



# SOUTH LYON FIRE DEPARTMENT

## Manual of Procedures 416

### CARBON MONOXIDE

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Approved: Chief Mike Kennedy

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#### I. SCOPE

Carbon monoxide (CO) is a colorless, odorless, and tasteless gas with no warning properties. CO is generated environmentally in combustion processes due to incomplete oxidation of carbon and carbonaceous fuels. Common sources of CO indoors are: fuel-powered vehicles such as fork lift trucks, poorly ventilated or malfunctioning heating furnaces, fuel-powered equipment, and welding.

#### II. PERMISSIBLE EXPOSURE LIMITS

Occupational / Workplace Settings

Michigan Department of Licensing and Regulatory Affairs, Michigan Occupational Safety and Health Administration General Industry

- 35 PPM as 8-hour, time weighted average
- 200 PPM as ceiling
- No short term exposure limit established

Residential Settings

American Society of Heating, Refrigeration and Air-Conditioning Engineers, Inc., ANSI/ASHRAE Standard 62-2001, "Ventilation for Acceptable Indoor Air Quality."

- 9 PPM as the maximum indoor CO level in a residential setting

#### III. RESPONSE

The type of response shall be determined by the dispatch information.

- A. Normal traffic: CO alarm going off in the building without complaints of anyone being sick or asymptomatic of CO poisoning.
- B. Emergency traffic: CO alarm going off in the building with complaints of anyone being sick or symptomatic of CO poisoning. The emergency response should be limited to the first responding unit.

The 4-gas meter should be activated on arrival and in fresh air before entering the building. Take a reading with the 4-gas monitor inside the front door. If the reading is below 200 PPM, SCBA is not required. If at any point levels are above 200 PPM, then crews must evacuate and don full personal protective equipment with SCBA.

***If there is any doubt as to the origin of the carbon monoxide or unusual circumstances, have Novi Regional 911 contact Consumers Energy.***

#### IV. INVESTIGATION

Initiate a search of the premises to determine if there are any amounts of CO above 35 PPM / 9 PPM.



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- A. During the investigation process, occupants should be evacuated.
- B. Readings less than 35 PPM / 9 PPM.
  - i. Advise the occupants that high levels of CO were not found.
  - ii. If the incident was the result of a sounding CO alarm, attempt to reset the CO detector by bringing it into fresh air for at least fifteen minutes. If the CO detector cannot be reset, advise the occupant to purchase a new CO alarm. (CO alarms and smoke detector alarms should be replaced every ten years).
  - iii. Advise the occupant to call 911 if the CO alarm re-activates.
- C. Readings of 35 PPM / 9 PPM or more.
  - i. The occupant shall be informed that the air monitor has detected a potentially harmful level of CO.
  - ii. If the CO source appears to be a vehicle or an appliance.
    - 1. Turn off the engine, if it is still on.
    - 2. If it is suspected that an appliance, generator, or a vehicle engine that was idling in a garage several hours earlier is the cause of elevated CO levels, then advise the occupant that engines should not be left idling in an attached garage, even with the garage door open.
  - iii. If the source of these CO levels appears to be a permanently installed or portable appliance.
    - 1. Turn off the appliance.
    - 2. If the fuel supply can be shut off, do so.
    - 3. Advise the occupant that dangerous levels of CO have been detected and the appliance must be inspected, repaired, or replaced qualified contractor or service person before being used again.
  - iv. If misuse is the cause of CO, e.g., using a charcoal grill or a gas oven to heat a home during a power outage, then educate the occupant about the causes and dangers of CO and the proper use of appliances.
  - v. Once the CO has been reduced to a safe level via ventilation, the premises may be occupied.
  - vi. Attempt to reset the CO detector by bringing it into fresh air for at least fifteen minutes. If the CO detector cannot be reset, advise the occupant to purchase a new CO alarm. (CO alarms and smoke detector alarms should be replaced every ten years).
  - vii. Advise the occupant to call 911 if the CO alarm re-activates.

Approved by  
/s/ Chief Mike Kennedy