



GENERAL ORDER

GENERAL ORDER 150.18

CARCINOGEN EXPOSURE REDUCTION PLAN

BUREAU OF OCCUPATIONAL SAFETY AND HEALTH

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1 APPLICABILITY

2 All Personnel

3 POLICY

4 In an effort to further the Howard County Department of Fire and Rescue Services' (Department) Bureau
5 of Occupational Safety and Health's (BOSH) mission of developing and maintaining an innovative
6 Occupational Safety and Health Program, a Carcinogen Exposure Reduction Plan (CERP) has been
7 developed. This policy lays out the procedures for reducing the exposure times and quantities to
8 carcinogens that are encountered in the firefighting profession.

9 DEFINITIONS

- 10 ➤ **Advanced Cleaning** – Cleaning of Personal Protective Equipment (PPE) performed by trained
11 personnel with the elements out of service and performed periodically as required. Advanced
12 Cleaning is performed in machines with approved detergents, cleaners, and disinfectants, and
13 shall be documented.
- 14
- 15 ➤ **Firefighter Cancer Support Network (FCSN)** – An organization dedicated to assisting firefighters
16 who have been diagnosed with cancer. In August 2013, FCSN published a white paper with 11
17 recommendations to reduce the incidence of cancer within the fire service.
- 18
- 19 ➤ **National Fire Protection Association (NFPA)** – The National Fire Protection Association, a global
20 nonprofit organization, established in 1896, devoted to eliminating death, injury, property and
21 economic loss due to fire, electrical and related hazards.
- 22
- 23 ➤ **Routine Cleaning** – A light cleaning of PPE performed by the end user without taking the elements
24 out of service and performed after each use. Routine Cleaning is performed by hand only, and
25 does not need to be documented.
- 26
- 27
- 28

GENERAL:

- Officers:
 - As the leader of the functional unit in the fire service, the company officer is the most influential person in regards to attitude, habits, and implementation of change. To this extent, the company officer must set clear expectations and lead by example by following and promoting the requirements in this policy.
- All personnel:
 - Personnel shall make efforts to reduce both the amount of time and the quantity of carcinogens to which they are exposed. This will be accomplished by following currently accepted best practices in the following areas:
 - Respiratory Protection
 - Cleaning of PPE
 - Laundering of Uniforms
 - Decontamination of Personnel
 - Storage and Transportation of PPE
 - Use of Diesel Exhaust Capture Systems
 - Tobacco Cessation

USE OF TURNOUT GEAR:

- Turnout gear shall only be worn on incidents in which its protection is needed, or may be needed. These incidents may include, but are not limited to: fires of any kind, vehicle rescues, fire alarms, flammable gas emergencies, etc.

RESPIRATORY PROTECTION:

- Several studies have demonstrated that carcinogenic agents can be present in compartments long after a fire is extinguished. Studies have also demonstrated that the levels of carbon monoxide present after a fire are poorly correlated with these other dangerous agents. (Oregon Study) To that extent, once the decision to use SCBA has been made, its use shall be continued throughout all phases of the incident to include salvage, overhaul, and origin and cause determination.

Incident commanders shall have the authority to modify respiratory protection requirements for exigent circumstances. These instances should be rare and shall require the following:

- The incident commander (or their designee) shall document the names of the members who worked in the post-fire environment without SCBA.
- The incident commander (or their designee) shall document the length of time that each member worked in the post-fire environment without SCBA.
- The incident commander shall submit justification for the exigency exception in writing to the Assistant Chief of BOSH and the Assistant Chief of ESB by the end of the shift.

CLEANING OF PPE:

Barring exigent circumstances such as extreme weather, safety concerns, or depleted County-wide apparatus availability, the following shall be accomplished before leaving the incident scene. In accordance with NFPA 1851, Chapter 7, as soon as practical after exposure to the products of combustion, or other carcinogenic materials, personnel shall:

- 75 • Evaluate the level of contamination and initiate Routine Cleaning while still at the incident scene.
- 76 • Brush off any dry debris.
- 77 • Rinse off any other debris with water. Heavy scrubbing or the use of high velocity or high
- 78 pressure water jets (such as a pressure washer) shall be avoided.
- 79 • When necessary, a soft bristle brush shall be used to gently scrub and the ensemble shall be
- 80 rinsed again.
 - 81 ○ Soft bristled brushes dedicated to the cleaning of PPE shall be carried on all front line
 - 82 suppression equipment to prevent cross contamination with products that could degrade
 - 83 the PPE.
 - 84 ○ Stiff bristled brushes, such as floor brushes or wheel/tire brushes, shall not be used as they
 - 85 could damage the PPE.
- 86 • In the event that the PPE is contaminated to the point where the above procedures are
- 87 insufficient, personnel shall place the items out of service and send them to the supply unit for
- 88 Advanced Cleaning.
- 89 • SCBA and SCBA elements shall be rinsed and brushed in accordance with the manufacturer's
- 90 recommendations.

91
92 **LAUNDERING OF CLOTHING:**

93 As soon as practical after returning to quarters, the officer or his or her designee shall ensure that all
94 clothing uniforms worn during the incident are laundered.

95
96 **DECONTAMINATION OF PERSONNEL:**

97 Multiple studies have confirmed that there is a marked increase in skin permeability and absorption as
98 skin temperature and moisture rise. Data has shown that absorption can increase by 400% for every 5° F
99 increase in skin temperature. (Cancer Support Network) With this in mind, it is essential that personnel
100 decontaminate themselves as soon as practicable after an incident by:

- 101 • Using commercially available wipes that are specifically designed for firefighting to remove as
102 much gross contaminate as possible. Personnel shall clean all exposed skin, paying special
103 attention to the neck, angle of the jaw, face, hands, and under arms.
 - 104 ○ Barring exigent circumstances such as extreme weather, safety concerns, or depleted
 - 105 County-wide apparatus availability, this shall be accomplished before leaving the incident
 - 106 scene.
- 107 • Personnel should shower immediately upon returning to quarters. Out of service time should be
108 provided for this if staffing and apparatus availability allow it.

109
110 **STORAGE OF PPE:**

111 PPE can continue to off gas after exposure to the products of combustion. Every effort shall be made by
112 personnel to not store turnout gear in their homes or their vehicles. All personnel are encouraged to
113 store their gear in a fire station. Under no circumstances shall PPE be worn or stored in the residential
114 areas of fire stations.

115
116 In the event that personnel must transport gear in their personal vehicles, the following precautions shall
117 be taken:

- 118 • All PPE shall be transported in Department issued gear bags or hard sided containers.
- 119 • Whenever possible, gear shall be transported in cargo areas of the vehicle such as the trunk or
120 bed of a pickup truck.

- 121 • Turnout gear shall not be stored in the passenger area of staff or command vehicles. If there is no
122 other option due to the configuration of the vehicle, the gear shall be stored in a Department
123 issued gear bag, or hard sided container.
124

125 **DIESEL EXHAUST MITIGATION:**

126 Many agencies, including the World Health Organization, the Centers for Disease Control and Prevention,
127 and the Environmental Protection Agency, classify diesel exhaust as possibly, potentially, or likely
128 carcinogenic (Cancer.org). To that extent, all personnel shall familiarize themselves with GO 500.04:
129 Diesel Exhaust Mitigation, and utilize the systems described therein.
130

131 **TOBACCO CESSATION:**

132 The Department discourages all personnel, and prohibits some, from using any form of tobacco products.
133 Abstinence from the use of tobacco products accomplishes:

- 134 • A reduction of health hazards associated with tobacco use.
- 135 • Delivery of higher quality service to the public because of improved physical fitness,
136 endurance, and health.
- 137 • Safer performance of assigned duties by personnel due to improved physical condition.
- 138 • A cleaner and more pleasant environment at Department work sites.
- 139 • A reduction in health hazards as personnel will only be exposed to hazardous conditions directly
140 related to fire and rescue work.

141 See General Order 130.03: Use of Tobacco Products.

142
143 Personnel who desire to stop using tobacco products can be assisted through a cessation program by
144 contacting the Howard County Health Department at 410-313-6300.

145 **REFERENCES**

- 146 • General Order 130.03: Use of Tobacco Products
- 147 • General Order 500.04: Diesel Exhaust Mitigation
- 148 • NFPA 1500: *Standard on Fire Department Occupational Safety and Health Program*
- 149 • NFPA 1851: *Standard on Selection, Care, and Maintenance of Protective Ensembles for Structural*
150 *Fire Fighting and Proximity Fire Fighting*
- 151 • NFPA: About Us, available at: <http://www.nfpa.org/about-nfpa>
- 152 • OSHA 29 CFR 1910.134: *Occupational Safety and Health Standard on Respiratory Protection*
- 153 • A Study on Chemicals found in the Overhaul Phase of Structure Fires using Advanced Portable Air
154 Monitoring available for Chemical Speciation, available at:
155 <http://www.oregon.gov/osp/sfm/documents/airmonitoringreport.pdf>
- 156 • Firefighter Cancer Support Network: Skin permeability, available at:
157 <http://www.nature.com/jid/journal/v41/n5/full/jid1963115a.html>
- 158 • Cancer.org, Diesel Exhaust and Cancer, available at:
159 [http://www.cancer.org/cancer/cancercauses/othercarcinogens/pollution/diesel-exhaust-and-](http://www.cancer.org/cancer/cancercauses/othercarcinogens/pollution/diesel-exhaust-and-cancer)
160 [cancer](http://www.cancer.org/cancer/cancercauses/othercarcinogens/pollution/diesel-exhaust-and-cancer)

161 **SUMMARY OF DOCUMENT CHANGES**

162 New General Order
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FORMS/ATTACHMENTS

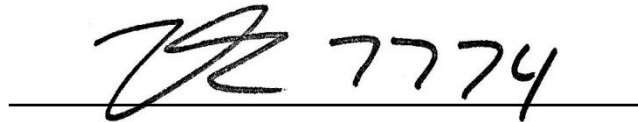
- None

APPROVED



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