



Scarborough Fire Department Scarborough, Maine



Standard Operating Guidelines

Book:	Book 3 – Emergency Operations
Chapter:	Firefighting Operations
Subject:	3310 – Post Structure Fire Air Monitoring
Revision Date:	01/13/2009
Approved by:	<i>B. Michael Thurlow</i>

PURPOSE

To establish guidelines for monitoring Carbon Monoxide (CO), Hydrogen Cyanide (HCN), and Oxygen (O₂) levels in structure fire buildings to determine when respiratory protection is no longer needed for the protection of personnel.

POLICY

It shall be the policy of the Scarborough Fire Department to monitor air quality following structure fire suppression activities to determine when it is safe to operate in a building without respiratory protection.

PROCEDURE

- A. When the fire has been extinguished and ventilation has been completed so visibility is not impaired, the incident commander shall request to have the structure monitored for air quality levels. These levels will need to meet safe operational limits per OSHA standards.
- B. The Biosystems 4-Gas Meter and the Biosystems Toxi Pro Hydrogen Cyanide (HCN) meter will be used to monitor the air quality in all areas where crews will be operating.
- C. For respiratory protection to be removed, all criteria below must be met:
 - a. CO – Must be less than 35 parts per million (ppm) or below
 - b. HCN – 0 ppm
 - c. O₂ – Greater than 19.5%, but less than 23 %
- D. All readings and actions shall be forwarded to dispatch for recording and eventual inclusion in the fire report.

EQUIPMENT

- A. Full protective clothing and self contained breathing apparatus
- B. Toxi-Pro HCN Meter
- C. 4-Gas Meter

CONSIDERATIONS AND COMMENTS

- A. At no time does this SOP require an individual not to use breathing protection.
- B. The incident commander or safety officer may require personnel to wear breathing protection at any time, regardless of the air quality levels obtained.
- C. Consistent with OSHA (Short Term Exposure Limits), if the HCN reading is less than 4.7 ppm, a member may be in the structure for less than 15 minutes without respiratory protection with the approval of the incident commander or the safety officer provided they are working within the accountability system.
- D. If the oxygen levels are less than 20.9%, it is advisable to determine why the levels are low and what may be displacing the oxygen.

RESPONSIBILITIES

- A. It is the responsibility of the Incident Commander and Safety Officer to implement the air monitoring process.
- B. It is the responsibility of all members to wear full Personal Protective equipment including SCBA until authorized to doff them based on air monitoring results.

REFERENCES

- A. Gorham Fire Department, SOP, (Post Structure Fire Air Monitoring) “Fire Ground Operations.
- B. CDC (Hydrogen Cyanide Emergency Response Card (NIOSH) – ERC74-90-8
[Http://www.bt.cdc.gov/agent/cyanide/erc74-90-8pr.asp](http://www.bt.cdc.gov/agent/cyanide/erc74-90-8pr.asp)