



Operations and Maintenance Procedures

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O&M Section # N/A	SCUD Task # 240
Section: Emergency	Revision Date: 09/06/16

Carbon Monoxide (CO) Leak Investigation

SCOPE AND PURPOSE

This procedure is to provide personnel performing inside leak investigations with the necessary procedures for prompt and effective response and to protect life and property as required by §192.615.

RESPONSIBILITY

The Service Department Supervisor, or other designee, is responsible to ensure that carbon monoxide investigations are performed as soon as possible and as described in this procedure. All inside leak investigations shall include an investigation for an inside gas leak.

PERSONNEL SAFETY (Where Applicable)

- The first person to respond to a report of gas detected inside a building shall take every necessary action to **protect life and property**.
- No open flames.
- No smoking
- Turn on all necessary equipment before entering premise.
- “Zero” detection equipment outside in clean air before taking readings.
- **Knock** on the door – **DO NOT** ring the doorbell.
- DO NOT use the telephone in the area of a suspected leak.
- Establish a safety perimeter to prevent bystanders and unauthorized personnel from entering the area.
- Use the required safety equipment.

EQUIPMENT AND MATERIALS

Combination - Combustible Gas Indicator (CGI)/Electronic Gas Detector (EGD)/Carbon Monoxide (CO) Detector

Combustible Gas Indicator (CGI) - Shows gas readings in percent (%) gas, LEL or UEL

Communication method (Radio, Cell Phone, etc.)

Other equipment and materials as needed

OPERATOR QUALIFICATION

This activity is a covered task under the Operator Qualification Plan and may only be performed by or directed and observed by an individual who is currently qualified to perform inside leak investigations. Refer to the OQ Plan for specific qualification requirements.

MAINTENANCE & OPERATION OF INSTRUMENTS

Each instrument used for carbon monoxide detection and evaluation shall be operated in accordance with the manufacturer’s recommended operating instructions.

CALIBRATION OF INSTRUMENTS

Each instrument used for carbon monoxide detection and evaluation shall be calibrated in accordance with the manufacturers recommend calibration instructions.

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INSTRUCTIONS

While approaching the building; ensure that all equipment, such as (Flashlight, CGI, Gas Detector, CO detector etc.) is turned on and zeroed outside in clean air. Also observe the area for obvious signs of a gas leak using sight, smell, and hearing. Signs may include, but are not limited to:

- Dead or dying grass, shrubs, or trees
- Absence of growth in paving cracks
- Cracked or crusted soil, or mildewed soil
- Absence of grass overhang on curbing or walkways
- Odor of gas
- Sound of escaping gas

I. Customer Not at Home - The gas meter must be turned off and locked.

Attempt to determine the condition inside the building - Using an instrument capable of alerting the user to the presence of a gas leak or carbon monoxide, check around the entrance door and any other available openings such as, but not limited to, crawl space vents, windows, etc. Also check along the ground around the perimeter of the foundation if possible.

- a. If there is an indication of gas along the ground contact the appropriate SCUD authority, see SCUD Procedure # EMER004-Outside Gas Leak Investigation.**
- b. If there is an indication of gas inside the building see contact appropriate SCUD authority, see SCUD Procedure # EMER001-Inside Gas Leak Investigation procedures.**
- c. *If there is an indication of carbon monoxide inside the building:***
 1. Immediately notify:
 - Service Department Supervisor or his appointee.
 - Fire Department
 - Police Department
 2. Establish a safety perimeter and prevent unauthorized personnel from entering the building – DO NOT allow entry into the building until it has been checked and deemed safe for entry.
- d. If no gas or carbon monoxide is detected inside or outside, leave a door hanger explaining why the meter is off.**
- e. The proper paper and/or electronic Odor Report shall be completed for all carbon monoxide leak investigations regardless of the findings.**

II. Customer at Home

Assess the condition inside the building - Using an instrument capable of alerting the user to the presence of gas or carbon monoxide, check around the entrance door. As you enter the premise, sample the air high.

- a. If gas is detected when entering, see SCUD Procedure # EMER001-Inside Gas Leak Investigation procedures.**
- b. If when entering, the investigation finds carbon monoxide, see the following. (Vented appliances should not put off any carbon monoxide)**
 - 0-9 PPM-Acceptable in Homes, Condos, Motels, Cabins, etc. - especially with unvented logs and heaters. Try to find the source. Eliminate the source if needed.

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- 10-35 PPM-Acceptable for 8 hours only in Commercial applications such as restaurants, factories, garages, etc. **Unacceptable for homes, cabins, condos, motels, etc.** Try to find the source. Eliminate the source in needed.
- 36-100 PPM-UNACCEPTABLE UNDER ANY CONDITIONS! In a home, cabin, motel, condo etc., suggest that the occupants evacuate the room. Ventilate the room if possible. Try to find and eliminate the source. If source cannot be found, contact the Service Department Supervisor or his appointee.
- 101-200 PPM-Evacuate the room or building. Do not stay in the room or building without an air pack on. Contact Service Department Supervisor or his appointee. If source is unknown, shut the gas meter off. Ventilate the room or building. The fire department may be contacted for assistance.
- ABOVE 200 PPM-EVACUATE IMMEDIATELY. Shut off the gas meter. Contact the Service Department Supervisor or his appointee. The fire department may be contacted for assistance. Do Not enter the building without an air pack on until the carbon monoxide level drops below 100 ppm. Attempt to ventilate the building.
- ABOVE 115,000 PPM-Nearing the lower explosive limit for carbon monoxide. **DO NOT ENTER. SHUT OFF THE GAS METER. CALL FIRE DEPARTMENT,** and appropriate SCUD authority.
- If any unacceptable levels are found, the source must be found and terminated. If the source is unknown or unreachable, the gas meter must be shut off.

REPORTING/NOTIFICATION

The SCUD employee shall complete documentation in accordance with the Operation and Maintenance Manual. The proper paper and/or electronic Odor Report shall be completed for all leak investigations regardless of the findings.

RELATED PROCEDURES

EMER001 - Inside Gas Leak Investigation
 EMER004 - Outside Gas Leak Investigation