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# Atmospheric Monitoring for Carbon Monoxide

## 305.1 PURPOSE AND SCOPE

This policy establishes procedures for measuring atmospheric concentrations of carbon monoxide (CO) at an incident for the safety of members working in potentially hazardous conditions.

### 305.1.1 DEFINITIONS

Definitions related to this policy include:

**Calibration** - The process of resetting the values for each sensor in the instrument.

**Spanning** - The process of using the calibration gasses to check the calibration of the instrument, also known as bump testing.

## 305.2 POLICY

Exposure to CO can be hazardous to the health of those exposed. It is the policy of the Blue Ridge Fire District to mitigate the health risks associated with exposure to CO by its members and the public.

## 305.3 RESPONSIBILITIES

Captains should ensure that atmospheric monitoring instruments are spanned or calibrated to manufacturer's specifications on a weekly basis, if they have not been used, and prior to use.

The instruments should be stored in operating condition.

The Incident Commander or the authorized designee is responsible for measuring atmospheric concentrations of CO at any location containing or suspected of containing elevated levels of CO.

## 305.4 PROCEDURES

Carbon monoxide may be present as a by-product of combustion, an emission from internal combustion engines, a chemical reaction or a leak from an industrial process. Carbon monoxide has approximately the same vapor density as air. When measuring for atmospheric concentrations of CO at an incident, instruments do not have to be placed near the floor or ceiling to obtain accurate readings.

Positive pressure ventilation may be used to reduce the CO concentration, as well as the presence of other toxic gases in the atmosphere.

All members shall use self-contained breathing apparatus (SCBA) in any atmosphere containing 35 parts per million or greater of CO. An atmospheric concentration of CO that is below 35 parts per million does not necessarily indicate an adequate level of oxygen or eliminate the possibility of other toxic gases or products of combustion being present.

Members shall also use an SCBA in any atmospheric concentration of CO that is below 35 parts per million where there is also the presence of visible smoke, and in any atmosphere containing less than 19.5 percent oxygen (29 CFR 1910.134; AAC § R20-5-602).

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### **305.5 EMERGENCY MEDICAL TREATMENT**

A person with acute CO exposure may exhibit the signs and symptoms of headache, flushing, nausea, vertigo, weakness, irritability, unconsciousness, and in persons with pre-existing heart disease and atherosclerosis, chest pain and leg pain.

An affected or incapacitated person should be removed from further exposure and have appropriate emergency medical procedures implemented, including any listed on the Safety Data Sheet (SDS) for CO.

All personnel with the potential for becoming exposed to CO or being present during an exposure should be familiar with emergency procedures, the location and proper use of emergency equipment, and the methods of protecting themselves during rescue operations.

### **305.6 DOCUMENTATION**

Each time an atmospheric monitoring instrument is spanned or calibrated, the testing will be entered on a log. The log should be submitted to a Captain once a month and retained in accordance with the established records retention schedule. The log documents will serve as a history of an instrument's performance.