

Operating Guideline # 203
Breathing Apparatus
Created January 21, 2020
Reviewed September 13, 2022



PURPOSE:

The purpose of this Operating Guideline (OG) is to establish respiratory protection practices to protect firefighters during training and while performing their duties at emergency incidents.

ISSUE/RATIONALE:

It is the policy of the Muskoka Lakes Fire Department (MLFD) to establish and maintain a “Respiratory Protection Program” (RPP) that meets the intent of the Occupational Health and Safety Act (OHSA) and to safeguard all staff from the effects of respiratory contaminants that may be encountered during work or training activities.

GUIDELINE:

General

1. It is the expectation that all firefighters personnel expected or likely to respond to and function in areas of atmospheric contamination, shall have available and be trained to this guideline including the proper use and maintenance of self-contained breathing apparatus (SCBA) from the manufacturer.

2. The nature of work conducted by firefighters is such that personnel are routinely exposed to environments where respiratory protection is required. Staff wear issued protection in the form of SCBA or other respiratory protection as approved whenever working:
 - a. in an unknown atmosphere, suspected of being hazardous;
 - b. in an atmosphere known to be hazardous (i.e. – interior firefighting operations, overhaul, during fire investigations where the air quality cannot be constantly monitored and confirmed as non-hazardous) and remain on air for no less than 2 minutes after exiting the hot zone;
 - c. in an atmosphere that may rapidly become hazardous; (gas leaks)
 - d. when working below ground level or in a confined space (unless the safety of the atmosphere can be established by testing and continuous monitoring); and
 - e. when staff may be exposed to biological hazards.

3. In addition to the provisions of sentence 2, members of the MLFD shall wear suitable respiratory protection in the form of particulate/filter masks (i.e. - N95 disposable masks or similar) and other appropriate protective clothing (i.e. – disposable gloves, eye protection, etc.) whenever they attend medical calls where there is potential to be exposed to patients who are known or suspected of being febrile (having a fever) or suffering from a potentially infectious illness.

4. Every member of the MLFD assigned to the Suppression or Fire Prevention Divisions shall be clean-shaven so that no hair will come between the sealing surface of the face piece and the face. Beards and goatees shall not be worn, and moustaches or sideburns that touch that part of the SCBA face piece that forms the seal between the face and the outside atmosphere are not permitted. This follows the direction in Ontario Regulation 833

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12.(3) "A respirator that is designed to be tight-fitting shall not be used by a worker with facial hair that comes between the sealing surface of the facepiece and the face or that interferes with the functioning of the respirator."

Respiratory Protection Program Administrator

5. The Fire Chief has appointed the Deputy Fire Chief as the "Program Administrator" who shall be responsible for the oversight of all aspects the Respiratory Protection Program including an annual evaluation of the entire program. Contact information for the Program Administrator shall be clearly posted at each compressor fill site and location where maintenance and/or repairs are conducted on SCBA.

6. The Deputy Fire Chief in concert with the Chief Training Officer shall ensure that proper records are maintained respecting the selection, use, care and maintenance of all physical assets associated with the respiratory protection program including (but not limited to) SCBA, cylinders, compressors, and face pieces as well as staff training. In addition, the Deputy Fire Chief shall ensure that every member of the fire department assigned to the Suppression or Fire Prevention Divisions are subject to "fit testing" during recruit training and at least every two (2) years thereafter and/or when work conditions necessitate a change in the type of respiratory protection worn.

Training, Inspection, Care and Maintenance

7. The Chief Training Officer will ensure that every member of the Department who may find him or herself in a position to use respiratory protection receives adequate training in the use and care of the equipment and shall maintain proper records respecting all training. The Chief Training Officer shall also ensure that any member assigned to the selection, use, cleaning or maintenance of any physical asset component associated with the respiratory protection program receives proper training in the duties related to such selection, use, cleaning or maintenance and those proper records are maintained respecting the training undertaken.

8. All staff shall care for, clean and maintain such physical assets of the respiratory protection program to the extent that they have been trained and in accordance with the guidelines of this department and the manufacturers recommendations.

9. In-service SCBA should be secured on fire apparatus using the SCBA vehicle restraint system and stored in a ready position with all straps in place and fully extended.

10. All firefighters are to conduct a "Complete" inspection of the SCBA on vehicles to which they are assigned on a monthly basis. There shall be a checklist developed to assist with this inspection and record keeping.

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11. All firefighters will conduct a “Visual” inspection of the SCBA prior to use to ensure the SCBA is free of any obvious defects. There shall be a checklist developed to assist with this inspection and kept with the SCBA.
12. Every SCBA, compressor, and cylinder used in connection with the respiratory protection program will be tested or inspected in accordance with accepted industry standards and manufacturers recommendations, at least annually.
13. All SCBA and cylinders purchased for use within the fire department shall be purchased “new” from an authorized sales agent representing the SCBA manufacturer. This is to ensure that the NIOSH certification is met and maintains the expected protection.

Operational Use of SCBA

14. SCBA shall be donned prior to entering any contaminated atmosphere or as described in sentence 2 and shall only be removed when it the atmosphere has been determined to be safe to operate in without it. SCBA shall not be removed prematurely during fire situations as CARBON MONOXIDE levels increase during overhaul due to incomplete combustion of smouldering materials. In addition, many hazardous gasses such as HYDROGEN CYANIDE are not detectable through the senses and a clear atmosphere does not necessarily indicate a safe environment.
15. Personnel entering a contaminated or potentially contaminated atmosphere while using SCBA shall only do so with a partner. When the low air alarm sounds, both personnel shall exit the contaminated area together. **NO PERSONNEL SHALL OPERATE ALONE** at any time while utilizing SCBA.
16. All firefighters shall use the supplied SCBA face piece for which they have passed their yearly fit test.
17. All firefighters utilizing SCBA shall comply with the entry control guideline.
18. Cold weather operations can impact SCBA usage due to freezing of water/moisture even when ambient temperatures are above zero (0) degrees C. To prevent these issues:
 - a. Stow the regulator in the standby belt mount when not in use
 - b. Ensure the face piece remains upside down to prevent water from collecting in the mask
 - c. Protect the regulator from water spray and moisture - ensure the release tabs and by-pass valve are free from ice before using and periodically check the by-pass to be sure it is ice-free.
 - d. Use caution when changing cylinders as moisture can enter through the cylinder valve or coupling nut – wipe these components dry before changing or refilling cylinders.

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e. Thoroughly dry the face piece and mask-mounted regulator after cleaning and disinfecting.

19. Following every incident or training evolution where SCBA is donned and the firefighter is "on air"; the SCBA shall be given a "Complete" inspection when returned to service. Incident responses should be documented on the incident/training report with reference to the identification number of the cylinder, scba and mask. Air Cylinders shall be maintained in a "FULL" condition, and shall be recharged/refilled after every use.

20. If following any inspection where a SCBA unit is deemed to be in need of maintenance, the firefighter assigned will make every reasonable effort to maintain the unit and put it back in service (i.e. - replace batteries if necessary). If after any inspection SCBA are found to be in need of service the SCBA will be tagged and the Deputy Fire Chief will be notified. The tag should identify the name and station of the person reporting the problem; it should be dated, note the District Chief or designate, and have a brief description of the problem/issue.

Decontamination

21. During the course of wearing SCBA, should firefighters come in contact with materials that may cause contamination of themselves or others following the incident, basic/gross decontamination measures shall be taken. These measures include isolating the firefighters who came in contact with the materials and thoroughly rinsing the firefighters with a water spray prior to the SCBA being doffed and the turnout gear removed. Materials such as asbestos contain very minute particles that may be transferred to others unless they are cleaned from the firefighter and the SCBA prior to the SCBA being removed. This wash down should take place after each overhaul phase of suppression operations.

22. All firefighters are responsible to decontaminate and clean their issued face piece in accordance with the manufacturers' recommendations and departmental practices that are in place from time to time.

23. If upon inspection, SCBA requires cleaning, use a soap solution and warm water. Rinse with clean water. Do not submerge the regulator. Wipe off all surface dirt with a dampened sponge. Wipe harness dry with a clean cloth and air dry. Thoroughly dry the regulator after cleaning and then air dry. Note: Protective clothing or other safety devices that has been worn next to the skin shall be cleaned and disinfected prior to being worn by another worker (ref. R.R.O. 1990, Reg. 851, s. 137).

RESPONSIBILITY:

It is the responsibility of all staff to comply with the provisions of this Operating Guideline.

DEFINITIONS:

"CSA" means the Canadian Standards Association.

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“Fit Testing” means the use of a quantitative or qualitative method to evaluate the fit of a particular model, make and size of a respirator on an individual.

“NFPA” means the National Fire Protection Association.

“Particulate/Filter Mask” means a disposable mask that has a “N95” Rating. (“NIOSH N95” is a government efficiency rating that means the mask blocks about 95 percent of particles that are 0.3 microns in size or larger.

“Occupational Health and Safety Act” means the Ontario Occupational Health and Safety Act, RSO 1990, and its' associated Regulations

“Program Administrator” means an individual appointed by the Fire Chief to administer the quality assurance issues surrounding the inspection, testing and maintenance of all self-contained breathing apparatus used by Muskoka Lakes Fire Department personnel.

“Section 21 Committee” means the Ontario Fire Service Section 21 Committee established under the Occupational Health and Safety Act.

“SCBA” means Self Contained Breathing Apparatus.

REFERENCES:

- Occupational Health & Safety Act, RSO 1990 and Ontario Regulation 833
- Section 21 Guidance Note 1-9, SCBA Compressed Air Cylinder Handling
- Section 21 Guidance Note 4-4, Personal Alert Safety Systems (PASS)
- Section 21 Guidance Note 4-9, Respiratory Protection Program
- Section 21 Guidance Note 4-13, Personal Protection During Fire Investigation Operations
- Section 21 Guidance Note 6-36 Limiting Exposure to Fire Gases
- CSA Standard Z94.4-02 (R2008) - Selection, Use and Care of Respirators
- CSA Standard Z180.1-00 (R2005) – Compressed Breathing Air and Systems
- NFPA 921 – Guide for Fire and Explosion Investigations
- NFPA 1033 – Standard for Professional Qualifications for Fire Investigators
- NFPA 1500 – Standard on Fire Department Occupational Health and Safety Program
- NFPA 1981– Standard on Open-Circuit SCBA for the Fire Service
- IFSTA – Essentials of Fire Fighting 4th Edition; 1998
- IFSTA – Introduction to Fire Origin and Cause and Fire Investigator
- SCOTT NXG7 Users Manual