



Division 05

Emergency Medical

Chapter 23 – Carbon Monoxide Monitoring for EMS Units

March 2009

POLICY

The purpose of this General Order is to establish guidelines for the use of the ToxiRAE3 Carbon Monoxide Detector.

DEFINITIONS

Detector - RAE Systems ToxiRAE 3 single gas Carbon Monoxide Detector

EMS Unit – The specific radio identifier assigned to the crew responding on a piece of apparatus.

Tour of Duty – Period of time the crew is assigned to and responsible for the operational readiness of the response apparatus.

Vehicle – The individual piece of apparatus, to which an M number is assigned.

PROCEDURES

1. General Information

During routine responses, Fire/Emergency Medical Service (EMS) personnel could unknowingly be exposed to a colorless, odorless, and tasteless toxic gas known as carbon monoxide (CO). Due to this risk, all EMS units are issued the RAE Systems ToxiRAE 3 single gas CO Detector. This detector, designed for personnel safety, will alert when exposed to dangerous levels of carbon monoxide.

Carbon monoxide is hazardous because it binds to hemoglobin found in red blood cells. This prevents effective transportation of

oxygen throughout the body, which results in tissue hypoxia.

Signs and symptoms of carbon monoxide exposure include, but are not limited to:

- Mild – Headache, nausea, vomiting, dizziness, blurred vision.
- Moderate – Confusion, syncope, chest pain, tachycardia, weakness.
- Severe – hypotension, palpitations, respiratory arrest, pulmonary edema, seizures, coma, cardiac arrest.

2. Distribution

Each EMS Unit is issued one (1) RAE Systems ToxiRAE 3 single gas CO Detector. This detector is kept with the unit at all times.

- ALS units will keep the ToxiRAE 3 secured to the respiratory bag.
- BLS units will keep the ToxiRAE 3 secured to the aid bag.
- The detector is a piece of equipment assigned to the EMS unit, not the vehicle, similar to the unit pager.

3. Operation

Every EMS crew is responsible for ensuring the detector is present and functioning at the beginning of their “tour of duty.”

- If the detector is missing, notify immediate supervisor, complete a Loss Damage Report and contact Apparatus Maintenance (AMD) for replacement.



- If the display screen is blank, press and hold the left button to turn the unit on. Wait for the 60 second countdown, and “OK” to appear before use.

Normal Screen

- The battery life of the ToxiRAE 3 is two (2) years of constant run time, so there is no reason to turn the detector off.
- The crews should refrain from pushing any buttons on the detector unless it is necessary to turn the unit on for operation.
- The front of the detector, containing the “sensor,” should be kept free and clear of obstructions.

Calibration & Maintenance

Each ToxiRAE 3 will be routinely calibrated by station personnel while swapping vehicles at Apparatus Maintenance. The meter calibration equipment and procedures are posted next to the calibration station.

- If at any time, the unit should flash “Bump” or “CAL” on the LCD screen, the detector should be taken to Apparatus Maintenance for calibration.
- If the detector is broken or an error message (“E01,” “bAt”) appears, contact Apparatus Maintenance for a replacement.

Alarms and Actions

If the unit should activate (alarm) at any point during a call, the crew should:

- Immediately remove themselves and any other occupants from the structure.
- Notify Public Safety Communications and request a CO Leak Assignment.
- Not re-enter the structure without SCBA.
- Not attempt to ventilate the structure until the source of the carbon monoxide can be indentified and isolated.

4. Responsibilities

Station Personnel

Station personnel are responsible for the general care and inspection of the unit on a daily basis. Station personnel are also responsible for ensuring that the detector is calibrated each time the EMS unit is swapped out at Apparatus Maintenance.

Apparatus Maintenance

Apparatus Maintenance is responsible for the replacement of damaged or malfunctioning detectors. In addition, Apparatus Maintenance will address general questions and answers about the units and their maintenance.

REFERENCES

N/A

FORMS/ATTACHMENTS

Attachment 1 – Unit Diagram

