Travis County Emergency Services District No. 9
Westlake Fire Department

Standard Operating Procedure

Subject: **Carbon Monoxide Emergencies Response**

Effective Date: **July 1, 1997**

Authorized By: **Chief Paul Barker** **Revised Date: June 15, 2000**

I. Purpose

To implement uniform response guidelines for dealing with suspected Carbon Monoxide emergencies and reported Carbon Monoxide Detector activation.

I. Background

The public has become acutely aware of the dangers of CO. As more detectors are placed into household use, our mission expands to include proficiency in use of Carbon Monoxide Detectors and use of the District's test equipment.

CO is a colorless, odorless, combustion by-product gas that has a vapor density of 0.967 making it slightly lighter than air. OSHA has established 35 Parts Per Million (PPM) is the maximum allowable concentration CO for continuous exposure for any 8 hour period.

Common signs and symptoms of CO poisoning include: headaches, dizziness, nausea, fatigue, impaired vision and judgment, seizures, respiratory failure, and unconsciousness. People most susceptible to CO poisoning are: Individuals with heart and respiratory disease, the elderly, the unborn, newborns, infants, children, and persons with anemia.

III. Policy

All personnel responding to a CO alarm shall:

- Understand the operation of CO test equipment utilized in the District.
- Know how to search and clear an occupancy of CO.
- Wear SCBA in an environment that has dangerous levels of CO.

IV. Procedure

1. Code One response unless dispatch notifies that the occupants have symptoms of CO poisoning as outlined above.
2. Upon arrival at the location of the CO alarm, personnel will **first** attend to the medical needs of any patient found.
3. A determination will then be made as to whether a CO detector is/has alarmed of if the alarm was a smoke detector.
4. Prior to entering a structure that has had a reported CO alarm activation, at least two personnel shall don SCBA.

5. A CO Detector reading shall be taken immediately upon entering the building. If the reading is less than 35 PPM, the SCBA may be removed following the opening of sufficient doors and windows.
6. Samples/readings will be taken in the following locations:
    - In the HVAC closet
    - In the water heater closet
    - In any room with a combustible appliance
    - In rooms with a fireplace
    - At least 2.0 feet into the attic space

    In rooms with HVAC registers, take samples 12" away from register.
6. If the home has been ventilated, don SCBA, shut windows, and attempt to duplicate the conditions that existed when the alarm was first noted by occupants. Inquire as to which appliances were being used prior to our arrival. Appliances should be allowed to operate at least 15 min. before testing. If the CO source is determined to be a gas appliance, turn the gas off at the appliance. Do not turn off service to the entire house.
7. If a detector has a removable sensor, remove it and check for discoloration. This indicates an accumulation of CO. If the sensor is white, it probably malfunctioned.
8. Ventilate the structure to safe levels using electric smoke ejectors and fans owned by the occupants: The following guidelines are provided for interpretation of the CO readings:

    - 0-9 PPM **ACCEPTABLE:** Newly constructed or tight, well-insulated structures may have CO levels of 5-10 PPM
    - 10-35 PPM **CAUTION:** Levels are unusually high
    - 36-99 PPM **WARNING:** Advise occupants against re-entry
    - 100+ PPM **DANGER:** Must leave house **immediately.** Re-enter only after source is determined and corrective action is taken.
    - 200 PPM **THRESHOLD LIMIT VALUE CEILING (TLV-C):** This concentration should never be exceeded.

9. Use the attached forms to document your findings. Leave a copy of both forms with a responsible party and attached the others to the fire report.

WESTLAKE FIRE DEPARTMENT

NOTICE OF DANGEROUS SITUATION

CARBON MONOXIDE ALARM EMERGENCY

The Westlake Fire Department responded to the building at _____

_____ on _____, Date___. A Carbon Monoxide

level of _____ PPM was discovered.

YOU ARE ADVISED TO IMMEDIATELY

LEVEL LESS THAN 9 PPM:

Check your carbon monoxide detector per manufactures recommendation. Install a replacement detector / sensor module.

Our instrument did not detect an elevated level of CO at this time. If your detector activates again call 911 - Westlake Fire Department.

You might contact your fuel supplier, or heating / appliance professional to check your system.

LEVEL MORE THAN 9 PPM:

We have detected a potentially dangerous level of CO. We recommend that you leave your home immediately. We have notified your fuel supplier _____ to respond and help identify and eliminate the source of CO. It is not SAFE until repairs are made or the source of CO is found and eliminated.

YES / NO Westlake Fire Department has located and shut off source of CO.
If yes, what was the source _____
If NO, we recommend that you stay out of the house until your fuel supplier arrives and eliminates the source.

** LEVELS MORE THAN 100 PPM:

We have detected high levels of CO that may potentially be lethal. You are ORDERED to leave your home immediately. We have notified your fuel supplier to respond to help identify and eliminate the source of CO.

YES / NO Westlake Fire Dept. has located and shut off the source of CO.
If yes, what was the source: _____
If NO, You are to stay out of the building until your fuel supplier arrives and eliminated the source.

Officer in Charge: _____, Date: _____

Received By : _____, Occupant, Time: _____

White copy dept. / Yellow copy resident

WESTLAKE FIRE DEPARTMENT

CHECKLIST FOR CARBON MONOXIDE ALARM EMERGENCY

LOCATION OF INCIDENT: _____ Date: _____

CHECKLIST

Are any members of household feeling ill? Yes _____ No _____

Do you feel better when away from the house? Yes _____ No _____

Headache	Yes _____	No _____
Fatigue	Yes _____	No _____
Nausea	Yes _____	No _____
Dizziness	Yes _____	No _____
Confusion	Yes _____	No _____

Were any appliances turned off before our arrival? Yes / No
If yes, which ones? _____

Was fresh air let in before arrival? Yes / No
If yes, How and How long? _____

INITIAL PPM READING INSIDE STRUCTURE : _____ TIME : _____

ADDITIONAL PPM READING INSIDE STRUCTURE : _____ TIME : _____

DEPARTURE PPM READING INSIDE STRUCTURE : _____ TIME : _____

CO SOURCE CHECKLIST		LOCATION	PPM READING
Chimney	Clogged flue, blocked opening	_____	_____
Fireplace	Gas, wood	_____	_____
Portable Heater	Emissions	_____	_____
Gas Dryer		_____	_____
Water Heater	Chimney pipe	_____	_____
Oven / Range		_____	_____
Furnace	Gas / leaking flue / chimney pipe	_____	_____
Barbecue Grill	In enclosed area	_____	_____
Car Garage	Car started or running recently	_____	_____
Operating fireplace w /HAVC on, possible backflow		_____	_____

Was any appliance turned off by Fire Dept. YES / NO
If yes: which one? _____

CARBON MONOXIDE DETECTOR: MAKE _____ MODEL _____ SN. _____

FIREFIGHTER COMPLETING CHECKLIST _____

White copy fire dept. / Yellow copy resident