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|  | FLINT HILL FIRE DEPARTMENT**STANDARD OPERATING GUIDELINE** |

**Guideline Number:**  410.14

**Guideline Title:** CO Incident

**Adopted:** 8/8/2023

**Rescinds:** New

**Approved By: (Chief)**

1. **PURPOSE:**

To define consistent guidelines and responsibilities for firefighters to safely, efficiently and quickly control incidents involving carbon monoxide (CO). Caution should be exercised to assure proper and effective investigation of all potential sources of CO.

1. **DISCUSSION:**

This guideline will establish a standard approach and response to investigate all reports of possible CO incidents. CO is an odorless, colorless, and tasteless gas that is deadly. It is a by-product of combustion. Many appliances such as furnaces, kitchen stoves, hot water heaters, automobiles, etc., can produce CO. When a faulty device or unusual condition exists, CO may be vented into areas where people are present. CO poisoning may be difficult to diagnose. Its symptoms are like that of the flu, which may include headache, nausea, fatigue, and dizzy spells for low levels and convulsions, unconsciousness, and death at high levels.

1. **GUIDELINE:**

The following guideline is in the recommended order of implementation, reflecting the relative priorities on a CO incident.

1. The appropriate apparatus should respond to the location quickly with due regard for the safety of others. Refer to (SOG 400.04 APPARATUS RESPONSE).
2. Incident Command should be implemented following (SOG 402.01 INCIDENT COMMAND).
3. All personnel should don proper Personal Protective Equipment (PPE). Minimum PPE for all firefighters working in the hazard zone should be full turnout gear and SCBA (not on air initially). All CO responses are considered a hazard until determined otherwise using air monitoring.
4. Determine if anyone is exhibiting any symptoms of CO poisoning. If so, immediately evacuate the premises and have an EMS unit respond. Then begin to investigate the cause. All occupants exhibiting signs of CO poisoning should have their SpCO level checked by EMS to determine if they are truly suffering from CO poisoning or possibly some other affliction.
5. Zero the meter in fresh air and comply with all other start up procedures as recommended by the manufacturer of the metering equipment.
6. Verify that the alarm is coming from a CO detector or combination smoke detector. Determine the cause of the alarm (e.g., true alarm, low battery indication, poor location of the device, etc.).
7. Initiate a survey of the premises to determine if there are any amounts above 9 ppm of CO present. Start your air monitoring outside of the exterior door.
8. If a level of over 9-ppm is detected, the building will be evacuated. The CO investigation report (410.14 CO INVESTIGATION REPORT) should be used while air monitoring.
9. All Flint Hill Fire Department (FHFD) members should use SCBA in any atmosphere that is more than 35 ppm of CO.
10. Readings of 9 ppm or less:
11. Inform the occupants that our test instrument did not detect an elevated level of CO.
12. Recommend occupants check their CO detector per manufacturer recommendations.
13. Attempt to reset the detector.
14. Inform the occupants to call again if the detector reactivates.
15. Readings of more than 9 ppm but less than 100 ppm:
16. Any readings above 9 ppm shall be considered an above normal reading.
17. Occupants should be informed that a potentially dangerous level of CO has been detected.
18. Occupants should leave the premises.
19. If it is determined an appliance is malfunctioning and thereby producing CO, it should be shut down and the building ventilated. Notify the occupant to not use the appliance and to contact a certified appliance technician.
20. Once the premises have been reduced to a safe level of CO, the premises may be reoccupied at the discretion of the occupant.
21. An attempt should be made to reset the detector.
22. Inform the occupants to call again if the detector reactivates.
23. Readings of 100 ppm or greater:

a.) Any reading of 100 ppm or greater inform the occupants that we have detected a very lethal level of CO.

b.) Order the occupants to leave the premises *immediately*.

c.) If determined an appliance is malfunctioning and thereby producing CO, it

 should be shut down and the building ventilated. Notify the occupant to not use

 the appliance and to contact a certified technician.

1. Once the premises has been reduced to a safe level of CO, the premises may be

 occupied at the discretion of the occupant.

d.) Attempt should be made to reset the detector.

e.) Inform the occupants to call again if the detector reactivates.

**Strategic Considerations**

1. Care should be taken ventilating the structure prior to air monitoring. Once readings have been taken, windows and doors can be opened to ventilate the structure.
2. Be aware of charging batteries in golf carts. The batteries will off gas hydrogen and in turn give you false CO readings.
3. YCNG does not recommend fire departments shutting off the gas service at a meter due to problems created with pilot lights. Try to isolate the problem of faulty equipment.

**Tactical Considerations**

1. IDLH of CO is 1200 ppm
2. Lower explosive limit of CO is 12%
3. The vapor density of CO is .968 (air = 1)