

**DAYVILLE FIRE COMPANY
RESPIRATORY PROTECTION
PROGRAM**

FEBRUARY, 2003

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SECTION 1 - INTRODUCTION

Policy

It is the policy of the Dayville Fire Co. to maintain comprehensive occupational safety and health programs based upon sound education and enforcement. This document establishes Departmental policy, responsibilities, and requirements for the protection of firefighters whose job requires the use of respiratory protection. This program shall be the source for all information pertaining to firefighter respiratory protection and respirator use. Should a document be referenced by this program, it becomes part of this program by reference and must be adhered to and periodically evaluated.

This program will also provide assistance to the firefighter in the use and care of respiratory protection. Therefore, this program and 1910.134, the respiratory standard will be available to all firefighters.

The Chief will act as the program administrator and is solely responsible for all facets of this program and has full authority to make necessary decisions to ensure the success of this program. The Chief shall administer this program and will develop written detailed instructions covering each of the basic elements in this program, and is the sole person authorized to amend these instructions.

The Dayville Fire Co. has selected Scott brand SCBA for firefighting.

SECTION 2 - STANDARD OPERATING GUIDELINES

General

Firefighters shall wear a self contained breathing apparatus (SCBA) under the following conditions:

- X while engaged in interior structural firefighting;
- X while working in confined spaces where toxic products or an oxygen deficient atmosphere may be present;
- X during emergency situations involving toxic substances; and
- X during all phases of firefighting and overhaul.

Firefighters wearing an SCBA must activate the personal alert safety system (PASS) device before entering an area where respiratory protection is required.

Firefighters wearing SCBA shall conduct a seal check prior to each use. (See Section 4).

Firefighters shall not remove the SCBA at any time in the dangerous atmosphere.

All firefighters shall continue to wear an SCBA until the officer in charge determines that respiratory protection is no longer required.

Respirator Fit Test

When using SCBA, each firefighter shall select and wear the correct size face piece as determined by initial and annual fit testing. A firefighter shall not wear respiratory protection unless the proper size face piece is available and the equipment is in proper working condition according to the manufacturer's specifications. (See Section 4).

Protective Clothing

Firefighters wearing an SCBA shall be fully protected with the use of approved structural firefighting clothing that meets the requirements of 1910.156(e).

Guidelines for IDLH atmospheres.

For all IDLH atmospheres, such as, but not limited to,

- Motor vehicle fires
- Hazardous substance spills
- Inside Fires
- As determined on-scene by the Incident Commander. (IC)

The Dayville Fire Co. shall ensure that:

- Two firefighter or, when needed, more than two firefighter is located outside the IDLH atmosphere;
- Visual, voice, or signal line communication is maintained between the firefighter(s) in the IDLH atmosphere and the firefighter(s) located outside the IDLH atmosphere;
- The firefighter(s) located outside the IDLH atmosphere are trained and equipped to provide effective emergency rescue;
- The IC is notified before the firefighter(s) located outside the IDLH atmosphere enter the IDLH atmosphere to provide emergency rescue;
- The IC, once notified, provides necessary assistance appropriate to the situation;
- Firefighter(s) located outside the IDLH atmospheres are equipped with:
 - Positive pressure SCBA's, or a pressure demand or other positive pressure supplied-air respirator with auxiliary SCBA; and either
 - Appropriate retrieval equipment for removing the firefighter(s) who enter(s) these hazardous atmospheres where retrieval equipment would contribute to the rescue of the firefighter(s) and would not increase the overall risk resulting from entry; or
 - Equivalent means for rescue where retrieval equipment is not required.

Guidelines for Interior Structural Firefighting

In interior structural fires, the Dayville Fire Co. shall ensure that:

- X At least two firefighters enter the immediately dangerous to life and health (IDLH) atmosphere and remain in visual or voice contact with one another at all times;
- X At least two firefighters will be located outside the IDLH atmosphere; and
- X All firefighters engaged in interior structural firefighting will use SCBAs.

Nothing in this section is meant to preclude firefighters from performing emergency rescue activities before an entire team has assembled.

Note: S.O.G. D-7 Two In/Two Out Policy

There must always be at least two firefighters stationed outside during interior structural firefighting. They must be trained, equipped, and prepared to enter if necessary to rescue firefighters inside. However, the incident commander has the responsibility and flexibility to determine when more than two outside firefighters are necessary given the circumstances of the fire. The two-in/two-out rule does not require an arithmetic progression for every firefighter inside, i.e. the rule should not be interpreted as four-in/four-out, eight-in/eight-out,

etc.

Firefighters will wait to commence interior structural firefighting, until the proper number of firefighters can be assembled on scene as required by the response. During this time, the fire will be attacked only from the outside, sizing-up operations will occur and emergency rescue necessary to save lives may take place.

One of the standby firefighters may have other duties such as serving as the incident commander, safety officer, or operator of fire apparatus. However, one of the outside firefighters must actively monitor the status of the inside firefighters and will not be assigned additional duties. The second outside firefighter may be involved in a wide variety of activities. Both of the outside firefighters must be able to provide support and assistance to the two interior firefighters; any assignment of additional duties for one of the outside firefighters must be weighed against the potential for interference with this requirement. Proper assignment of firefighting activities at an interior structural fire must be determined by the incident commander and is dependent on the existing firefighting situation. Consideration of all worksite variables and conditions, and the judgement of the incident commander is critical.

The two firefighters entering an IDLH atmosphere to perform interior structural firefighting must maintain visual or voice communication at all times. Electronic methods of communication such as the use of radios shall not be substituted for direct visual contact between team members in the danger area. However, reliable electronic communication devices are not prohibited and certainly have value in augmenting communication and may be used to communicate between inside team members and outside standby firefighters.

SECTION 3 – TRAINING

SELF CONTAINED BREATHING APPARATUS TRAINING

Firefighters wearing respiratory protection shall be trained in proper use, cleaning and maintenance. No firefighter shall wear respiratory protection without training as specified in this document.

At a minimum, training shall be provided to all firefighters of the Dayville Fire Co. annually, or when the firefighter's knowledge or use of the respirator indicates that the firefighter:

- X has not retained the required understanding or skill; or
- X any other situation arises in which retraining appears necessary to ensure safe respirator use.

Course Content

Regardless of the training conducted, the following general guidelines shall be followed.

In order to provide quality training, the department shall:

- X Identify training needs.
- X Identify performance objectives.
- X Develop the training activity.
- X Conduct the training.
- X Evaluate the student.

SECTION 4 - RESPIRATOR FIT TEST AND SEAL CHECK

SCBA

Each firefighter must pass a face piece fit-test initially and annually thereafter. Additional fit-tests may be required throughout the year if the fit is suspect or there is a visual change in the firefighter's physical condition.

However, prior to fit testing, the firefighter must pass the medical evaluation requirements in Section 6.

Fit testing of SCBA is accomplished by performing quantitative or qualitative fit testing in the negative pressure mode. This is done by equipping the face piece with adapters (T-bars) and particulate filters.

Fit Test Administration

The employer shall ensure the individuals administering fit testing:

- can perform tests properly,
- can recognize invalid tests,
- have a general knowledge of 1910.134, Respiratory protection,

and have a working knowledge of:

- paragraph (f), Fit testing, of the standard,
- the specific protocol used by the department to determine proper face piece fit, and,

General Requirements

The department shall conduct fit testing using the following guidelines. The requirements in this appendix apply to all OSHA-accepted fit test methods, both QLFT and QNFT.

1. The test subject shall be allowed to pick the most acceptable size so that the respirator is acceptable to, and correctly fits, the firefighter.
2. Prior to the selection process, the test subject shall be shown how to put on the respirator, how it should be positioned on the face, how to set strap tension and how to determine an acceptable fit. A mirror shall be available to assist the subject in evaluating the fit and positioning of the respirator. This instruction may not constitute the subject's formal training on respirator use, because it is only a review.
3. The test subject shall be informed that he/she is being asked to select the respirator that provides the most acceptable fit. Each respirator represents a different size and shape, and if fitted and used properly, will provide adequate protection.
4. The test subject shall be instructed to hold each chosen face piece up to the face and eliminate those that obviously do not give an acceptable fit.
5. The more acceptable face pieces are noted in case the one selected proves unacceptable; the most comfortable mask is donned and worn at least five minutes to assess comfort. Assistance in assessing comfort can be given by discussing the points in the following item A.6. If the test subject is not familiar with using a

particular respirator, the test subject shall be directed to don the mask several times and to adjust the straps each time to become adept at setting proper tension on the straps.

6. Assessment of comfort shall include a review of the following points with the test subject and allowing the test subject adequate time to determine the comfort of the respirator:

- (a) Position of the mask on the nose
- (b) Room for eye protection
- (c) Room to talk
- (d) Position of mask on face and cheeks

7. The following criteria shall be used to help determine the adequacy of the respirator fit:

- (a) Chin properly placed;
- (b) Adequate strap tension, not overly tightened;
- (c) Fit across nose bridge;
- (d) Respirator of proper size to span distance from nose to chin;
- (e) Tendency of respirator to slip;
- (f) Self-observation in mirror to evaluate fit and respirator position.

8. The test subject shall conduct a user seal check, either the negative and positive pressure seal checks described in this Section 4 of this program or those recommended by the respirator manufacturer which provide equivalent protection to the guidelines in this section. Before conducting the negative and positive pressure checks, the subject shall be told to seat the mask on the face by moving the head from side-to-side and up and down slowly while taking in a few slow deep breaths. Another face piece shall be selected and retested if the test subject fails the user seal check tests.

9. The test shall not be conducted if there is any hair growth between the skin and the face piece sealing surface, such as stubble beard growth, beard, mustache or sideburns which cross the respirator sealing surface. Any type of apparel which interferes with a satisfactory fit shall be altered or removed.

10. If a test subject exhibits difficulty in breathing during the tests, she or he shall be referred to a physician or other licensed health care professional, as appropriate, to determine whether the test subject can wear a respirator while performing her or his duties.

11. If the employee finds the fit of the respirator unacceptable, the test subject shall be given the opportunity to select a different respirator and to be retested.

12. Exercise regimen. Prior to the commencement of the fit test, the test subject shall be given a description of the fit test and the test subject's responsibilities during the test guideline. The description of the process shall include a description of the test exercises that the subject will be performing. The respirator to be tested shall be worn for at least 5 minutes before the start of the fit test.

13. The fit test shall be performed while the test subject is wearing any applicable safety equipment that may be worn during actual respirator use which could interfere with respirator fit.

14. Test Exercises. (a) The following test exercises are to be performed for all fit testing methods prescribed in this appendix, except for the CNP method. A separate fit testing exercise regimen is contained in the CNP protocol. The test subject shall perform exercises, in the test environment, in the following manner:

- (1) Normal breathing. In a normal standing position, without talking, the subject shall breathe normally.

- (2) Deep breathing. In a normal standing position, the subject shall breathe slowly and deeply, taking caution so as not to hyperventilate.
- (3) Turning head side to side. Standing in place, the subject shall slowly turn his/her head from side to side between the extreme positions on each side. The head shall be held at each extreme momentarily so the subject can inhale at each side.
- (4) Moving head up and down. Standing in place, the subject shall slowly move his/her head up and down. The subject shall be instructed to inhale in the up position (i.e., when looking toward the ceiling).
- (5) Talking. The subject shall talk out loud slowly and loud enough so as to be heard clearly by the test conductor. The subject can read from a prepared text such as the Rainbow Passage, count backward from 100, or recite a memorized poem or song.

Rainbow Passage

When the sunlight strikes raindrops in the air, they act like a prism and form a rainbow. The rainbow is a division of white light into many beautiful colors. These take the shape of a long round arch, with its path high above, and its two ends apparently beyond the horizon. There is, according to legend, a boiling pot of gold at one end. People look, but no one ever finds it. When a man looks for something beyond reach, his friends say he is looking for the pot of gold at the end of the rainbow.

- (6) Grimace. The test subject shall grimace by smiling or frowning. (This applies only to QNFT testing; it is not performed for QLFT)
- (7) Bending over. The test subject shall bend at the waist as if he/she were to touch his/her toes. Jogging in place shall be substituted for this exercise in those test environments such as shroud type QNFT or QLFT units that do not permit bending over at the waist.
- (8) Normal breathing. Same as exercise (1).
- (b) Each test exercise shall be performed for one minute except for the grimace exercise which shall be performed for 15 seconds. The test subject shall be questioned by the test conductor regarding the comfort of the respirator upon completion of the protocol. If it has become unacceptable, another model of respirator shall be tried. The respirator shall not be adjusted once the fit test exercises begin. Any adjustment voids the test, and the fit test must be repeated.

Tuberculosis respirator fit-testing

Fit testing must be performed initially (before the firefighter is required to wear the respirator in the workplace) and must be repeated whenever respirator design or facial changes occur that could affect the proper fit of the respirator. Examples of conditions which would require additional fit testing of an employee include (but are not limited to) the use of a different size or make of respirator, weight loss, cosmetic surgery, facial scarring, the installation of dentures or absence of dentures that are normally worn by the individual.

Fit testing shall be performed to the manufacturer's requirements.

Note: If the department uses the SCBA face piece with T-bar and T.B. filters, fit testing for Tuberculosis

is accomplished with the fit testing of the SCBA.

Effective Seal Required

An effective face-to-face piece seal is extremely important when using respiratory protective equipment. Minor leakage can allow contaminants to enter the face piece, even with a positive pressure SCBA. Any outward leakage will increase the rate of air consumption, reducing the time available for use and safe exit. The face piece must seal tightly against the skin, without penetration or interference by any protective clothing or other equipment.

Nothing can be between the sealing surface of the mask and the face of the wearer, including but not limited to, eyeglasses, protective hoods, and beards or other facial hair. If firefighters must wear glasses while wearing the SCBA, the department shall provide devices such as spectacles kits to the firefighter.

Firefighters shall perform a user seal check prior to every SCBA use. This can be done at the beginning of each shift during the firefighter's pack check. SCBA can only be worn when an adequate seal is achieved

Either the positive and negative pressure checks described below, or the respirator manufacturers recommended user seal check method shall be used. User seal checks are not substitutes for qualitative or quantitative fit tests.

Seal Check Guidelines

The respirator manufacturer's recommended guidelines for performing a user seal check may be used instead of the positive and/or negative pressure check guidelines provided below. The department must demonstrate that the manufacturer's guidelines are equally effective.

Positive pressure check. Close off the exhalation valve and exhale gently into the face piece. The face fit is considered satisfactory if a slight positive pressure can be built up inside the face piece without any evidence of outward leakage of air at the seal. For most respirators this method of leak testing requires the wearer to first remove the exhalation valve cover before closing off the exhalation valve and then carefully replacing it after the test.

Negative pressure check. Close off the inlet opening of the canister or cartridge(s) by covering with the palm of the hand(s) or by replacing the filter seal(s), inhale gently so that the face piece collapses slightly, and hold the breath for ten seconds. The design of the inlet opening of some cartridges cannot be effectively covered with the palm of the hand. The test can be performed by covering the inlet opening of the cartridge with a thin latex or nitrile glove. If the face piece remains in its slightly collapsed condition and no inward leakage of air is detected, the tightness of the respirator is considered satisfactory.

SECTION 5 - INSPECTION, STORAGE, MAINTENANCE AND AIR SUPPLY

Inspection

Regular periodic inspections are required to ensure that all respiratory protection equipment is properly operating and available for use.

Inspection Schedule

All SCBA shall be inspected at least monthly. After each inspection, the appropriate forms shall be completed. SCBA units determined to be unfit for use shall be taken out of service, and tagged with a description of the particular defect.

All SCBA's will be flow tested according to the manufacture's Operation and Maintenance manual.

SCBA cylinders shall be hydrostatically tested within the period specified in the container regulations of the Department of Transportation 49 CFR part 178. Generally, metal cylinders must be tested every five (5) years and composite cylinders every three (3) years. Composite cylinders will be removed from service after 15 years from the first hydrostatic test date.

Maintenance

Each SCBA shall be cleaned and disinfected after each use. Only cleaning/sanitizing solutions for respiratory equipment will be used for cleaning and disinfection.

In the event replacement or repair of SCBA components is necessary, it shall be performed according to manufacturer's instructions and only by persons specifically trained to perform the repairs, or returned to the manufacturer's service facility.

The SCBA's shall be checked for proper function before and after each use.

Storage

All units shall be stored so that they are protected against direct sunlight, dust accumulation, severe temperature changes, excessive moisture, fumes, and damaging chemicals. Care is to be taken so that the means of storage does not distort or damage rubber or elastomeric components.

Air Supply

Breathing air in the SCBA cylinder shall meet the requirements of the Compressed Gas Association G-7.1-1989, COMMODITY SPECIFICATION FOR AIR, with a minimum air quality of Grade D. The Dayville Fire co. shall ensure that suppliers of compressed breathing air provide a copy of the most recent inspection and certification.

The purity of the air from the department's air compressor shall be checked by a laboratory at least quarterly. A copy of the most recent inspection and certification must be maintained.

The Dayville Fire Co. shall assure that sufficient quantities of compressed air are available to refill SCBA for all emergencies.

Air cylinders shall be maintained in a fully charged state and shall be recharged when the pressure falls to 90% of the manufacturer's recommended pressure level.

SECTION 6 - MEDICAL EVALUATION

A medical evaluation to determine the firefighter's ability to wear a SCBA will be provided. Only firefighters that are medically able to wear SCBA will be allowed to do so. The medical evaluation can be achieved by the firefighter completing the medical questionnaire which is provided to the PLHCP for evaluation or a physical examination performed by the PLHCP. The information provided on the questionnaire is confidential and shall not be viewed by anyone other than the firefighter, the firefighter's representative, and the PLHCP.

SECTION 7 - RECORDKEEPING

The Chief shall maintain all records required by this section of the program. The records shall be made available to the firefighters for review.

Type of Record	Keep Records For
Monthly SCBA Inspection	
SCBA Maintenance/Repair	
Air Quality Tests	1 Year (depending on compressor) / each cascade cylinder change.
Fit Test	1 Year (maintain current record only)
Medical Evaluation	length of employment , plus thirty years (1910.1020)
Training	

SECTION 8 - PROGRAM EVALUATION

Evaluation Requirements

The effectiveness of the SCBA program shall be evaluated and corrective actions taken to ensure the respiratory protection program is properly implemented. The Dayville Fire Co. will regularly consult with firefighters to assess their views on the effectiveness of the program and to identify any problems.

The evaluation will be conducted by the one of the qualified company officers. The evaluation will ensure:

- X Guidelines for purchasing of approved equipment are in place;
- X All firefighters are being properly fitted with respiratory protection;
- X All firefighters are properly trained;
- X The proper equipment, cleaning, inspection, and maintenance guidelines are implemented;
- X Breathing air quality;
- X The required records are being kept; and
- X Changes are implemented to correct deficiencies.

Program Monitoring

Periodic monitoring of the respiratory protection program is necessary to ensure that all firefighters are adequately protected. Periodic monitoring is performed to determine if the guidelines are being followed and to also determine if the program has deficiencies that must be revised to ensure firefighter safety.

Random inspections shall be made by the Company's Officers to ensure that the provisions of the program are being properly implemented. Proper monitoring will be accomplished with the use of, but not limited to:

- Accident reports.
- On-scene observations.
- Response logs.
- Firefighter interviews.

Any change to the program must be immediately communicated to the firefighters.