Operating Guideline

James City County Fire Department

Revised: June 2019 **Revision Due: June 2020**

RESPIRATORY HAZARD PROTECTION

PURPOSE

The Respiratory Hazard Protection guideline is designed to prevent firefighter injury and illness involving respiratory hazards stemming from occupational hazards and to comply with OSHA 29 CFR, Part 1910.134.

POLICY

A Respiratory Protection Program (RPP) is essential in providing respiratory protection to fire department members. Program elements include respirator selection and use policies, training requirements for all respirators, fit testing users, respirator maintenance, respirator inspections, record keeping, cylinder flow testing and air monitoring.

Atmospheric Monitoring on the fire ground is not an acceptable gauge for determining levels of toxicity within a post-fire atmosphere. The past practice of atmospheric monitoring to determine toxic levels within a defined atmosphere shall be discontinued as the means to relax Self Contained Breathing Apparatus (SCBA) use. This practice has provided a false sense of security and safety, as carbon monoxide is only one of many hazards.

PROCEDURE

When Immediately Dangerous to Life and Health (IDLH) environments are encountered SCBA use is mandatory to include the post-fire environment.

IMPROVE PRACTICES ON THE FIRE GROUND TO LIMIT FIREFIGHTER EXPOSURE

The Incident Commander (IC) should consider rotating crews out of smoke and toxic atmospheres. If staffing levels allow, frequent rotation of fire attack crews will limit time of exposure.

The IC should establish zones at a structure fire similar to that of a hazardous materials incident with airway protection determined by the IC/Incident Safety Officer (ISO) for each:
Hot Zone - Area defined by active fire involvement.
Warm Zone - Area immediately adjacent to hot zone typically outside the structure. *Overhaul Zone* - Area where active fire involvement occurred and where firefighters will be working to ensure fire is extinguished.
Cold Zone - Area outside of the reasonable tract of the toxic atmosphere travel. Rehab should be located in this zone.

Apparatus Operators should consider donning an SCBA when near a fire scene and in the air tract of the fire.

UTILIZE VENTILATION AND COOLING TO LIMIT FIREFIGHTER EXPOSURE

Ventilation, post fire knock-down, will dilute the toxic atmosphere or transport them away from the fire structure. Consider the use of electric fans or natural ventilation during overhaul operations as gas-powered fans may introduce Carbon Monoxide into the environment. Be aware of how and where the air tract may potentially transport the toxins.

Ventilation will not stop the production of toxins by itself**.** Allowing contents and structure to cool reduces the production of toxins. Remote application of water reduces exposure to firefighters while cooling the materials. Use of foam will improve penetration and increase cooling.

Ventilation shall be used throughout overhaul and the equipment retrieval process. Utilize thermal imagers to

confirm that the debris pile and structure have cooled.

IMPROVE PRACTICES DURING OVERHAUL TO LIMIT FIREFIGHTER EXPOSURE

Overhaul is the phase of fire ground operations where void spaces are exposed, hidden fires are discovered and all extension of fire is stopped. It involves the search of building contents to assure fire is not within or deep seated in fabrics, cushions or other furniture. Overhaul is a part of all structural fires and most exterior fires such as dumpster, trash and vehicle fires.

SCBA shall be used at all times during overhaul.

The IC should limit firefighter exposure by avoiding unnecessary activities in the fire building and by wearing proper personal protective equipment (PPE) during overhaul. Unless required during the course of investigation, cleaning a fire room down to the floor boards is often an unnecessary undertaking.

Overhaul is underrated as a hazardous activity. Since overhaul can be more physically demanding than the actual extinguishment of the original fire, sufficient personnel shall be maintained on the scene to share the overhaul workload. Overhaul operations should include rest breaks, when necessary, for firefighters to recover in a rehabilitation area. The IC must establish safe work-rest cycles.