

POLICY: CARBON MONOXIDE RESPONSE

Hadley Township Fire Department
Policy #107

I. SCOPE

This policy shall apply to all emergency personnel who respond to reported carbon monoxide detector activations.

II. PURPOSE

The purpose of this policy is to provide a standardized approach to emergency calls concerning the activation of carbon monoxide detectors, and to outline the minimum actions, which must be taken at the site of each reported incident.

Because of the large number of carbon monoxide detectors which are activated by unknown causes or non-threatening activating agents, and because it would impair a Fire Department's ability to address genuine emergencies if it treated every activation as requiring an emergency response, it is necessary to implement a policy which distinguishes activations which require an emergency response from those which can be treated as non-emergencies.

III. POLICY

- A. When the Fire Department receives a report of carbon monoxide detector activation, Dispatchers shall attempt determine if the problem is just the activation of a detector or if there are associated medical problems or symptoms. Symptoms include, but are not limited to:

1. Headaches
2. Difficult breathing
3. Dizziness
4. Tiredness / confusion
5. Nausea
6. Flu like symptoms
7. Cherry-red skin / mucous membranes (late stages with high levels)

If there are associated medical problems, the incident shall be handled as an emergency response and EMS shall also be dispatched; otherwise, the incident shall be a non-emergency response.

- B. Upon arrival, the officer in charge shall make contact with the reporting party to determine the number of occupants in the building and what, if any, medical treatment is necessary (a person suffering from carbon monoxide poisoning may not provide factual information or accurate responses to questions). The officer in charge shall ensure that any medical treatment necessary is immediately provided. Utilizing the electronic monitor, if available a carbon monoxide reading shall be taken outside the structure and at the doorway, prior to entry. Readings of 9 parts per million (ppm) or less are considered acceptable background levels. The permissible exposure limit is 35 ppm; therefore, readings above that figure will require the use of full protective equipment, including self-contained breathing apparatus. Personnel shall search the building to determine that all occupants have been removed and shall complete the following minimum actions:

1. Fire personnel shall make a cursory inspection of the building specifically to examine potential carbon monoxide sources for signs of damage, improper installation, improper use, or tampering. Potential sources shall include, but are not limited to, any fuel-burning appliance or equipment such as stoves, ranges, fireplaces, portable kerosene heaters, gas heaters, space heaters, furnaces, and hot water heaters. Personnel shall also check for vehicles, lawn mowers, or barbecues used in close proximity or inside of buildings. Any reading above the 9 ppm background level is to be recorded on the incident report, including the specific location where detected. When monitoring for carbon monoxide levels, consideration shall be given to negative pressures within the building or a reverse stacking effect from multiple appliances.

2. Local utility company shall be contacted for assistance at the scene if deemed necessary by the incident commander.
3. Advise the homeowner of the following:
 - a) The specific ppm readings found and the location where they were detected. (If monitored)
 - b) Carbon monoxide levels may be dependent upon the tightness of the dwelling or building; consequently, opening doors and windows prior to the Fire Department or utility company arrival may dissipate accumulations of carbon monoxide, therefore, if additional detector activations occur or symptoms continue, additional investigation into the problem will be necessary.
 - c) Carbon monoxide is a colorless, odorless, and poisonous gas, which has a cumulative affect and can be fatal. Symptoms are similar to those associated with influenza. Small children and older adults may be more severely affected.

All occupants must be instructed to leave the building and not return until the absence of carbon monoxide is verified by a qualified and licensed contractor.

Under no circumstances is an occupant to be advised to re-enter a structure where a carbon monoxide detector has activated without first having a qualified licensed contractor verify the absence of carbon monoxide. If the individual has additional questions or concerns, they can be referred to their local utility company or a licensed contractor.

The following tables are for general reference only. Different agencies and manufacturers establish somewhat different concentrations and response times.

CONCENTRATION OF CO IN AIR (Ppm = parts per million)	APPROXIMATE INHALATION TIME AND TOXIC SYMPTOMS DEVELOPED
35 ppm	The maximum allowable concentration for continuous exposure for healthy adults (OSHA PEL)
200 ppm	Slight headache, fatigue, dizziness, nausea after 2-3 hours
400 ppm	Frontal headaches within 1-2 hours, life threatening after 3 hours, also maximum parts per million in flue gas (on an air free basis) according to Environmental Protection Agency and American Gas Association.
800 ppm	Dizziness, nausea and convulsions within 45 minutes. Unconsciousness within 2 hours. Death within 2-3 hours.
1,600 ppm	Headache, dizziness and nausea within 20 minutes. Death within 1 hour.
3,200 ppm	Headache, dizziness and nausea within 5-10 minutes. Death within 25-30 minutes.
6,400 ppm	Headache, dizziness and nausea within 1-2 minutes. Death within 10-15 minutes.
12,800 ppm	Death within 1-3 minutes.

SAMPLE ALARM RESPONSE TIMES	
30 ppm	Approximately 118 minutes
100 ppm	Approximately 35 minutes
200 ppm	Approximately 18 minutes
400 ppm	Approximately 8 minutes
500 + ppm	Approximately 2 1/2 minutes or less

- C. In the event that the carbon monoxide detector activates, and emergency personnel find no presence of carbon in the occupancy, the occupants should be advised:
1. The Fire Department has utilized detection instruments to check for the presence of carbon monoxide occupancy (If used). At this time, we are unable to detect a presence of carbon monoxide occupancy. However, that does not mean that presence of carbon monoxide did not exist at the time that the carbon monoxide detector sounded.
 2. Explain to the occupant that conditions could have changed since notifying emergency responders. For example, the occupant may have opened doors and window when the alarm sounded.
 3. Advise the occupant that if they may not enter or remain in the premises and it is recommended that they notify a licensed contractor to inspect the occupancy. The Fire Department cannot declare the occupancy safe from the presence of carbon monoxide.
 4. Advise the occupant to notify 911 immediately should they have additional problems with possible carbon monoxide accumulation in the occupancy.
 5. In addition, medical units responding to calls dispatched as general flu type symptoms should suspect carbon monoxide poisoning as a possible cause.

HADLEY TOWNSHIP FIRE DEPARTMENT

CARBON MONOXIDE RESPONSE:

_____ It has been explained to the occupant of the structure at _____ that it is the recommendation of the Hadley Township Fire Department that they should not occupy this structure until such time as a licensed contractor or representative from a utility company can examine the fuel burning appliances.

_____ It has been explained to the occupant of the structure at _____ that the continued use of fuel burning appliances is not recommended by the fire department. The occupant should immediately contact the local utility company or a licensed contractor before using a fuel fired appliance.

SYMPTOMS OF CARBON MONOXIDE EXPOSURE:

- Headaches
- Dizziness
- Nausea
- Cherry-red skin / mucous membranes (late stages / high levels)
- Difficult breathing
- Tiredness / confusion
- Flu like symptoms

Signature of occupant

Date

Print Name

Signature of F. D. Representative

Date

Signature of witness

Date