

Operating Guideline # 228

Limiting Exposure to Fire Gases

September 30, 2019



PURPOSE:

The purpose of this Operating Guideline (OG) is to create an awareness of fire gases and the threat they pose to firefighter wellness.

ISSUE/RATIONALE:

Today's fires have the potential to give off a myriad of fire gases such as Carbon Monoxide (CO) and Hydrogen Cyanide (HCN).

HCN is a deadly gas given off as a by-product of combustion. The greatest amounts of HCN are released during the smoldering stages of a fire. HCN has an IDLH of 50 ppm. Examples of fires that may produce HCN can include a pot on a stove/cooking fires (an average small kitchen fire may produce 75 ppm of HCN), car fires, and dumpster fires. Overhaul operations or fire investigations may also expose staff to HCN. Symptoms of HCN exposure could range from a headache or blurred vision to seizures or death. Long-term health effects could include respiratory problems, heart disease or brain damage. HCN is particularly dangerous when it combines with CO – the dangerous combination is sometimes referred to as the “toxic twins” as each gas seems to magnify the toxicological effects of the other.

GUIDELINE:

1. All staff must adhere to the provisions of the respiratory protection program and departmental OG's regarding the use of SCBA (SEE ALSO MLFD OG 105 – Personal Protective Clothing Care and Maintenance; MLFD OG 203 – Breathing Apparatus; MLFD OG 216 – Annual FIT Testing; MLFD OG 223 Respiratory Protection During Fire Investigations; MLFD OG 301 – SCBA Maintenance Schedule; MLFD OG 308 – Limiting Exposure to Exhaust Fumes; MLFD OG 901 Vehicle Fires; MLFD OG Aviation Emergencies; and MLFD OG 1409 – Initial Response Considerations for Haz-Mat Incidents)
2. Where possible, air monitoring should be instituted in all post-fire situations in enclosed areas and the results of such testing shall be recorded by the officer-in-charge of the incident in the “Officers Notes” section of the incident report.

RESPONSIBILITY:

It is the responsibility of all members to comply with the provisions of this OG and particularly that Company Officers (supervisors), and firefighters or other staff (workers) ensures that they adhere to their duties in accordance with the OSHA.

DEFINITIONS:

“IDLH” means “Immediately Dangerous to Life or Health”. It is the threat of exposure to airborne contaminants where exposure is “likely to cause death or immediate or delayed permanent adverse health effects or prevent escape from such an environment.”

REFERENCES:

- Occupational Health and Safety Act (RSO 1990, c. 0.1)
- Section 21 Committee Guidance Note GN 6-36 Limiting Exposure to Fire Gases