
	STANDARD OPERATING GUIDELINE				
	OPERATIONS				
	CARBON MONOXIDE ALARMS				
	Effective: 01/Sep/04	Revised: 28/Dec/2020	S.O.G. #: O-303	Page: 1 of 3	

1.0 Purpose



- 1.1 The purpose of this guideline is to standardize the response to the activation of carbon monoxide detectors and suspected elevated carbon monoxide levels.
- 1.2 The purpose of the Fire Department response will be to efficiently investigate and mitigate dangerous levels of carbon monoxide and advise the building owner of any follow-up procedures

2.0 Responsibility

- 2.1 It is the responsibility of all Department personnel to understand the procedures documented in this Standard Operating Guideline.

3.0 Carbon Monoxide Monitoring Procedures

- 3.1 Upon receipt of a report of an activated carbon monoxide alarm, local detector activation, or an incident involving suspected elevated levels of carbon monoxide, the Highland Park Dispatchers shall:
 - 3.1.1 Determine that the alarm is from a carbon monoxide detector.
 - 3.1.1.1 In situations where the alarm was received through a monitored system and no occupants are present to meet the Department, entry to the occupancy shall be made to check for life threatening hazards or potential victims.
 - 3.1.1.1.1 Forcible entry may needed to be unitized if no other options are available to gain entry (Knox Box keys, key holders, exc.).
 - 3.1.1.1.2 If assistance is need in making the determination to force entry, the on-duty Battalion Chief shall be contacted.
 - 3.1.1.2 Determine a need for E.M.S. response. This determination is based on person(s) complaining of any discomfort or illness from carbon monoxide poisoning that may include headache, nausea, vomiting, chest pain, confusion, loss of coordination, or seizures.
- 3.2 If there is a suspected elevated carbon monoxide level, advise the occupants to evacuate immediately.
- 3.3 Initiate the appropriate response:
 - 3.3.1 Code 1 - Calls for carbon monoxide detectors or elevated carbon monoxide levels with person(s) complaining of symptoms. This response will be for one Engine, Squad, or Truck Company and one Ambulance.
 - 3.3.2 Code 2 - Calls for carbon monoxide detector activation with no reported illness. This will be a single Engine, Squad, or Truck Company response.
- 3.4 Highland Park Fire Department personnel, after arrival on the scene, shall:
 - 3.4.1 Assess the situation and determine the level of service required.
 - 3.4.2 Don S.C.B.A. when working in areas where possible toxic levels of carbon monoxide may exist.
 - 3.4.3 Evacuate the occupancy if necessary.
 - 3.4.4 Evaluate the need for E.M.S. response if the initial response was a Code 2.
 - 3.4.5 Treat any person experiencing symptoms of carbon monoxide overexposure in accordance with Highland Park Hospital E.M.S. System protocol.
 - 3.4.6 Turn on any monitoring device in fresh air and sample the atmosphere. If, in the judgment of the Company Officer, there is a need to monitor the atmosphere and verify the reading digitally, a detector

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that can monitor carbon monoxide will be utilized and the atmosphere monitored. If your station's monitoring device is out of service, call for a unit from another company (Engine, Truck, or Squad). Monitoring should be performed after fuel-burning appliances have been operating for several minutes. If the source of the carbon monoxide leak is determined, the appliance in question will be shut down and North Shore Gas Company or the appropriate appliance service contractor will be notified. If the problem is from an appliance, the appliance service contractor will be notified by the homeowner.



- 3.5 Monitor the interior atmosphere within the following guidelines:
 - 3.5.1 If carbon monoxide levels are below 35 ppm, S.C.B.A. need not be worn.
 - 3.5.2 If carbon monoxide levels are above 35 ppm, S.C.B.A. must be utilized. (OSHA recommended level for S.C.B.A. use, TLV). If carbon monoxide levels are over 100 ppm, it shall be considered an IDLH situation and immediate ventilation will begin.
- 3.6 Utilize S.C.B.A. until carbon monoxide readings are below 35 ppm.
- 3.7 Mitigate the cause of the carbon monoxide (shut off appliance, utilities, etc.)
- 3.8 Advise occupants of findings and whether it is safe to re-enter the structure.

4.0 Reporting

- 4.1 If the call is handled as a Code 2, then only a NFIRS report is to be submitted for the incident.
- 4.2 If the call is handled as a Code 1 (or if E.M.S. services are rendered on the scene), an E.M.S. report is to be submitted **IN ADDITION TO** a NFIRS report. The NFIRS report shall document actions taken to investigate and mitigate the source of the carbon monoxide.
- 4.3 If the call is from an activated carbon monoxide detector, document the detector manufacturer, model number, and serial number on the report.
- 4.4 Detector information is not necessary if one is present but it did not activate and did not prompt the request for Fire Department services.

5.0 Toxic Effects of Carbon Monoxide

<u>COppm</u>	<u>CO % in Air</u>	<u>Symptoms</u>
100 ppm	0.01%	Entering IDLH threshold, may begin to see symptoms of CO poisoning
200 ppm	0.02%	Mild headache - other symptoms
400 ppm	0.04%	Headache after 1 to 2 hours
800 ppm	0.08%	Headache after 45 minutes: nausea, collapse, and unconsciousness after 2 hours
1000 ppm	0.10%	Dangerous - unconscious after 1 hour
1600 ppm	0.16%	Headache, dizziness, nausea after 20 minutes
3200 ppm	0.32%	Headache, dizziness, after 5 to 10 minutes, unconsciousness after 30 minutes
6400 ppm	0.64%	Headache, dizziness, nausea, after 1 to 2 minutes, unconsciousness after 15 minutes
12800 ppm	1.26%	Immediate unconsciousness, danger of death in 1 to 2 minutes

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6.0 Reference

6.1 Highland Park Fire Department

Approved:  Fire Chief