

## PROCEDURES

### CARBON MONOXIDE (CO) TESTING

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#### 9.0 PURPOSE

The purpose of this section is to establish procedures for investigating and testing for the presence of carbon monoxide in the environment.

#### 9.1 SCOPE

Carbon Monoxide (CO) poisoning results in flue like symptoms, and prolonged exposure or exposure to high levels of CO may result in death.

- A. As little as 10ppm needs to have the source identified and corrected
- B. 50ppm (0.005%) is the maximum allowable concentration for continuous exposure in any eight (8) hour period
- C. 800ppm (0.08%) may cause unconsciousness or death within two (2) hours

#### 9.2 CO PROCEDURE

- A. Verify with customer / occupants the presence of any CO symptoms
- B. Is CO suspected from a specific appliance or for other reason?
- C. If conditions safely allow, verify the presence of CO conditions:
  - 1. Test for CO with a Carbon Monoxide tester or Monoxor.
  - 2. Take reading outside before entering structure to establish normal level of CO present in atmosphere.
  - 3. Take reading inside front door, near heat registers, near appliances, and at various locations throughout the structure, both near the floor and the ceiling.
- D. If the test indicates the presence of CO instruct the occupants to:
  - 1. Ventilate the structure
  - 2. Get fresh air
  - 3. IF CO is strong, advise occupants to leave the building, and
  - 4. Return only after the CO problem has been repaired
- E. If conditions safely allow, check for the following:
  - 1. Proper appliance combustion, and

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2. Proper flue operation:
    - No holes or cracks, correct rise, and no spillage
  3. Fan blowing through the heat exchanger
  4. Proper burner flame pattern
    - Heat exchanger (with burners off and fan on):
    - Visually check with match, mirror and light
    - Probe rusted areas to determine extent of damage
    - If the heat exchanger is cracked or unsafe, shut off the gas and electric to the furnace and red tag deficiency.
- F. If the cause of the CO cannot be eliminated, shut off the natural gas supply, ventilate the structure, and issue Notice of Unsatisfactory Condition

**NOTE:** The above guidelines are general in nature and its primary use will be for the training of personnel prior to emergencies. During an actual emergency, the personnel responding to the emergency will be required to exercise their individual judgment to take the appropriate actions considering all apparent circumstances.

#### 9.3 BACHARACH MONOXOR II

- A. Install four (4) “C” size batteries, checking for proper polarity
- B. Install hose and probe, insuring snug fit.  
Dish washing liquid diluted in water or heating the tube in hot water may help when installing for the first time or after long period of nonuse.
- C. Set power switch to ON, allowing approximately 1 minute to warm up
- D. Zero the display (if necessary)
- E. Take a gas sample
- F. The LCD shows levels of CO in the Range of 0 to 1999 ppm
  1. If a display of “1” in the left column is present, this represents an overrange condition.
  2. To clear an overrange condition, leave the instrument on and sample fresh air until the display returns to displaying CO
  3. Should the instrument not clear, send it to an approved Bacharach Service

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Center for repair

- G. When batteries become low, the LO BAT indicator appears in the display. The instrument will continue to take accurate readings, however the batteries should be replaced as soon as possible.
- H. A -1 display indicates batteries too low to continue. Batteries shall be replaced before proceeding.
- I. To perform a quick check of the instrument's operation, use a burning cigarette, a snuffed out match or bottled CO. If no reading or reading obviously in error, do not use the instrument and send in for repair.
- J. It is recommended that the instrument be scheduled for routine calibration on an annual basis not exceeding 15 months of operation. If the Operator does not have the necessary calibration equipment, the instrument should be sent to an approved Bacharach Service Center.