CAPITAL CITY FIRE/RESCUE **SOG NUMBER 19.0**

STANDARD OPERATING GUIDELINES **DATE: August 30, 2006**

REVISION DATES:

CARBON MONOXIDE ALARMS

OBJECTIVE:

To assist firefighters when encountered with a CO alarm and to ensure safe reoccupation of a structure.

GUIDELINE:

19.1 The guideline will include but not necessarily need to involve all the following procedures:

1. First Responding/Arriving Unit
2. Search and Rescue
3. Investigation
4. Re-occupancy
5. Incident Reporting

19.2 ***First Responding/Arriving Unit Actions:***

19.2.1 Determine from dispatch the severity of the situation.

- Reported number of people involved
- Reported symptoms
- Possible sources
- If it is **only** a CO alarm and no other factors are involved

19.2.2 On Arrival of Unit

- Size up the scene and give a radio report (two typical scenarios)

19.3 Simple CO Alarm:

For a simple CO alarm and nothing else is extenuating (no symptoms, no unaccounted person, no obvious source of high emitting CO machinery/equipment), use the following guidelines:

19.3.1. Prior to entering the facility, calibrate the CO monitor

19.3.2. Do not ventilate the building unless for life/safety.

19.3.3 Enter the facility with zeroed out monitor. If any significant reading occurs, exit and re-enter the facility with an SCBA and a partner (with a back-up crew outside) **Proceed to non-simple procedure algorithm.**

19.3.3.1 Interview the reporting party

19.3.3.2 Go to CO alarm – Evaluate the detector for possible mechanical problems.

19.3.3.3 Use CCF/R CO monitor to record the CO levels in the first room of alarm origin. Then proceed to a systematic evaluation of the building paying particular attention to rooms with fuel-fired equipment.

19.3.3.4 Document what has been done.

19.3.3.5 If the CCF/R CO monitor is not finding high levels of CO – advise the occupants of:

19.3.3.6 Of warning symptoms/signs of CO poisoning and if any symptoms/signs appear in the future, to evacuate and contact 911 again.

19.3.3.7 If the occupant has further concerns, the occupant may want to have all hearing sources that may produce CO evaluated by a professional maintenance technician.

19.3.3.8 Proceed to the incident reporting phase of the guidelines.

19.4 Complex and life hazard CO call:

19.4.1 Call for backup and medical unit to report to the scene

19.4.2 Search and rescue

19.4.3 Interview and evaluate occupants for symptoms/signs of CO. Keep in mind that high-risk groups may be more distressed from exposure than others (i.e., pregnant women, very young and elderly, persons with pre-existing cardiopulmonary problems, persons who have been exerting themselves at high levels. **(Note: CO level of 10 ppm may not be safe for these high-risk individuals)**

19.4.4 Secure the facility and determine the cause and shut down equipment. Be cautious of the fact that CO can be an explosive gas.

19.5 Investigation:

19.5.1 Evaluate and determine effectiveness of all smoke and CO detectors.

19.5.2. Ventilate the premises after the source of the CO has been determined. Use the extension tubes for the PPV fans if they are used to ventilate the building. **Always take additional CO readings after use of the PPV fan.**

19.6 Re-occupancy

19.6.1 . Do not allow/advise re-occupancy of the facility unless the cause of the CO alarm has been determined and secured.

19.6.2 . The facility has been ventilated to bring the CO levels to below 10 ppm and the CO detector has reset and appears to be correctly functioning.

19.6.3 Occupants and/or responsible parties have been advised verbally and in writing of CO hazards and that they should advise all other occupants

19.6.4 If doubt exists on the reliability of the CO detector, the responsible party should be advised to contact a certified technician. This should be documented on the incident report.

19.7 Reports:

19.7.1 CCF/R has two reporting documents that should be completed with each call.

19.7.2 "Detail Checklist for Carbon Monoxide Detector Activation"

- One copy to be attached to the incident report.
- One copy to the Fire Marshall.

19.7.3 "Carbon Monoxide Detector Activation Notice of Findings"

- One copy (white) to be left with the building occupant
- One copy (yellow) attach to the incident report.

19.8 Common threshold values

The following chart lists exposure limits for carbon monoxide.

	Exposure Level	Maximum Exposure Time
IDLH	1500 ppm	-
CEILING	200 ppm	-
REL/TWA	35 ppm	8 hours

IDLH = Immediately Dangerous to Life or Health.
CEILING = The maximum exposure permitted by workers during the work period, when using time weighted average.
TWA = Time Weighted Average are based on the average exposure of a normal worker exposed to the chemical over an eight hour work period.
REL = Recommended Exposure Limits per the National Institute for Occupational Safety and Health.
ppm = Parts Per Million

Carbon Monoxide Monitoring Worksheet

Use a Carbon Monoxide Monitoring Worksheet to record readings during monitoring procedure in order to note changes and assist in developing a work and ventilation plan.