

NFPA
Research
Foundation

**Controlling
Exposure to
Fireground
Toxic
Contaminants**

NFPA 1500 (2018)
**Fire Department Occupational
Safety & Health Program**

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Chapter 1

Administration

'Inspectigators'

- Added fire investigators and fire inspectors to the document (1.2.2)

Chapter 3

Definitions

Fireground Contaminants

'Airborne, dermal, ocular, or respiratory hazards consisting of products of combustion, carcinogens, toxic chemicals, and ultrafine particles and other incidental health hazards' (3.3.20.3)

Chapter 4

**Fire
Department
Administration**

Risk Reduction & Data Collection

- Added products of combustion, carcinogens, contaminants to the FD risk management plan and risk reduction strategy and policy (4.2.2 & 4.3.1)
- Products of combustion, carcinogens, and fireground contaminants shall be collected as part of the data collection system (4.6.2)

Chapter 5

**Training,
Education, and
Professional
Development**

Exposures & Training Activities

- All members shall be trained in the risks associated with workplace exposure to products of combustion, carcinogens, fireground contaminants and other incident-related health hazards (5.3.13)
- Members shall be trained to recognize when a workplace exposure has occurred and to know the control methods for personal decontamination, decontamination of PC&E, and the risks of cross-contamination (5.3.13.1*)

Chapter 7

Cleaning and Care

Protective Clothing and Protective Equipment

Structural fire-fighting and proximity fire-fighting protective ensembles and ensemble elements shall be cleaned as specified in NFPA 1851 (7.1.4) *existing text*

Chapter 7

SCBA Use During Overhaul

Protective Clothing and Protective Equipment

When engaged in any operation where members could encounter atmospheres that are IDLH or potentially IDLH, or where the atmosphere is undefined or hazardous (including overhaul), the fire department shall provide and require all members to use SCBA that has been certified as being compliant with NFPA 1981 (7.10.7)

Chapter 7

Post-Fire Respiratory Protection

Protective Clothing and Protective Equipment

Respiratory protection for any entry into the post-fire environment before or after overhaul shall be at least a fitted full-face air-purifying respirator (APR) with protection against fireground toxic contaminants when used in compliance with 14.4.2.1 (7.10.9)

Chapter 8

Protective Clothing & Equipment

Emergency Operations

- Members performing overhaul operations shall wear applicable protective clothing and a supplied-air respirator (8.6.13.1)
- When overhaul is not actively taking place, fire investigators or other members who enter the fire area following extinguishment shall wear protective clothing and a supplied-air respirator or an appropriate air-purifying respirator for respiratory hazards that could be encountered (8.6.13.2)

Chapter 8

Rehabilitation During Emergency Operations (8.9)

Emergency Operations

- Personnel shall undergo rehabilitation in accordance with NFPA 1584 (8.9.1*)
- Personnel shall not be permitted to use more than two SCBA cylinders before they are sent to rehabilitation operations (8.9.1.1*)

Chapter 11

Cancer Screening Requirements: NFPA 1582 (2018)

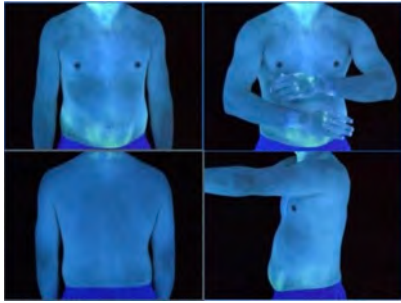
Medical and Physical Requirements

Skin, Colon, Prostate, Lung, Cervical, Oral, Thyroid, Testicular, Bladder

7.7.22* Cancer and Cardiovascular Disease Risk Reduction.
The fire department physician shall annually inform members of the heightened risks of cardiovascular disease and various types of cancer associated with fire fighting & the routes of hazardous exposures related to fire fighting, as well as common signs, symptoms, and preventive measures for both cardiovascular disease and cancers.

Chapter 14 (New)

Exposure to Fireground Toxic Contaminants



Training

- The AHJ shall provide training on the hazards associated with exposure to fireground toxic contaminants (14.1)
- Training on the hazards associated with exposure to fireground toxic contaminants shall include the following:
 - 1) Awareness
 - 2) Prevention
 - 3) Mitigation
 - 4) Risk factors

Prevention and Mitigation

The AHJ shall provide standard operating procedures (SOPs) related to the prevention and mitigation of fire fighter exposure to fireground toxic contaminants (14.2)



Cleaning and Maintenance

- The AHJ shall provide for the cleaning and maintenance of protective clothing and equipment (14.3.1)
- The AHJ shall ensure that soiled or contaminated protective clothing and equipment is removed from service until cleaned and disinfected in accordance with NFPA 1851 (14.3.2)



Mitigation of Fireground Toxic Contaminant Exposure

- Appropriate PC&E shall be worn during all phases of fireground operations (14.4.1)
- Respiratory protection during overhaul shall consist of a supplied air respirator (14.4.2)

APR Use in the Post-Fire Environment



1. >30 minutes post-extinguishment
2. No active overhaul
3. PPV in place
4. Continuous air monitoring
 - a. HCN <4.7ppm
 - b. CO <35ppm

APR Use in the Post-Fire Environment

- The chemical cartridge shall be NIOSH approved to provide protection against atmospheres containing particulates, acid gases, organic vapors, and formaldehyde (14.4.2.1.2)
- A filter change out schedule shall be established for the environmental hazards present at each incident (14.4.2.1.3)

Post-Incident Fireground Toxic Contaminant Exposure

- The AHJ shall train its members on the appropriate doffing and containment of contaminated protective clothing and equipment (14.5.1)
- Training on doffing and containment of contaminated protective clothing and equipment shall include prevention of possible cross-contamination (14.5.1.1)

Post-Incident Fireground Toxic Contaminant Exposure

- The AHJ shall provide standard operation procedures related to the decontamination of fire fighters exposed to fireground toxic contaminants (14.5.2)
- The AHJ shall provide appropriate decontamination facilities and equipment for fire fighters exposed to fireground toxic contaminants (14.5.3)

Post-Incident Fireground Toxic Contaminant Exposure (14.5.3.1)

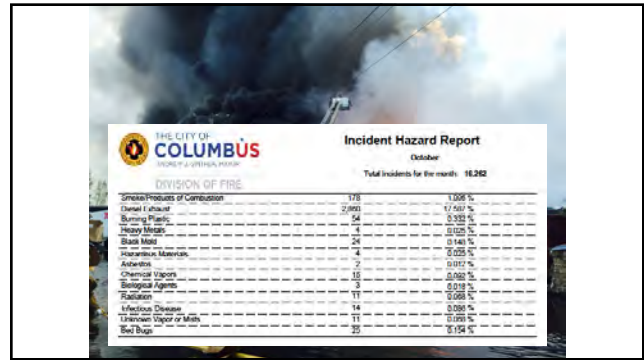
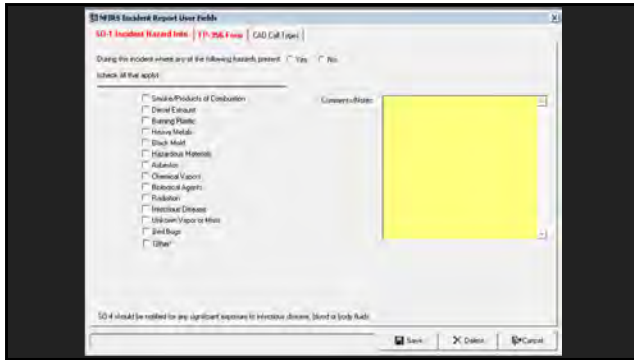
- Fire fighter personal hygiene following exposure to fireground toxic contaminants shall include the following:
- Wiping skin areas near the interfaces of protective clothing and equipment with a wet wipe immediately after doffing
- Taking a hot shower within an hour of an incident where an exposure could have occurred

Exposure Reporting Requirements

- The AHJ shall establish an exposure reporting system for its members to use to record possible exposure to fireground toxic contaminants, airborne hazards, dusts, or chemicals (14.6.1)
- The exposure report records shall be maintained by the AHJ for at least 15 years following the member's separation from the AHJ or until the death of the member, whichever occurs first (14.6.1.1)
- The member shall have access to their personal exposure records (14.6.1.2)

Exposure Reporting Requirements

- All personnel potentially exposed to fireground toxic contaminants, airborne hazards, dusts, or chemicals shall complete an exposure report (14.6.2)



Standards Alignment & Revision Cycle Adjustments

FIRE SERVICE OCCUPATIONAL SAFETY & HEALTH TECHNICAL COMMITTEE

Safety Standards

- NFPA 1500 (Occupational Safety & Health Program)**
 - Finish its current revision cycle, A-17 (5/12/17), and move to F-2019 (5yr to 2 ½ yr)
- NFPA 1561 (Incident Management & Command Safety)**
 - Move from F-18 to F-19 (5yr to 6yr)
- NFPA 1521 (Fire Dept Safety Officer)**
 - No change as it is on a F-19 revision cycle, but has a correlating committee

Health & Wellness Standards

- NFPA 1582 (Comprehensive Occupational Medical Pgm)**
 - Finish A-17 and change to F-2020 revision cycle (5yr to 3 ½ yr)
- NFPA 1581 (Infection Control Program)**
 - From F-19 to F-2020 (5yr to 6yr)
- NFPA 1583 (Health Related Fitness Program)**
 - From F-19 to F-2020 (5yr to 6yr)
- NFPA 1584 (Rehab: Emergency Ops and Training)**
 - From F-19 to F-2020 (5yr to 6yr)

NFPA 1584 F2020

Major Revision Planned

- Contamination control
- Post-fire hygiene
- Cross contamination
- On-scene decon
- Station level decon

What Next?

Next
Edition
F2019

- Contamination control
 - Fire Stations
 - Apparatus
 - NFPA 1584 (2020)
 - A New Document???
- What else?