur before leaving the station after a unit stop and the unit is to be left available?

- A Station remote / local selector switch must be in REMOTE
- B Post lube
- C. Visually inspect the unit
- D. Enter unit information in the station log book
- E All of the above
- F None of the above

Initial/Subsequent Evaluator Instructions

Subtask Name GSO - Start / Operate / Stop Compressor Motor Remote Subtask# 12-02 00

Evaluator must provide the following reference material(s)

- Abnormal Operating Condition (AOC) Job Aid
- Gas Standard
- GSO Training Manual Job Aids

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 GSO - Start / Operate / Stop Compressor Motor Remote Test

Performance

3 - 6	<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"> • Map Reading • Pipe Operating / Equipment Check • Compressor Motor Operation • Operation Procedures <p style="text-align: center;">Note</p> <p>Skill must be demonstrated through simulation or actual field performance. Individual must verbalize each action step (bulleted items in Steps 3-6)</p>
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OPERATOR QUALIFICATION

- Initial
- Subsequent

Subtask Questions

EMPLOYEE FULL NAME (PRINT)		Date

Subtask Name GSO – Start / Operate / Stop Compressor Motor Remote Subtask # 12-02

Instructions Answer the questions below in the space provided. All questions must be answered correctly.

1. Prior to starting the compressor unit, the operator should:

- A. Check the station valving configuration
- B. Check compressor status for availability
- C. Check upstream and downstream pressure conditions
- D. All of the above

2. In the ADACS SCADA system, a running compressor is indicated by.

- A. A red symbol
- B. A green symbol
- C. A black symbol
- D. None of the above

3. In the ADACS SCADA system, an unavailable compressor is indicated by

- A. A red symbol
- B. A green symbol
- C. A black symbol
- D. None of the above

4. Prior to starting a compressor unit at a station, the Gas System Operator should

- A. Submit a maintenance request
- B. Send an e-mail to the compressor engineer
- C. Page the gas maintenance supervisor
- D. Call the station to notify station personnel who may be on site

Continued on next page

Subtask Name GSO – Start / Operate / Stop Compressor Motor Remote Subtask # 12-02

Instructions Answer the questions below in the space provided. All questions must be answered correctly.

5. If an operator receives a HI-HI gas detection alarm from an unmanned compressor station and the compressor(s) at the station shut down, the station block valves close, and the station blow off opens, the correct procedure to restore the station to operation is.
- A Wait for the HI-HI gas detection alarm to clear and attempt to put the station back in service
 - B Immediately attempt a re-start on the compressor in case the gas detection alarm was a false alarm
 - C Call the responsible Gas Maintenance Supervisor to dispatch maintenance personnel to the station to discover the cause of the HI-HI gas detection alarm and to determine if the station can be returned to service
 - D All of the above
6. If natural gas is not sufficiently cooled after being discharged from a compressor there is a risk that.
- A The gas could combust inside the pipe
 - B The BTU value of the gas would be changed
 - C The protective coating on the buried pipe downstream of the station could be damaged by the elevated temperature of the gas
 - D None of the above
7. Compressor unit damage could occur if
- A Maximum differential were breached
 - B Minimum differential were breached
 - C All of the above
 - D None of the above
8. What action would you take if the MOP downstream of a running compressor station were exceeded?
- A Shutdown the compressor
 - B Add compression at the station upstream
 - C Request an increase in MOP from the pipeline engineer
 - D Call out a crew to reset the station relief valve below the MOP

Initial/Subsequent Evaluator Instructions

Subtask Name Start / Operate Shutdown – Recip / Local Subtask# 12-03 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 Start / Operate Shutdown – Recip / Local Test

Performance

3 – 6	<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"> • Map Reading • Equipment Check • Reciprocating Compressor Operation • Operation Procedures <p style="text-align: center;">Note</p> <p>Skill must be demonstrated through simulation or actual field performance. Individual must verbalize each action step (bulleted items in Steps 3-6)</p>
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OPERATOR QUALIFICATION

- Initial
- Subsequent

Task Questions

EMPLOYEE FULL NAME (PRINT)		Date

Task Name Start / Operate Shutdown – Recip. / Local **Task #.** 12-03

Instructions Answer the questions below in the space provided. All questions must be answered correctly.

1. Prior to starting a unit, which of the following must be checked or verified?

- A. Verify station/unit valve positions
- B. Master Clearance Board
- C. Operating Log Book
- D. Contact Gas System Operations
- E. Visually inspect unit
- F. Inform personnel at the station
- G. All of the above

2. Once a local start sequence is initiated, verify the following systems are operating:

- A. Prelube
- B. Cooling water
- C. All cylinders completely loaded
- D. A and B
- E. A and C
- F. A and B and C

3. When there is an active gas detection impairment, can the unit be operated? If yes, what, if any, systems should be monitored?

- A. Yes, the unit can be operated. Station must be manned and periodically checked with a portable gas detection system
- B. No, it can not be operated until device is fixed
- C. Yes, the unit can be operated. Station must be manned
- D. No, the unit can not be operated. Station must be manned and periodically checked with a portable gas detection system

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Task Name Start / Operate Shutdown -- Recip. / Local Task # 12-03

Instructions Answer the questions below in the space provided. All questions must be answered correctly.

4 Abnormally high process gas discharge temperatures are caused by the following

- A High LO temperature
- B Leaking compressor valves
- C High differential pressure
- D Over torque

5 For a non-BSD stop, approval must be obtained from ____ prior to taking a unit off line

- A. Gas System Operations via Brentwood
- B Director
- C Engineer
- D Tech Specialist



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 Inspect and Maintain Odorant Equipment Subtask # 19-01 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
1 Safety Requirements • Ability to identify and resolve abnormal operating condition(s)	<input type="checkbox"/>
2 Access, understand and apply the following Company Standard(s) • UO Standard S4350 Odorization of Natural Gas	<input type="checkbox"/>
3 Map Reading • Locate and identify sampling locations using operating diagram or facility drawing	<input type="checkbox"/>
4 Odor Intensity Meter Inspection • Check meter for correct operation • Check meter for cleanliness to prevent accumulation of any residual odors	<input type="checkbox"/>
5 Operation Procedure • Demonstrate how to Startup Operate and Shutdown Odorizer • Check and adjust system pressures • Check for general alarms	<input type="checkbox"/>
6 Inspection and Maintenance Procedures and Documentation • Calculate odorization rate • Purge and perform maintenance • Troubleshoot for common problems • Adjust rate of odorization for proper odor intensity • Document Inspection and Maintenance	<input type="checkbox"/>

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

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Initial/Subsequent Evaluator Instructions

Subtask Name Inspect and Maintain Odorant Equipment Subtask# 19-01 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 and Maintain Odorant Equipment Test

Performance	
3 - 6	<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"> • Map Reading • Odor Intensity Meter Inspection • Operation Procedure • Inspection and Maintenance Procedures and Documentation <p style="text-align: center;">Note</p> <p>Skill must be demonstrated through simulation or actual field performance. Individual must verbalize each action step (bulleted item in Step 3-6)</p>

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OPERATOR QUALIFICATION

- Initial
- Subsequent

Subtask Questions

EMPLOYEE FULL NAME (PRINT)		Date

Subtask Name Inspect and Maintain Odorant Equipment Subtask #. 19-01

Instructions Answer the questions below in the space provided. All questions must be answered correctly.

1. How much odorant must be added to our natural gas?
 - A. At least 0.5 lb/MMscf
 - B. Between 0.25 and 1.0 lb/MMscf
 - C. Such that it is readily detectable at 0.1% to 0.6% gas in air
 - D. Such that it is readily detectable at 5% to 15% gas in air

2. PG&E currently uses all of the following odorizers, EXCEPT:
 - A. Farm tap odorizer
 - B. NJEX injection-type odorizer
 - C. MP odorizer
 - D. OdorEyes Pulse bypass

3. Which company Gas Standard covers "Odorization of Natural Gas"
 - A. S-4350
 - B. S-4333
 - C. S-4432
 - D. 49 CFR 192.625

4. The NJEX expansion tank pressure should be set to:
 - A. 75 psig
 - B. 50 psig
 - C. 25 psig
 - D. atmospheric pressure

Continued on next page



Subtask Name Inspect and Maintain Odorant Equipment Subtask # 19-01

Instructions Answer the questions below in the space provided. All questions must be answered correctly.

5. The proper actuation pressure for a pipeline operating at 700 psig is

- A. 35 psig
- B. 45 psig
- C. 50 psig
- D. 75 psig

6. Which of the following maintenance items should be performed on a weekly basis?

- A. Change filters
- B. Rebuild pump
- C. Check oil level
- D. Replace solenoids

7. To vent the NJEX system for maintenance, the first valve one should open is?

- A. V-7
- B. V-5
- C. V-1
- D. V-3

8. The 7000 series pump has a maximum stroke volume of.

- A. 0.1 cc
- B. 1.0 cc
- C. 5.0 cc
- D. All of the above

9. The function of the Verometer is:

- A. Odorant storage
- B. Filtering of odorant
- C. Controls the operation of the odorizer
- D. Calibrated vessel for precise measurement of odorant injected

Continued on next page



Subtask Name Inspect and Maintain Odorant Equipment Subtask # 19-01

Instructions Answer the questions below in the space provided. All questions must be answered correctly.

10. The first step in a Forward Purge Maintenance Procedure is

- A. Open all valves
- B. Start pump
- C. Place system in standby

11. Which are considered abnormal operating conditions?

- A. Expansion tank pressure = 50 psig
- B. No odorant in drip gage during injection
- C. Verometer alarm
- D. All of the above

12. The odorizer is injecting 0.5 lb/MM into the gas stream. The downstream sniff test indicates 1.0% gas-in-air. What action should be taken?

- A. No action. 0.5 lb/MM is an acceptable injection rate
- B. Increase the odorization rate and repeat the sniff test
- C. Decrease the odorization rate and repeat the sniff test

Initial/Subsequent Evaluator Instructions

Subtask Name Conduct Sampling of Odorant Subtask# 19-02 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 Conduct Sampling of Odorant Test

Performance

3 – 6	<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"> • Map Reading • Odor Intensity Meter Inspection • Operation Procedure • Test Procedure and Documentation <p style="text-align: center;">Note</p> <p>Skill must be demonstrated through simulation or actual field performance. Individual must verbalize each action step (bulleted items in Step 3-6)</p>
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OPERATOR QUALIFICATION

- Initial
- Subsequent

Subtask Questions

EMPLOYEE FULL NAME (PRINT)		Date

Subtask Name Conduct Sampling of Odorant Subtask # 19-02

Instructions Answer the questions below in the space provided. All questions must be answered correctly.

1 Natural gas must be odorized such that:

- A. It contains no less than 0.5 lbs/MMscf of odorant
- B. It can be detected by a sulfur analyzer
- C. It is readily detectable by a person with a normal sense of smell
- D. It can be detected by electronic leak detectors

2 Sniff tests should be conducted

- A. At random locations and times
- B. At the ends of systems or where odor intensity has been a problem
- C. Where the gas enters our system
- D. On all transmission lines

3 Which of the following does NOT affect ones ability to smell odorized natural gas?

- A. Colds or allergies
- B. Previous exposure to odorant
- C. Gas pressure
- D. Smoking

4 Acceptable sniff test results should range between

- A. 5 and 15% gas in air
- B. 1 and 6% gas in air
- C. 0.1 and 0.6% gas in air
- D. Any level, as long as you can smell the gas

5. Which of the following is NOT an approved odor intensity meter?

- A. Heath Odorator
- B. YZ DTEX
- C. Bacharach Odorometer
- D. Medor Sulfur Analyzer

Continued on next page

Subtask Name Conduct Sampling of Odorant Subtask # 19-02

Instructions Answer the questions below in the space provided. All questions must be answered correctly.

6 PG&E uses an odorant blend composed of the following:

- A. 50% THT and 50% TBM
- B. 80% TBM and 20% DMS
- C. 50% TBM and 50% DMS
- D. 80% THT and 20% TBM

7. Sniff testing indicates an odor intensity of 0.8% gas-in-air. What immediate action should be taken?

- A. Retest until an acceptable reading is obtained
- B. Send the instrument to TES for calibration
- C. Notify your supervisor
- D. Take no action, report 0.8% on the form

8. When connecting the odor intensity meter to a gas supply tap, it is important to.

- A. Use full pipeline pressure for maximum flow
- B. Crack open the supply valve to provide a small flow
- C. Ensure the gas supply is regulated to below the maximum instrument pressure range

9. Which of the following is considered an abnormal operating condition?

- A. Gas-in-air reading of greater than 0.6%
- B. Gas-in-air reading of less than 0.1%
- C. Odor that does not smell like natural gas
- D. All of the above