

Essex County Fire Standard Operating Guideline

Category: Hazardous Materials	SOG #	301.00
Issued by: EMS Division	Issued on:	04.08.2009
Revised by:	Revised on:	
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Carbon Monoxide Alarms		

PURPOSE: This standard operating guideline is intended to provide a basic plan of action for response to carbon monoxide alarms.

SCOPE: The Fire Department is responsible for providing an initial investigation of a carbon monoxide detector sounding or a reported carbon monoxide problem. The Fire Department is not there to repair the problem, but to take steps to stop the cause of the contamination. The Fire Department is to render emergency medical care if needed to occupants, to advise occupants of our findings, and to assist the occupants in exiting the structure if needed. The Fire Department recognizes that carbon monoxide is odorless, tasteless, and colorless by nature and is often produced by faulty or unusual conditions whenever a fossil fuel (coal, gas, oil, natural gas, LPG, wood and petrol) is not burned efficiently. However, since the source may be transient in nature, the source may not always be detected. It is understood that carbon monoxide may mimic flu-like symptoms, cause unconsciousness and in some instances may cause death. It is realized that young children and the elderly may be more susceptible to carbon monoxide.

GOAL: The Fire Department will provide an initial investigation of a carbon monoxide detector sounding or a reported carbon monoxide problem and will take measures to locate the source and stop the contamination and help provide safety and well being of the occupants and firefighters.

RESPONSES:

- 1.1 Dispatchers will dispatch the nearest engine company to investigations of carbon monoxide alarms sounding. The arriving unit shall institute the incident command system. The incident commander shall request any additional resources as needed. (Note: The initial response can be increased by the incident commander at any time based upon reports from dispatch.)
- 1.2 Scene assessment shall begin immediately including size-up, potential victims and hazards encountered. After victim assessment, priority shall be given to surveying the dwelling to ascertain possible levels of carbon monoxide.
- 1.3 The operator of the gas meter detector shall be properly trained in its use.

ON SCENE:

- 1.1 Initial activities to help provide for life safety:
 - A. **If no initial report of signs or symptoms:** Account for all occupants and verify no signs or symptoms are present.
 - B. **If initial or subsequent report of signs and symptoms:** Account for all occupants and ensure they are out of the structure; assess occupants and initiate emergency medical care outside of structure. If unable to account for all occupants or if some occupants are reported to be inside the structure, do a primary search using SCBA and full protective equipment and evacuate all occupants. If more manpower is required to complete the task, the incident commander should request additional resources.
 - C. All structures may require atmospheric monitoring during entry and throughout the primary search so that searchers can remain off air as long as the carbon monoxide levels remain less than 9 parts per million in order to facilitate this primary search.
 - D. For serious cases of carbon monoxide poisoning and for pregnant occupants exposed to elevated levels of carbon monoxide, helicopter transport to a hyperbaric chamber should be considered. Contact medical control and consult with medical direction if there is any question.
- 1.2 Continue with carbon monoxide investigation once life safety concerns have been addressed. (Use the Carbon Monoxide Checklist as a guide.)
 - A. Interview occupants
 - B. Conduct interior investigation using atmospheric monitoring equipment and any observations regarding fossil fuel burning equipment
 - i. Turn monitor on in fresh air and perform the start up procedure according to the manufacturer's specifications.
 - ii. Take the first reading outside the structure.
 - iii. Take the second reading just inside the structure. (Crew should be in full protective equipment with SCBA if occupants are reporting signs and symptoms or if carbon monoxide reading just inside the structure is greater than 9 parts per million.
 - iv. Verify CO Detector locations in compliance with 527 CMR 31

_____ Fire Department
Standard Operating Guideline
Dispatcher Guideline for Carbon Monoxide Detector Activation Calls

SOG Number: _____

Original Date of Issue: _____

Revised: _____

PURPOSE: This standard operating guideline is intended to provide the dispatcher with information for a response to carbon monoxide alarms.

SCOPE: Dispatchers are the first point of contact with the public and must be familiar with:

- Knowledge of the properties of CO
- Obtain pertinent information
- Query reporting party to determine appropriate level of response
- Dispatch appropriate emergency personnel and apparatus
- Instruct occupants to evacuate and seek fresh air
- Know signs and symptoms of CO exposure

Signs and symptoms may include:

- Head ache
- Nausea
- Dizziness/drowsiness
- Fatigue
- Confusion
- Fainting
- Irritability
- Loss of consciousness
- Unconsciousness
- Coma
- Seizure
- Death

PROCEDURES:

- 1.1 Dispatchers should determine the following from the reporting party:
- Name, address, telephone
 - Are occupants experiencing signs and symptoms?
 - Is a carbon monoxide alarm sounding as opposed to a smoke detector/fire alarm sounding?
- A. If caller is not sure, ask if there is any smoke or fire. If smoke or fire is reported, tell the caller to have occupants evacuate and wait together outside to meet the fire department. Dispatch a full structural fire response.
- B. If caller knows that the carbon monoxide detector is sounding or if not sure but there is no smoke or fire, ask the caller if all occupants are accounted for and if anyone has any signs or symptoms of possible carbon monoxide poisonings including flu-like symptoms.
- C. If signs and symptoms are present, tell the caller to have all occupants evacuate the building and wait outside to meet the fire department.
- D. Dispatch the nearest engine company and emergency medical services as an initial response.
- E. Ask the caller if there is gas service to the building, and if gas service is present notify the utility to respond.
- F. If there are no signs or symptoms ask the caller if there are any “high risk” occupants:
- Young Children
 - Elderly
 - People with preexisting lung or heart conditions
 - Pregnant Person
- G. If there are no signs or symptoms but there are “high risk” occupants suggest that they exit the building and wait outside for the fire department.

CARBON MONOXIDE DETECTOR ACTIVATION

NOTICE OF FINDINGS

Carbon Monoxide is an odorless, tasteless, colorless gas that is **DEADLY**. It is a by-product of a fuel burning process. It can cause symptoms that can mimic flu, unconsciousness and even death. Many appliances around the home are capable of producing Carbon Monoxide when a faulty or unusual condition exists. **Since the source may be transient in nature, the source may not always be detectable.**

The _____ Fire Department responded to investigate a possible Carbon Monoxide problem at: Time: _____ hours. (Incident Number: _____)

_____, on _____
Location Date

CARBON MONOXIDE was was not found by our instruments. This does not mean that this was a false alarm. Our instruments found the highest interior level of CO to be _____ p.p.m. (parts per million)

WHAT DOES THIS READING MEAN?

9 P.P.M or less	Our instruments did not detect elevated levels at this time. However, this does not mean that higher levels did not exist prior to our arrival nor that higher levels will not accumulate after our departure. Check your carbon monoxide detector per the manufacturer's recommendations. Call the manufacturer for additional information (number on back of unit). Replace or reset detector as directed by the manufacturer's specifications.
More than 9 P.P.M.	Our instruments have detected potentially dangerous levels of carbon monoxide. We recommend that you leave this building immediately. We feel that it is unsafe to re-occupy this building until repairs are made and your detector is replaced or reset according to manufacturer's specifications.
35 P.P.M	Maximum allowable concentration for continuous exposure in any 8 hour period according to OSHA Law.
100 P.P.M. or greater	We have detected a potentially lethal level of carbon monoxide in your home. Leave your building immediately! It is not safe until repairs are made or the source is found and corrected. Have your sources of carbon monoxide examined and if necessary repaired by a qualified repair technician. Replace or reset your detector according to manufacturer's specifications.

Carbon Monoxide affects individuals differently depending on the size, age, and medical history of the occupant(s). Therefore, families with young children or members with medical conditions, or aged individuals, should take extra precautions in the event that Carbon Monoxide is detected. The fire department would recommend that a medical doctor examine any individuals exposed to any Carbon Monoxide.

Issued by: _____ of the _____ Fire Department.

Received by: _____ Date: _____

White Copy – Fire Department

Yellow Copy – Owner/Occupant

Resources:

- Bledsoe, Bryan E. DO, FACEP, Carbon Monoxide Poisoning: Implications for the Fire Service, Texas: Cielo Azul Publications, 2008.
- Montagna, Frank C., Responding to Routine Emergencies. Oklahoma: Penn Well Corporation, 1999.
- Kiddie Safety, www.kiddiesafetyus.com
- Massachusetts Department of Fire Services, www.mass.gov/dfs
- Occupational Safety & Health Administration, www.osha.gov
- Scott Heath & Safety, www.scotthealthsafety.com, Scott Instruments, Mini-SA Portable Gas Detection Instruments
- Andover Fire Department CO Standard Operating Guideline
- Georgetown Fire Department CO Standard Operating Guideline
- Lawrence Fire Department CO Standard Operating Guideline
- Salisbury Fire Department CO Standard Operating Guideline
- Topsfield Fire Department CO Standard Operating Guideline
- Wenham Fire Department CO Standard Operating Guideline

Essex County Fire Chief's – EMS Division CO Committee

Deputy Chief James Dolan, Andover Fire Department
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