

## **Operating Guideline # 237**

### **Limiting Exposure to Gases and Products of Fire At Station**

**January 3, 2024**



#### **PURPOSE:**

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

#### **ISSUE/RATIONALE:**

Today's fires expose workers (firefighters) to contamination, including those that cause cancers and occupational illnesses. Fire Services must take steps to minimize or prevent exposures, to keep workers and workplaces healthy and safe.

#### **GUIDELINE:**

1. Laundry area is separated from the gear storage area and separated from the gear air dryer areas.
2. Firefighter PPC and PPE clothing including pants, coats, coveralls, balaclavas, hoods and gloves are cleaned in an extractor specific for firefighting PPC.
3. The instructions for the extractor are posted and only trained personnel use the extractor.
4. The extractor has a maintenance program in place that includes periodic inspections by the manufacturer representative to ensure that the extractor is performing as expected.
5. Correct pH soap is available for the extractor and this is the only soap used.
6. Extractor is decontaminated after each use.
7. Gear air dryers are only operated by personnel that have received proper training to understand the functions of the drying units and correct placement of garments to achieve the best drying results.
8. Clothing that is worn under bunker gear should be washed separately from other garments to prevent cross contamination.
9. Personnel should bring spare clean clothing to the fire stations to wear after showering.
10. Truck bays/ apparatus floor areas should have adequate ventilation of the general mechanical 20,000 cfm per operating apparatus or 100 cfm per horsepower for diesel fuelled apparatus.
11. Clean bunker gear should be stored in a separate area when natural ventilation is the only ventilation used.
12. Apparatus should be washed inside and out following each fire call.
13. Apparatus cabin air filter should be inspected following each fire call and replaced as needed.
14. A regular apparatus interior cleaning schedule should be established and followed.
15. Shower facilities with soap and water should be available at each fire station, where no facilities exist or are out of service, members shall wash exposed skin areas with supplied soaps (neck, face, wrists and hands).
16. Shower or washing is encouraged as soon as possible upon return to the fire station.
17. Dirty areas versus clean areas are identified by signage.
18. No bunker gear beyond this point signage is installed to prevent fire staff from cross contaminating other areas of the fire station such as training rooms, food prep areas, or office areas.

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19. Dirty areas have surfaces that can be easily cleaned and have access to shop vacuums and mops.
20. All dirty gear shall be handled by personnel wearing: N95 respirators, safety glasses, nitrile exam gloves, and gowns or coveralls.
21. All contaminated laundry areas, shower facilities, crew compartments, hose cleaning areas, soft gear PPC handling areas require the PPE listed in 20.
22. All firefighters must inspect their PPC and PPE following each use and when the items are returned from advanced cleaning annually as per the checklists in appendix I.

#### **RESPONSIBILITY:**

It is the responsibility of all members to comply with the provisions of this OG and particularly that Company Officers (supervisors), and firefighters ensure that they adhere to their duties in accordance with the Occupational Health and Safety Act.

#### **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
  - Section 21 Firefighter’s Cancer Prevention Checklist 2020
  - MSA inspection safety PPE checklists
  - Scott Safety AV 3000 Standard inspection checklist

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#### Scott Safety Facepiece Inspection

##### Look at the lens

- |                                    |   |   |
|------------------------------------|---|---|
| - Do you see any cracks?           | Y | N |
| - Do you see any gouges?           | Y | N |
| - Do you see any scratches?        | Y | N |
| - Do you see any other conditions? | Y | N |
| - Will your vision be obscured?    | Y | N |
| - Do you see any discolouration?   | Y | N |

##### Inspect the bezel or lens frame

- |                                       |   |   |
|---------------------------------------|---|---|
| - Do you see any cracks in the bezel? | Y | N |
| - Are you missing any screws?         | Y | N |

##### Look at the voice emitters or speaking diaphragms

- |  |   |   |
|--|---|---|
| - Are they both present?                                     | Y | N |
| - Do they show any signs of damage, dents, or deterioration? | Y | N |

##### Inspect the nose cup

- |  |   |   |
|--|---|---|
| - Do you have any damage or cuts to nosecup? | Y | N |
| - Is the nose cup unseated?                  | Y | N |
| - Is the nose cup fitted behind the facesal? | Y | N |

##### Head harness

- |   |   |   |
|---|---|---|
| - Are all the head harness straps present and operating correctly | Y | N |
| - Do you have any worn or damaged components                      | Y | N |

Full details of the inspection can be found at the you tube link below:

<https://www.youtube.com/watch?v=2HNFvoIKWBY>

If you find any problems with your face piece, remove the face piece from service and tag for authorized personnel to repair. Contact the Deputy Fire Chief via email, text or voice.

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#### Fire Helmet Inspection

Look for evidence of physical damage		
- Do you see any cracks?	Y	N
- Do you see any crazing?	Y	N
- Do you see any dents?	Y	N
- Do you see any abrasions?	Y	N
Check for thermal damage to the shell		
- Do you see any bubbling?	Y	N
- Do you feel any soft spots?	Y	N
- Can you detect any warping?	Y	N
- Do you see any discolouration?	Y	N
Inspect Ear Flaps		
- Do you see any rips, tears, or cuts?	Y	N
- Do you see any charring, melting or any other thermal damage?	Y	N
Check the suspension & retention systems		
- Is there any damage?	Y	N
Inspect the faceshield		
- Do you see any discolouration?	Y	N
- Do you see any crazing?	Y	N
- Do you see any scratches that would impair vision?	Y	N
Reflective Trim		
- Is there any missing reflective trim?	Y	N
- Is there any damage to reflective trim?	Y	N
Look for a loss of seam integrity		
- Do you have any missing or broken stitches?	Y	N

Full details of the inspection can be found at the you tube link below:

<https://www.youtube.com/watch?v=OpnLwanec-U>

If you find any problems with your helmet, remove the helmet from service and tag for authorized personnel to repair. Contact the Deputy Fire Chief via email, text or voice.

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#### Firefighting Boot Inspection

Look for signs of physical damage

- |                             |   |   |
|-----------------------------|---|---|
| - Do you see any cuts?      | Y | N |
| - Do you see any tears?     | Y | N |
| - Do you see any punctures? | Y | N |

Examine for thermal damage

- |   |   |   |
|---|---|---|
| - Do you see any charring?                    | Y | N |
| - Do you see any burn holes?                  | Y | N |
| - Do you see or feel any signs of melting?    | Y | N |
| - Do you see any discolouration of any layer? | Y | N |

Examine for exposing or deforming

- |  |   |   |
|--|---|---|
| - Do you have any deforming of the protective toe?     | Y | N |
| - Do you see any deforming of the protective mid sole? | Y | N |
| - Do you see any deforming of the shank?               | Y | N |

Dunk the boot in a tub of water

- |   |   |   |
|---|---|---|
| - Do you have a loss of water resistance? | Y | N |
|---|---|---|

Closure systems

- |  |   |   |
|--|---|---|
| - Do you have any damage to closure systems? | Y | N |
|--|---|---|

Loss of seam integrity

- |   |   |   |
|---|---|---|
| - Do you have any separating areas or layers? | Y | N |
| - Do you have any broken or missing stitches? | Y | N |

Full details of the inspection can be found at the you tube link below:

<https://www.youtube.com/watch?v= I2jZak2zOs>

If you find any problems with your boots, remove the boots from service and tag for authorized personnel to repair. Contact the Deputy Fire Chief via email, text or voice.

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#### Firefighting Glove Inspection

Look for signs of physical damage

- |                         |   |   |
|-------------------------|---|---|
| - Do you see any cuts?  | Y | N |
| - Do you see any tears? | Y | N |
| - Do you see any rips?  | Y | N |

Examine for thermal damage

- |   |   |   |
|---|---|---|
| - Do you see any charring?                    | Y | N |
| - Do you see any burn holes?                  | Y | N |
| - Do you see or feel any signs of melting?    | Y | N |
| - Do you see any discolouration of any layer? | Y | N |
| - Do you have an inverted glove lining?       | Y | N |

Examine for deformities

- |  |   |   |
|--|---|---|
| - Do you have any shrinkage?                         | Y | N |
| - Do you have any loss of elasticity or flexibility? | Y | N |
| - Do you have any loss of seam integrity?            | Y | N |

Dunk the glove in a tub of less than 105 degree F water wearing it for 2 minutes, open and close hands for another 2 minutes

- |   |   |   |
|---|---|---|
| - Do you have a loss of water resistance? | Y | N |
|---|---|---|

Hang them up, ensure they are dry before returning to service.

Full details of the inspection can be found at the you tube link below:

<https://www.youtube.com/watch?v=OZsdgJFWI5E>

If you find any problems with your gloves, remove the gloves from service and tag for authorized personnel to repair. Contact the Deputy Fire Chief via email, text or voice.

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#### Firefighting Hood Inspection

Look for signs of physical damage

- |                         |   |   |
|-------------------------|---|---|
| - Do you see any cuts?  | Y | N |
| - Do you see any tears? | Y | N |
| - Do you see any rips?  | Y | N |

Examine for thermal damage

- |   |   |   |
|---|---|---|
| - Do you see any charring?                    | Y | N |
| - Do you see any burn holes?                  | Y | N |
| - Do you see or feel any signs of melting?    | Y | N |
| - Do you see any discolouration of any layer? | Y | N |

Check for loss of face opening adjustment

- |   |   |   |
|---|---|---|
| - Do you have any shrinkage?                          | Y | N |
| - Do you have any loss of elasticity or flexibility?  | Y | N |
| - Do you have any loss of seam integrity?             | Y | N |
| - Do you see any broken stitches or missing stitches? | Y | N |

Look at both layers, turn inside out.

- |   |   |   |
|---|---|---|
| - Do you have any damage to the particulate blocking layer? | Y | N |
|---|---|---|

Full details of the inspection can be found at the you tube link below:

<https://www.youtube.com/watch?v=0d0qW0IKi5s>

If you find any problems with your hood, remove the hood from service and tag for authorized personnel to repair. Contact the Deputy Fire Chief via email, text or voice.

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#### Bunker Gear Routine Inspection

Has your gear lost its fit when performing routine manoeuvres? (Routine manoeuvres are reaching, climbing ladders and walking)	Y	N
Do you notice any excessive soiling?	Y	N
Do you see any evidence of contamination? (blood, dirt)	Y	N
Do you see any tears?	Y	N
Do you see any rips?	Y	N
Do you see any cuts?	Y	N
Do you see any charring?	Y	N
Do you see any burn holes?	Y	N
Do you see or feel any signs of melting?	Y	N
Do you see any discolouration of any layer?	Y	N
Do you see any damaged or missing reflective trim?	Y	N
Do you have any damaged or missing hardware or fasteners?	Y	N
Do you have any shrinkage?	Y	N
Do you have any loss of elasticity or flexibility?	Y	N
Do you have any loss of seam integrity?	Y	N
Do you see any broken stitches or missing stitches?	Y	N
Do you have the correct assembly of the DRD?	Y	N
Does your outer shell, liner and full assembly fit together?	Y	N
Does your DRD strap show any signs of damage?	Y	N
Is there any damage to wristlets, collars, pant wells that prevent interface protection?	Y	N

Remember, whenever you have a question about the condition of the protective garment, you should temporarily remove the garment from service.

Full details of the inspection can be found at the link below page 33:

<https://femsa.org/wp-content/uploads/2022/02/NFPA-1971-Protective-Garments-For-Structural-and-Proximity-Firefighting.pdf>

If you find any problems with your gear, remove the gear from service and tag for authorized personnel to repair. Contact the Deputy Fire Chief via email, text or voice.