DDFS Respiratory Protection Program

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1. Roles and Responsibilities

1.1 Program Administrator:

The Program Administrator will be the Deputy Fire Chief, duties may be designated and shall:

a) Be responsible for all aspects of the respiratory protection program, including the requirements of CAN/CSA-Z945.4-02, CAN/CSA-Z180.1-00, and NFPA 1500, NFPA 1981 as applicable.
b) Ensure that appropriate personnel have been assigned the defined roles of this standard.
c) Ensure that assessments for respiratory hazards are conducted by qualified persons.
d) Ensure that a list of accepted respirators selected for use in the workplace are maintained for each respiratory hazard.
e) Ensure that all persons required to wear respirators receive instructions, training prior to initial use of a respirator and refresher training.
f) Monitor use of respirators on a regular basis.
g) Ensure that the respiratory protection program is reviewed annually to assess the effectiveness of all its elements.
h) Ensure that a monitoring system and associated performance measure are in place to track the effectiveness of the procedures and training adopted under the respiratory protection program.
i) Ensure that written instructions and records required by this standard are maintained.
j) Develop and maintain a system to manage and review the respirator protection program.
k) Ensure that the appropriate regulatory authority and/or standards organizations are consulted on interpretations relevant to criteria affecting the use of respirators in the workplace.
l) Ensure the development of procedures in anticipation of emergency and rescue operations.
m) Periodically update the respiratory protection program to maintain consistency with regulatory criteria, consensus standards, feedback from program evaluations, investigation reports, users' comments and product alerts that may have an impact on the respirators used in the workplace.

n) Ensure that procedures are established for health screening to determine if a worker meets the medical requirements to use a respirator (physical or physiological).

1.2 **Respiratory User**:

The respiratory user shall:

a) In the case of a SCBA mask or N95 respirator Maintain a clean-shaven condition and refrain from having any object or material that would interfere with the seal or operation of the respirator. In accordance with of CAN/CSA-Z945.4-02, CAN/CSA-Z180.1-00, and NFPA 1500, NFPA 1981 as applicable.
b) Check that the respirator is clean and in good condition prior to each use.
c) Perform a user seal check after each donning of a respirator.
d) Remove from service a respirator that they determine to be defective and report it to their immediate supervisor or other responsible person.
e) Report to their supervisor or other responsible person any condition or change that may impact on their ability to use a respirator safely.
f) Use the respirator in accordance with the instructions and training received.
g) For examples of what is acceptable or unacceptable see appendix A

1.3 **Supervisors**:

The supervisor shall:

a) Ensue that health screening, fit testing and training are completed prior to assigning a user any task that requires the use of a respirator.
b) Ensure SCBA mask are cleaned, sanitized, inspected, maintained, repaired, and stored in accordance with written instructions and manufacture's recommendations.
c) Ensure the respirator is used in accordance with the instructions, the training received, and the safe operating procedures established for the fire ground.
d) In the case of SCBA masks or N95 respirators, ensure the users maintain a clean-shaven condition and do not have any object or material that would interfere with the seal or operation of the respirator as per CAN/CSA-Z945.4-02, CAN/CSA-Z180.1-00, and NFPA 1500, NFPA 1981 as applicable.

e) It is the duty of the supervisor or other responsible person to identify and stop the use of any SCBA mask or N95 respirator. If user has any condition that may impact on the user(s) ability to use the SCBA mask or N95 respirator safely.
f) Notify the Program Administrator of SCBA masks or N95 respirator users concerns, changes in processes, equipment or operating procedures that have an impact on environmental conditions and respiratory protection requirements.
g) Notify the Program Administrator of investigation reports that revealed that the use of a respirator may have prevented or contributed to an incident or injury.

1.4 Selection of Respirators:

The person selecting respirators shall:

a) Review the assessments of respiratory hazards and select the accepted PPE the user has been fit tested and passed on suitable for protection against those hazards.
b) Notify the Program Administrator of changes in regulatory criteria, consensus standards and technological developments that may impact on the selection of respirators.

1.5 Fit Tester:

The fit tester shall:

a) Be qualified through training and experience to conduct fit tests for those respirators selected for use on the fire ground and medical calls using the fit test protocols identified in the respiratory protection program.
b) Create and maintain fit test records.
c) Create and maintain records of the fit test equipment maintenance, calibration, and repair.

1.6 Issuing of Respirators:

The person issuing respirators shall:

a) Issue respirators for which the user has been qualified.

1.7 Issuing of Respirators:

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The person responsible for the maintenance of respirators shall:

a) Be qualified through training and experience to inspect, maintain, and repair respirators in accordance with the manufacture's instructions.
b) Inspect, maintain, and repair respirators as required.
c) Ensure that maintenance tools are kept in good repair.
d) Create and maintain appropriate records of maintenance and repair.

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2. Hazard Assessment:

Determination of the Existence of an IDLH Atmosphere:

a) An IDLH atmosphere is one that poses an immediate threat to life and would cause irreversible adverse health effects or would impair an individual's ability to escape.

2.1 An IDLH atmosphere shall be assumed in any of the following situations:

a) Structural firefighting
b) An untested confined space
c) An area where a known contaminant is present at or above IDLH concentrations
d) An area where a known hazardous contaminant is present at an unknown concentration
e) An area where a reduced oxygen concentration may produce a level of hypoxia that is IDLH
f) An area where in the opinion of a qualified person the condition presents a potential IDLH atmosphere

2.2 A respirator shall be worn when any of the following conditions exists:

a) When an unknown atmosphere is suspected of being hazardous
b) When the atmosphere is known to be hazardous
c) When the atmosphere may rapidly become hazardous
d) When firefighters are working below level or inside a confined space (Unless the safety of the atmosphere can be established by testing and continuous monitoring)

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3. Respirator Selection: Self Contained Breathing Apparatus and N-95 Masks:

3.1 Use Considerations:

a) Personnel conducting respirator selection should consider extraordinary circumstances in the operations that could adversely affect the function of a respirator (extreme cold or radiant heat).

3.2 Type of Respirator:

Accepted respirators for Douro-Dummer Fire Services shall be:

a) Self-Contained Breathing Apparatus – Positive Pressure
b) MSA SCBA air packs with low pressure 30-minute cylinders
c) N-95 mask as recommended by the MOH (used for medical calls when necessary)

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4. Respiratory Fit Testing:

4.1 Overview:

Douro-Dummer Fire Services will use quantitative fit testing for SCBA and N-95 masks to determine the ability of a user to obtain a satisfactory fit and an effective seal when using a tight-fitting facepiece.

A user seal check shall not be used as a substitute for a qualitative or quantitative fit test.

Description of process is described in attached reference document PAP 1.02H

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5. Training:

5.1 Overview:

The employer shall ensure that the persons filling the roles defined in this standard are qualified to perform their duties. Each person fulfilling a defied role should understand how his/her role relates to the other defined roles.

5.2 Selection Process:

The selection process includes a detailed review of (for example) the fire ground conditions, hazardous materials and exposures and relevant standards in order to specify a range of appropriate respirator options. This activity requires the maintenance of accurate records.

5.3 Medical Assessment:

This activity requires an understanding of the medical assessment process, medical conditions that may require assessment and individual accountabilities. This medical assessment involves a review and written opinion by a health care professional of the suitability of the worker to safely use a respirator. This activity requires the maintenance of accurate records.

5.4 Fit Testing:

This activity requires practical experience in the qualitative or quantitative fit testing use to ensure that the user can achieve an acceptable seal with a specific tight-fitting respirator. This activity requires the maintenance of accurate records.

5.5 General Knowledge:

General knowledge includes an understanding of the respiratory protection program including:

a) DDFS policies and procedures for the program
b) the respiratory hazards encountered on the fire ground
c) potential health effects on the worker and means to control them
d) the rational for the respirator selected
e) where to find information
f) procedures to follow in the case of an emergency

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5.6 Care and Practical Use:

Care and practical use refers to hands on training relating to the choice of the appropriate respirator for a given hazard including:

a) user seal check
b) care, cleaning, and inspection
c) end of service recognition, replacement of air cylinders, identification of problems
d) use under failure or emergency modes
e) storage
f) removal from service
g) basic maintenance
h) familiarity with and adherence to the manufacturer's instructions

5.7 Limitations:

Restrictions, cautions, warnings, and prohibitions imposed by the manufacturers testing and certification agencies, regulatory authorities and the employer on the use, care, and maintenance of the respirator.

5.8 Repair and Maintenance:

Consists of those activities related to restoring a respirator to the manufacturer's original operating condition, including:

a) operation of each respirator
b) care, cleaning, and inspection
c) end of service recognition
d) replacement of cylinders
e) identification of problems
f) storage
g) removal from service
h) familiarity with and adherence to the manufacture's instructions

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5.9 Training Records:

Records of training shall be kept of each person who has received training and the dates when it occurred. The Program Administrator shall ensure that training records are kept for at least the duration of employment of the person trained.

5.10 Refresher Training:

The employer shall provide refresher training at least every 2 years. In alternate years between refresher training sessions, a review shall be performed to confirm that every respirator user remains qualified. Where the review reveals that a user requires training, this shall be provided. The review may be replaced by refresher training.

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6. Use of Respirators:

Prior to assigning a user any task that requires the use of a respirator, the user shall complete all the health screening, fit testing, and training requirements in this standard.

a) Persons using positive pressure (SCBA masks) or N95 respirators shall be clean shaven where the facepiece seals to the skin as per CAN/CSA-Z945.4-02, CAN/CSA-Z180.1-00, and NFPA 1500, NFPA 1981 as applicable.
b) Respirators requiring a tight fit to perform effectively shall not be worn when an effective seal to the face of the person cannot be achieved and maintained.
c) Side arms on eyeglasses or any other materials such as hair, cloth, tissue, straps, and jewellery shall not pass between the face and the sealing surface of the facepiece.
d) The user of a respirator shall check the seal of the facepiece immediately after donning the respirator and periodically during use according to manufacturer recommendations.
e) The user of contact lenses may be permitted by the program administrator after consideration of those factors inside and outside the respirator facepiece that could affect the eyes of the user.
f) Other personnel protective devices or equipment shall not interfere with the seal of the facepiece.
g) The respirator face to facepiece seal should not be broken to communicate.
h) Respirators with electronic speech transmission devices having an electric power supply shall be intrinsically safe and accepted for the specific hazardous atmosphere in which they are used.
i) Respirators used in high and low air temperature environments may undergo adverse functional changes that affect apparatus performance and in turn the health and safety user. Strict adherence to good maintenance and repair procedures shall be maintained. All users shall be fully trained in the use and limitations of respirators at these extreme temperatures.
j) Respirators users shall not remove their facepieces in an IDLH atmosphere.
k) Persons who cannot achieve and maintain an effective closure of the nose or a seal around a respirator mouthpiece shall not be permitted to use a mouthpiece and nose clamp type of respirator.

l) SCBA shall not be modified to accommodate a resuscitator, nor shall it be used as such.

m) Used respirators shall be reconditioned to accepted manufacture's standards and used SCBA shall be reconditioned by the manufacturer or their authorized service agents prior to use after transferring ownership.

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7. Cleaning, Inspecting, Maintenance and Storage of Respirators:

7.1 Overview:

Each respirator shall be properly maintained to retain its original effectiveness. An acceptable program of care and maintenance shall include:

a) cleaning and sanitizing
b) inspection, testing and repair
c) storage and record keeping

Defective or non-functioning respirators shall be identified as out of service, tagged, and shall be removed from service until repaired or replaced.

a) Respirator inspection shall include, where applicable:
b) condition of component parts
c) tightness of connections
d) end of service life indicator
e) shelf life dates
f) proper function of regulators
g) alarms and other warning systems

Pressure gauges of all breathing gas cylinders in service shall indicate that the cylinders are within the full range. Cylinders with gauges indicating less than the full range shall be recharged in accordance with the manufacturer's instructions.

7.2 Inspection of SCBA Cylinders:

A qualified person shall inspect cylinders externally and internally according to the requirements of CSA Standards CAN/CSA-B339 and CAN/CSA-B340, the appropriate COA publications and the Transport Canada Regulations.

After each use and before filling, a qualified person shall inspect the exterior of cylinders for obvious signs of external damage.

Cylinders showing signs of obvious external damage shall be immediately depressurized and removed from service and prior to return to service, inspected in accordance with the requirements of CGA Publications C-1, C-6, C-6.1 AND C-6.2

Cylinders showing damage to the paint shall be inspected. Damaged cylinders shall be tagged out of service and repaired as soon as possible by a qualified person in accordance with the manufacture's instructions and specifications.

All composite SCBA cylinders (eg. Fibreglass, Kevlar, carbon-wrapped or hoop wound) shall be removed from service no later than 15 years from its manufacturing date.

The inspection records shall include the:

a) date and use of the respirator and cylinder
b) date of inspection
c) physical condition of the respirator and cylinder
d) cleaning and sanitizing of respirator
e) repairs done to respirators and cylinders
f) tests performed on respirators and cylinders or remedial actions taken

A record of all inspections and service performed on a respirator and cylinder shall be maintained in accordance with procedures established by the program administrator.

7.3 Repairs and Testing:

Where inspections as specified as above indicate that repairs or rebuilding of a cylinder or respirator are required, such repairs and subsequent tests and checks shall be carried out in accordance with the manufacturer's instructions.

Qualified persons shall repair and test respirators and cylinders, using original manufactures replacement and repair procedures.

The frequency with which the pressure regulating system of a respirator is rebuilt shall be governed by the manufacture's recommendations (inspection and performance requirements).

Persons who perform repairs of tests on cylinders should be registered as required by CSA Standards CAN/CSA-B339 and CAN/CSA-B340.

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7.4 Storage:

Respirators shall be stored in a manner that will protect them against dust, ozone, sunlight, heat, extreme cold, excessive moisture, vermin, oil, grease or any other potential hazard that may have a detrimental effect on the respirator.

Respirators shall be stored in manner that will prevent deformation of rubber or other electrometric parts.

7.5 Storage of Cylinders Not in Current Use:

Cylinders not in current use and those in long time storage should be stored at a reduced pressure, in the vertical position (valve up), never inverted.

Wherever possible, cylinders should be stored indoors in a warm dry environment.

Under pressurized cylinders should be stored with the main valve closed.

7.6 Rotation of Cylinders in Current Use:

Cylinders should be numbered, colour coded or arranged in a manner that ensures that all are used on a regular basis.

Protective caps shall be used to prevent physical damage to the cylinder valve threads and prevent dirt and moisture from entering the valve body.

Prior to using an SCBA cylinder that has not been used in a 12-month period, the air shall be discarded by slowly depressurising the cylinder to the atmosphere and refilling it with compressed air meeting the requirements of CSA Standard CAN/CSA Z180.1.

7.7 Hydrostatic Testing and Marking of SCBA Cylinders:

Cylinders that are transported shall comply with the requirements of the Transportation of Dangerous Goods Act and Regulations.

SCBA cylinders shall be hydrostatically tested at a frequency and in the manner described in CSA Standards CAN/CSA –B339 and CAN/CSA-B340. Hydrostatic tests are required every 5 years for aluminium and steel cylinders and every 3 years (5 years after 2005 manufacture date) for carbon, fibreglass, Kevlar and hoop wound cylinders.

Hydrostatic testing should be performed by a person registered according to the requirements of CSA Standard CAN/CSA-B339.

Hydrostatic re-test data and a statement relative to the condition of the cylinder shall be forwarded by the hydrostatic testing organization to the Program Administrator.

A cylinder that has failed hydrostatic testing shall be returned to DDFS. The Program Administrator shall ensure that the cylinder is taken out of service and rendered unserviceable.

Hydrostatic test records shall be kept by the Program Administrator.

Cylinders shall bear the markings required in CSA Standard CAN/CSA-B339.

No person should apply any markings to cylinders unless they are registered as required in CSA Standard CAN/CSA-B339.

7.8 Filling of Cylinders:

Filling of cylinders shall be carried out at an average rate not exceeding 300 psi/min unless written instructions to the contrary are provided by the respiratory manufacturer recommending an alternative fill rate.

Filling of a cylinder while it is being worn by a person shall only be permitted in a life-threatening emergency situation where the SCBA user is physically unable to leave a hazardous atmosphere and it should be done in accordance with the respirators manufacture's instructions and written procedures when equipment allows this to be done by a Rapid Intervention Team.

Cylinders shall be filled to a pressure not exceeding the TC/DOT approved maximum cylinder pressure shown on the cylinder.

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8. Health Surveillance of Respiratory Users:

8.1 Overview:

a) Prior to initial fit testing and respirator use, the Program Administrator shall ensure that documentation is completed that confirms that the individual is free from any physiological or psychological condition that may preclude him or her from being assigned the use of the selected respirator All health information shall be treated as medically confidential. A Screening form for respiratory users may assist in identifying such a condition.
b) Where the Program Administrator or respiratory user is concerned that a physiological or psychological condition exists that may preclude the use of a respirator, an opinion from a health care professional shall be obtained regarding that person's ability to use a respirator. This opinion shall be obtained before the person is permitted to use a respirator or if a change in conditions warrants an additional opinion.
c) The Program Administrator shall establish procedures to provide documented information to the health care professional regarding the work activity, workplace environment and the type of respirator(s) required.
d) The Program Administrator shall ensure that a respirator user obtains this opinion in writing from a health care professional that is informed about the job and the working conditions of that person. The written opinion shall indicate whether the user meets medical requirements, requirements with conditions or does not meet medical requirements to use the selected respirator. Where limitations are imposed, they shall be explicitly stated in the written opinion.
e) The Program Administrator shall ensure that documentation confirming the user's ability to use a respirator is maintained. Health information must be controlled and maintained by the health care professional.

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9. Program Evaluation:

9.1 Overview:

Respirator selection use and care should be effectively managed within the boundaries of an appropriate respiratory protection program. Douro-Dummer Fire Services senior staff will review once a year the effectiveness of the program by verifying compliance with regulatory requirements and department standards. Staff will also identify weaknesses and implement appropriate corrective actions.

9.2 Annual Review of Respiratory Protection Program:

The Program Administrator shall ensure that the respiratory protection program is reviewed annually to ensure that the program is being managed effectively and ultimately that respiratory users are being adequately protected. Key Elements may include:

a) A review of program elements against regulatory requirements.
b) Identification of management processes which include the clear definition of roles and responsibilities and adequate resources.
c) A review of documented program procedures.
d) Examination of records to verify that documentation procedures are being followed.
e) Confirmation that workplace practices comply with program requirements.
f) Documentation of performance problems and subsequent resolution or corrective action plans.
g) Stakeholder input to verify worker acceptance (comfort, ease of breathing, fatigue, vision, mobility, job interference and utility).
h) Proper selection use and maintenance of respirators.
i) Proper inspection of respirators.
j) Proper storage and maintenance of respirators.

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10. Record Keeping:

10.1 Overview:

The Program Administrator shall ensure that appropriate records are kept of all respiratory protection program activities as required by applicable legislation, employer policy or as outlined in this Standard, such as:

a) A list of individuals fulfilling the roles and responsibilities
b) Selection of the appropriate respirator
c) Respirator facial fit
d) Training
e) Cleaning, maintenance and storage of respirators
f) Health screening of respiratory users
g) Program evaluation

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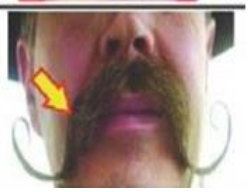
Appendix A

Unacceptable facial hair for respirator fit testing and use **DOES** interfere with

(a) the respirator sealing surface; or

(b) valve or respirator function.

E. Soul patch that will interfere with the respirator seal in the chin area on elastomeric facepieces Facial hair and sideburns that will interfere with the sealing surface	
F. This facial "shadow" (not clean-shaven) will interfere with the sealing surface of a half or full facepiece. It will also compromise a secondary seal inside a tight-fitting hood-style respirator. Degradation of fit can occur during cumulative work hours when an individual grows this amount of facial hair.	
G. Moustache is too thick and too long (down around edge of mouth); willcontact *a* sealing surface and interfere with exhalation valve. Sideburns and/or heavy hair under the chin will prevent a good seal.	
H. Moustache is too thick and too long (down around edge of mouth); willcontact a sealing surface and could get stuck in an exhalation valve. The hair on the rest of the face will interfere with a sealing surface.	
I. Hair is in sealing region and under the chin. Hair is in chin cup sealing region and on the side of the face.	
J. Moustache is too thick and too long; will contact a sealing surface and interfere with exhalation valve.	

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Appendix A

Why do staff need to be clean shaven for fit testing or to wear a respirator?

Facial hair will interfere with the ability to get a good seal. Staff must be clean shaven where the respirator ***seals to the face*** (as per the CSA Standard) for fit testing or when wearing the respirator.

Acceptable facial hair for respirator fit testing and use **DOES NOT** interfere with

(a) the respirator sealing surface; or

(b) valve or respirator function.

A. Clean-shaven, ideal for a good seal	
B. Amount of facial hair that will typically allow a good seal	
C. Moustache that does not interfere with the sealing surface, valves, or respirator function	
D. Soul patch that does not interfere with the sealing surface, valves, or respirator function