PURPOSE: By-products and gases from combustion pose a serious health risk to NKFD personnel. Following a working structure fire, the air may contain various toxic gases. These gases are often invisible to the naked eye. In particular Hydrogen Cyanide (HCN) and Carbon Monoxide (CO) are two deadly gases that pose immediate and long-term health effects on first responders.

The intent of this policy is to develop a practical procedure for air monitoring following structure fires to facilitate the removal of SCBA for personnel operating on the fireground.

To effectuate this policy personnel shall:

- Conduct on-going air monitoring
- Assess current atmospheric conditions
- Evaluate potential changes in air quality and/or atmospheric conditions

SALVAGE & OVERHAUL

During salvage and overhaul operations atmospheric monitoring shall be utilized to establish that a safe atmosphere exists prior to discontinuing the use of SCBA.

Air monitoring shall consist of, at a minimum the following:

- Oxygen (O2)
- Carbon Monoxide (CO)
- Hydrogen Sulfide (H2S)
- Hydrogen Cyanide (HCN)
- Lower Explosive Limit (LEL)

The following limits shall be met prior to the removal of SCBA:

- O2 levels between 20.5% - 23.5%

- CO levels less than 35ppm
- H2S levels less than 10ppm
- HCN levels less than 4.7ppm
- LEL levels less than 10%

*Above limits found at https://www.osha.gov/dsg/annotated-pels/ last accessed on 4/30/2019

PROCESS: During the salvage and overhaul process, after all visible fire has been extinguished companies may request air monitoring for the purpose of removing SCBA.

Once proper air monitoring has been conducted, the incident commander, or designee, may permit companies to doff SCBA.

Personnel shall maintain SCBAs in a state of readiness in the event circumstances change and the need to don SCBA returns.

Personnel assigned to fire investigations, safety officer, or any other departmental function on the fireground shall follow the same procedures set forth above.

DEFINITIONS:

WORKING STRUCTURE FIRE: Designation made by either the first arriving fire company officer or deputy chief. It denotes a fire in a structure requiring the use of at least one hose line and the holding of all companies on the initial alarm assignment. Motor vehicle fires that are either immediately adjacent to a structure or pose a potential risk of spreading to the structure shall be included in the definition of working structure fire. A company officer or deputy chief may also refer to a working structure fire as “working fire.”