

Pacific Southwest Region

FIRE AND AVIATION MANAGEMENT RESPIRATORY PROTECTION PROGRAM AND SELF CONTAINED BREATHING APPARATUS STANDARD OPERATING PROCEDURES



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INTRODUCTION

The following direction for respiratory protection will serve as minimum requirements for U.S.Forest Service Region 5 employees engaged in activities where a potentially hazardous atmospheric environment is suspected. The use of respiratory equipment is intended to provide greater safety protection for employees while meeting the wildland fire management mission.

U.S. Forest Service, Region 5 has assessed its exposure to potential hazardous atmospheric environments through a Job Hazard Analysis. Based upon these results, personnel with potential exposures will be equipped with respiratory protection. It is policy that employees engaged in activities where potentially hazardous atmospheric environment may exist are equipped with and trained in the use of Self Contained Breathing Apparatus (SCBA) and other Personal Protective Equipment (PPE) as appropriate.

This respirator program lays out standard operating procedures to ensure the protection of those employees engaged in activities where a potentially hazardous atmospheric environment is suspected or present. Respirators are to be used anytime these conditions are present. This program is in accordance with the requirements of OSHA 29 CFR 1910.134.

This document should be reviewed and updated a minimum of every five (5) years by a group knowledgeable in Forest Service Policy, industry standards and use of the SCBA equipment.

This Respiratory Protection Program and Self Contained Breathing Apparatus Standard Operating Procedures has been reviewed and approved by :

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REFERENCES

Following references provide authority, requirements and standards for the use of SCBA/PPE.

A. Forest Service Manual

1. 2160 Hazardous Materials Management
 - a. 2160.2 Objectives
 - b. 2160.3 Policy
2. 5101 Authority
 - a. 5101.1 Fire Management on National Forest System Land
 - b. 5101.2 Fire Management on other Federal, States, and Private lands
 - c. 5101.3 Interagency Fire Management Committees
3. 5102 Objective
4. 5103 Policy
 - a. 5103.1 Policies for Wildland Fire Management
5. 5106 Fire Management Wildland Urban Interface
 - a. 5106.02 Objectives
 - b. 5106.03 Policy
6. 5130 Fire Suppression
7. 5132 Suppression Action on Private Land
 - a. 5132.01 Authority for Suppression on Private Land
 - b. 5132.03 Policy
8. 5135 Fire Suppression Safety
9. 5135.04 Responsibility
 - a. 5135.04a Regional Forests and Area Director
 - b. 5135.04b Forest Supervisor
 - c. 5135.04c Work Supervisor
 - d. 5135.04d All employees
10. 5135.1 Protective Clothing and Equipment
11. 5135.2 Hazardous Materials
12. 5135.3 Self Contained Breathing Apparatus
13. 5137 Structure Fires
 - a. 5137.02 Objectives for Structure Fire Protection
 - b. 5137.03 Policy for Structure Fire Suppression
14. 6716 Personal Protective Equipment
 - a. 6716.03 Policy

15. 6720 Occupational Health Program

- a. 6720.2 Objective
- b. 6720.3 Policy
- c. 6720.4 Responsibility

16. 6721- Elements of the Forest Service Occupational Health Program

- a. 6721.2 Respiratory Protection

B. Forest Service Handbook

1. 6709.11 Health and Safety Code Handbook

2. Fire and Aviation Management Mission (Interagency Standards for Fire and Aviation Operations, Chapter 5).

C. 1970 Occupational Safety and Health Act - 29 CFR Ch. XVII (7-1-87)

1. 29 CFR 1910.120 Hazardous Waste Operations and Emergency Response: Procedures for handling off-site emergency incidents. Appendix B: General Description and discussion of the Levels of Protection and Protective Gear.

2. 29 CFR 1910.134 Personal Protective Equipment: Respiratory Equipment

3. 29 CFR 1910.156 Fire Brigades: Respiratory Protection Devices.

D. National Fire Protection Association (NFPA) Standards.

1. 1001 Standard for Fire Fighter Professional Qualifications

- a. 1001 3.3.6 Personal Protective Clothing
- b. 1001 3.3.7 Personal Protective Equipment

2. 1404 Standard for Fire Service Respiratory Protection Training

3. 1500 Standard on Fire Department Occupational Safety and Health Program

4. 1851 Standard on Selection, Care, and Maintenance of Protective Ensembles for Structural Fire Fighting and Proximity Fire Fighting

5. 1852 Standard on Selection, Care, and Maintenance of Open-Circuit Self-Contained Breathing Apparatus

6. 1971 Standard on Protective Ensemble For Structure Firefighting and Proximity Firefighting.

7. 1981 Standard on Open-Circuit Self-Contained Breathing Apparatus for Emergency Services.

E. American National Standards Institute (ANSI)

1. Z88.6 Standard for Respiratory Protection, Respirator Use and Physical Qualifications
2. Z88.10 Respirator Fit Test Methods

F. National Institute of Occupational Safety and Health (NIOSH)

1. Guide to Industrial Respiratory Protection (Publication No. 87-116)
2. NIOSH Certified Equipment List (Chapter 3, Part IV)

G. Safety and Health Hazard Analysis (FS 6700-7)

H. Executive Order 12196 of 1980 (Providing a safe working environment)

I. United States Code Title 42 The Public Health and Welfare

- 1.1856a-1 Authority to enter into contracts with State and local governmental entities
- 2.1856b Emergency assistance

PROGRAM ADMINISTRATION

A. General

The U.S. Forest Service, Region 5 conducted a job hazard analysis (Appendix J) and has determined that personnel who may be exposed to a potential hazardous atmospheric environment will be trained and equipped with SCBA.

B. Responsibility

The following are the levels of responsibilities and requirements for each level.

Regional Office: The Deputy Director of Fire and Aviation Management or designee will serve as the Regional SCBA Program Administrator.

- a. Assure policy is current and is implemented.
- b. Review accident reports involving SCBA in conjunction with the Agency Administrator or delegated official and ensure appropriate corrective action is taken.
- c. Coordinate with Forest SCBA Program Managers to share information, updates, etc.

Forest Supervisor: Will assign a Forest SCBA Program Manager whom will be responsible for program implementation.

Forest SCBA Program Manager: Forest Fire Chief, Deputy Forest Fire Chief or designee will serve as the Self Contained Breathing Apparatus Program Manager. They will ensure the following:

- a. Assure Regional direction is implemented.
- b. Add any local requirements to the minimum requirements of the Policy.
- c. Provide information to Division Chiefs concerning accident reports, updates, etc.
- d. Monitor the Forest Program through an annual review.
- e. Work with Human Resource Management and Procurement to arrange contract medical services for SCBA/PPE evaluations.

District Ranger: Will ensure the Division Chief is following the direction contained within this plan.

Division Chief: Is responsible for implementation of the SCBA Program.

Battalion Chief: Is responsible for "on the ground" implementation of the SCBA Program. This position will ensure the following:

- a. Supervise the implementation of the SCBA Program.
- b. Ensure all reports, records and documentation relevant to the SCBA Program are completed and maintained.

Captain: Will ensure employees that are assigned these tasks requiring the use of SCBA, are capable based on a medical evaluation, training and qualifications.

It is recognized that periodically individuals may be assigned to work on an engine that are not fully qualified or trained to use an SCBA as described in this plan. Module leaders and the employee shall ensure that individuals are only assigned duties they are qualified and trained to perform.

MEDICAL REQUIREMENTS - (29 CFR 1910.134)

Medical Evaluation

A medical evaluation to determine whether an employee is able to use a given respirator is an important element of an effective Respiratory Protection Program. It is necessary to prevent injuries, illnesses and even in rare cases, death from the physiological burden imposed by respirator use.

Employees may be assigned tasks requiring the use of respiratory equipment, only after a determination that the employee is able to safely perform assignments while using the equipment. A Physician or other Licensed Health Care Professional (PLHCP) (e.g., nurse practitioner, physician's assistant, or occupational health nurse) will determine what health; physical and psychological conditions are pertinent to use an SCBA.

The Forest Service will arrange and pay for medical evaluations when warranted by this plan. The purpose of the medical evaluation will be to determine if the employee is physically able to perform the work and use the SCBA equipment. All employees who use respirators (except for disposable paper respirators) will not be assigned to tasks requiring use of respirators, nor fit tested unless it has been determined that they are physically able to perform the work and safely use the respirator. Under this program, employees will receive initial and follow up medical evaluations as determined by the designated Forest Service PLHCP. The initial medical approval will be obtained prior to the employee being fit-tested or wearing the respirator.

To avoid expense for two separate exams, fire engine personnel that require a WCT physical should have the PLHCP review the SCBA medical form during the same visit as the WCT physical is accomplished.

OSHA regulation (29 CFR 1910.134a (10)) states that the Forest Service, as the employer, will provide medical evaluations before issuing breathing apparatus.

The PLHCP will evaluate and grant written medical approval for each employee prior to respirator use. The PLHCP will use a medical questionnaire or conduct an initial medical examination that obtains the same information as the medical questionnaire (Appendix C). The questionnaire will be presented confidentially and in a manner that the employee can understand. The Forest Service will provide employees with an opportunity to discuss the questionnaire and exam results with the PLHCP.

The following information will be supplied by the Forest Service to the PLHCP prior to the professional's recommendation concerning an employee's ability to safely use respiratory protection (Appendix C; Medical Evaluation Questionnaire and Appendix B; Physician Instructions contain the following information).

1. The type and weight of the respirator to be used by the employee.
2. The duration and frequency of respirator use (including rescue and escape).
3. The expected physical work effort.
4. Additional protective clothing and equipment to be worn.
5. Temperature and humidity extremes that may be encountered.

Frequency of Evaluation:

According to the American National Standards Institute Z-88.6-2006 an initial medical evaluation shall be performed using a medical history (Respirator Medical Evaluation Questionnaire, Appendix C) or interview and examination that obtain the same information as the medical questionnaire. In addition, a follow-up questionnaire or interview should be used periodically to identify medical conditions that develop after the initial evaluation. This questionnaire may be administered prior to an annual fit test. The frequency of this follow-up interval should be determined by the PLHCP.

Any information provided previously to the PLHCP does not need to be provided for a subsequent medical evaluation if the information and the PLHCP remain the same. The Forest Service will provide the PLHCP with a copy of this plan and the applicable regulatory requirements mandating this Plan (29 CFR 1910.134 (e) and Appendix C) if requested by the PLHCP.

The written recommendation from the PLHCP regarding an employee's ability to wear a respirator will provide only the following information:

1. Whether or not the employee is medically able to safely use the SCBA.
2. The need, if any for follow-up medical evaluations and the interval those evaluations should occur.
3. A statement that the PLHCP has provided the employee with a copy of the written recommendation.

The Forest Service will ensure that a follow-up medical exam is provided for employees who provide a positive response to any of the questions 1-8 in Part A, Section 2, of Appendix C, or whose initial medical examination demonstrates a need for a follow-up medical examination. The follow-up exam will include any medical tests, consultations, or procedures deemed necessary by the PLHCP to make a final determination.

Additional medical evaluations will also be provided by the Forest Service under the following circumstances:

1. An employee reports medical signs or symptoms that are related to their ability to safely use respiratory protection.
2. A PLHCP, supervisor, or the Forest Service Division Chief responsible for implementing this Plan, recommends that an employee be reevaluated.
3. Information from the respiratory protection plan, including observations made during fit-testing and program evaluation, indicates a need for employee reevaluation.

Special Testing

Spirometry or Exercise Stress Testing(EST) may be authorized if the PLHCP needs information in addition to a history and physical. Spirometry results do not in themselves indicate fitness or lack of fitness to safely use an SCBA. For accurate assessment, spirometry should be performed in accordance with the most recent recommendations of the American Thoracic Society. (Reference; ANSI Z88.6-2006, 10 Special Testing, 10.1.)

The Division Chief ensures all medical exams required by this program are completed. Examinations performed under the SCBA program will be provided at no cost to Forest Service employees. If the PLHCP determines that the employee is unable to safely use an SCBA, the Supervisor should contact the Battalion Chief for guidance on the employee's work assignments. The Forest Service may discontinue an employee's medical evaluations when an employee is no longer required to wear a respirator.

Medical Records will be sent to the Albuquerque Service Center (ASC) to be placed into the Employee Medical File (EMF).

Medical records should be provided to ASC-HRM Medical Records in a confidential mail envelope addressed to:
U.S. Forest Service
4000 Masthead Street NE
ATTN: Records Management
Albuquerque, NM 87109

Employee Exposure Documentation

Employee exposures will be reported and documented in the Safety and Health Information Portal System (SHIPS), by completing the Federal Notice of Traumatic Injury and Claim for Continuation of Pay/Compensation (CA-1); or Notice of Occupational Disease and Claim for Compensation (CA-2) as appropriate; to be activated if or when future medical treatment is required. A printed, signed copy should be filed in the employee medical folder and the original form retained by employee.

Temporary Disqualification of Respirator Use

The following conditions shall be considered temporarily disqualifying for respirator use:
Facial deformities, facial hair or other conditions that interfere with proper sealing of the respirator shall disqualify the applicant. These conditions may require medical evaluation or treatment and may result in permanent restriction from respirator use. Additional communication with the treating physician and/or the PLHCP, and monitoring of health status may be required. Fit testing and respirator use shall not be performed if there is any hair growth between the skin and the facepiece

sealing surface, such as stubble beard growth, beard, mustache or sideburns which cross the respirator sealing surface. (Reference; ANSI Z88.6-2006 9 Medical Evaluation, 9.2.2)

Training Requirements

Trainer (Contractor), for safe use of SCBA/PPE, it is essential that all potential users of SCBA be properly instructed in its use and maintenance. Only trained and competent persons may act as instructors. The Forest Service will contract with manufacture certified SCBA equipment use instructors to provide train-the-trainer sessions or hire a trained safety professional to conduct said training. The Contractor must possess the following:

1. Expertise in SCBA/PPE use, care, and maintenance.
2. Knowledge of U.S. Forest Service Region 5 Fire and Aviation Management Respiratory Program and Self Contained Breathing Apparatus Standard Operating Procedures (This Plan).

Trainer (FS Instructor): Trainer will obtain the following prior to being designated as a trainer/instructor.

1. Records (Appendix F1) of successful completion of the Train-The-Trainer course.
2. The trainer must be observed presenting instruction to users by a Fire Program Manager or designee to ensure proper instruction.
3. Training will include:
 - a. Policy and Procedures
 - b. SCBA/PPE Components
 - c. Proper Use, Care and Maintenance and Documentation
 - d. Donning and Doffing
 - e. Personnel and equipment testing procedures
 - f. Annual live fire vehicle fire suppression drills*
 - g. Other SCBA training that is deemed necessary by the Fire Program Manager

4. SCBA/PPE User training will include:

- a. Policy and Procedures
- b. SCBA/PPE Components
- c. Proper Use, Care and Maintenance and Documentation
- d. Donning and Doffing
- e. Personnel and equipment testing procedures
- f. Annual live vehicle fire suppression drills*
- g. Other SCBA training that is deemed necessary by the Fire Program Manager.

Employees responding to emergencies involving potentially hazardous atmospheric environment must:

Be trained in the use of SCBA/PPE.

Be trained at the Hazardous Materials First Responder Operations (FRO) level.

Have attended a FRO course/refresher training within the last twelve months. [1910.120\(q\)\(6\)\(ii\)](#)

Employees providing scene control (Incident Commander) of emergencies involving potential hazardous atmospheric environments must:

Be trained at the Hazardous Materials First Responder Operations (FRO) level.

Attend (FRO) course/refresher training within the last twelve months.

Meet the requirements of [1910.120\(q\)\(6\)\(v\)](#)

Written records shall be maintained on the local unit of the persons trained; proficiency level, date of training and the instructor (see Appendix F).

*If employee was unable to attend the live vehicle fire training, other simulation may be substituted.

Proficiency and Test Requirements

With a turn-out coat on and fire protective hood pulled down around the neck inside the turn-out coat. The SCBA components are laid out in front of the student ready to don, a face piece, structural gloves, and structural helmet. The student will don their self-contained breathing apparatus using the over the head method under simulated emergency conditions and breathing air within 60 seconds.

Proficiency Drill (Appendix F2): This evolution must be repeated until successful. The results of this drill will be documented in the employee's SCBA training file, maintained at the local unit.

Written Test (Appendix F3): Completed at 80% prior to the use of SCBA. Completed tests will be maintained in the employee's SCBA training file, maintained at the local unit. If the test is not passed at 80% or higher the employee may retake the test after remediation has occurred.

Training References:

Many references are available and should be obtained to supplement training and instruction. (Appendix F4)

REQUIRED PPE

Personal Protective Equipment

Incidents involving potentially hazardous atmospheric environments require the following minimum NFPA 1971 compliant PPE:

- SCBA (3 units per engine minimum)
- Turn-Out Jacket (Bunker Coat) (3 per Engine minimum)
- Turn-Out Pants (Bunker Pants) (3 per Engine minimum)
- Structure Firefighter Gloves (3pairs per Engine minimum)
- Structure Firefighter Helmet (3 per Engine minimum)
- Nomex Hood (3 per Engine minimum)
- Rubber Bunker (3 pairs per Engine minimum)

Note: Turn out care and maintenance procedures are located in Appendix H.

SELECTION OF RESPIRATORY EQUIPMENT

It will be the responsibility of the U.S. Forest Service, Region 5 to identify and procure SCBA/PPE. The diversity of hazards employees may be exposed to during the course of their duties requires careful and informed selection of the proper respiratory equipment.

Approved equipment - Only NIOSH (Chapter 3, Part IV) and NFPA approved SCBA will be purchased and used.

A. SCBA

- a. Positive pressure
- b. Open circuit
- c. Two stage regulator
- d. Minimum 30 minute cylinder
- e. Tight fitting Full Facepiece

B. Cylinder Air Quality:

- a. Type I – Grade D breathing air requirements of the ANSI/Compressed Gas Association Commodity Specification for Air G-7.1-1989 include:

Table 1

Oxygen - O ₂ :	19.5 - 23.5%
Hydrocarbons of gas at NTP (ppm)	< 5 milligrams/m ³
Carbon monoxide - CO:	< 10 ppm
Carbon dioxide - CO ₂ :	< 1000 ppm
Odor:	no pronounced odors

Use of Respiratory Equipment

General

A Regional Job Hazard Analysis (JHA) approved by the Regional Forester identifies the need for proper SCBA/PPE.

The use of SCBA/PPE is mandatory whenever a potentially hazardous atmospheric environment exist. SCBA/PPE will be required until the hazard no longer exists.

At least two individuals, each wearing SCBA/PPE, will work together, maintaining contact (voice or hand signal communications).

It is required there be at a minimum, a third person equipped with SCBA/PPE and immediately available in order to effect a rescue of the tactical team in the event of an emergency situation.

Individuals not equipped with SCBA/PPE will not enter the potentially hazardous atmospheric environment.

Firefighter safety is the highest priority at the scene. All actions must be based on the training level of the module, resources on hand, safety equipment and the training/comfort level of the module leader (Captain) to safely perform the mission.

Facepiece Seal

Supervisors and employees are responsible for assuring the absence of facial hair is maintained. A fit test and respirator use shall not be performed if there is hair growth between the skin and the facepiece sealing surface, such as stubble beard growth, beard, mustache or sideburns which cross the respirator sealing surface. (Reference; ANSI Z88.6-2006 9 Medical Evaluation, 9.2.2)

Hair will be worn in such a manner as not to affect the seal of the respiratory protection equipment. Hair that precludes the proper wearing and performance of the SCBA/PPE is not permitted.

Any facial hair that precludes the proper wearing and performance of the SCBA is not permitted (Table 2).

Table 2. Applicable references regarding facial hair.

Per OSHA, ANSI, NFPA...no respirator (including positive pressure respirators) should be used when facial hair interferes with the face seal.

OSHA's requirement 29 CFR 1901.134 (g)(1) Face piece seal protection. (i) The employer will not permit respirators with tight-fitting face pieces to be worn by employees who have: (A) Facial hair that comes between the sealing surface of the face piece and the face or that interferes with valve function;

ANSI Z88.10 6.3.1 2001 Facial Hair A respirator, either positive or negative pressure, equipped with a face piece (tight or loose fitting) will not be worn if the facial hair comes between the face piece and the face or if facial hair interferes with valve function.

NFPA 1500 5-3.9 A growth of beard or facial hair at any point where the SCBA face piece is designed to seal with the face, regardless of the specific fit test measurement that can be obtained, or hair that could interfere with the face piece valve function will be prohibited for members required to use SCBA's.

Jewelry that precludes a complete seal of the facemask is not permitted.

Jewelry within the confines of the facemask is prohibited.

Prescription glasses can be worn with the appropriate spectacle kit provided by the agency at no cost to the employee.

Preventive Measures

It is the policy of the U.S. Forest Service Region 5 that personnel not be exposed to a hazardous atmosphere without the benefit and protection of SCBA. Instances of exposure will be promptly and thoroughly reviewed. The reviewing official will make appropriate recommendations to prevent a recurrence and submit them in writing to the Regional SCBA Program Administrator and appropriate Line Officers.

Maintenance and care of Respiratory Equipment

General

A program for maintenance and care of respiratory equipment will include the following services:

- Inspection
- Cleaning and disinfection
- Repair
- Storage
- Documentation

Maintenance of respiratory equipment is the responsibility of each forest. Utilize cooperators expertise and equipment as appropriate.

Inspection procedures

All respiratory equipment will be inspected routinely and documented on SCBA Inspection Checklist (Appendix D).

Daily

This inspection should be made at the beginning of the operational period. It will include the following:

The SCBA will be examined as described in Appendix D.

After Use

The user will clean and inspect each SCBA immediately after use as described in Appendix D.

The SCBA will be examined as described in Appendix D.

Monthly

In addition to daily and after use inspections, donning procedures will be performed on all in service SCBA/PPE.

Follow manufacturer's instructions for repairs. Any and all repairs will be performed by a manufacturer's certified technician.

After repairs are accomplished the SCBA will be inspected per Appendix A and returned to service in the ready position.

Annual

Annual inspection and servicing will be performed by a manufacturer's certified technician. Service will meet manufacturer's specification.

Hydrostatic test:

Hydrostatic tests will be performed every 3 to 5 years depending on the type of cylinder (Table 3). Cylinders will be tested and maintained in accordance with the manufacturer's specification and as prescribed in the shipping container specification regulations of the Department of Transportation (CFR part 173 and 178).

Table 3. Hydrostatic Test Intervals by Cylinder Type.

Cylinder Type	Hydro Static Test Interval
Aluminum/Steel	5 years
Composite	3 years
Carbon Fiber Composite	5 years

Maintenance records:

SCBA inspection checklist (Appendix D) and SCBA maintenance records (Appendix E) must be maintained for the life of the SCBA. These records should be maintained locally with each SCBA. An equipment repair log will be maintained by SCBA identification number. (Appendix E).

Cleaning and Disinfecting

SCBA/PPE users will be trained in the cleaning and disinfecting according to the Respirator Cleaning Procedures (Appendix H).

Storage

SCBA/PPE will be stored (packed) as prescribed by the manufacturer and in accordance with NFPA standards.

Respiratory Fit Testing Procedures: (29 CFR 1910.134 (f))

All SCBA users will be fit-tested. The U.S. Forest Service, Region 5 will ensure that employees using a positive pressure, tight-fitting face-piece respirator pass an appropriate qualitative (sensory) fit test (QLFT) or quantitative (machine) fit test (QNFT), as appropriate, prior to use. Fit-testing will be conducted annually by an approved/qualified technician.

The employee must be fit-tested with the same make, model, style, and size of respirator to be used. Employees will not be fit-tested until they have received medical approval and are free of facial hair or any condition that interferes with the face to face-piece seal.

The Forest Service will conduct additional fit-testing whenever: the employee, the designated PLHCP, or supervisor makes observations of changes in the employee's physical condition that could affect respirator fit. Such conditions include, but are not limited to, facial scarring, dental changes, cosmetic surgery, or an obvious change in body weight. Additional fit testing will also be required if the employee subsequently notifies the supervisor that the fit of the respirator is unacceptable.

Fit test results will be recorded and maintained in the SCBA users training file.

Appendix A: Standard Operating Procedures

STANDARD OPERATING PROCEDURES

- A. General – This section will provide direction on Standard Operating Procedures (SOP's) for the use of SCBA/PPE for incidents where potentially hazardous atmospheric environment exist. SOP's are necessary to describe limits on equipment/PPE use.
- B. Tactical Procedures – The following are general tactical procedures to be used during fire suppression activities:
- 1. Size Up.** From the time of dispatch the employees will gather information relative to the incident. Upon arrival, as the initial attack incident commander, the Module Leader will provide a report of conditions and initiate actions to the level of the crew's training, capability and safety equipment.
 - 2. Rescue.** Rescues of the public are generally the responsibility of the local/State fire agency. However, under Life, Resource and Property guidelines, only a trained and competent Module Leader will determine the extent of the search or rescue operation. A rescue will not be conducted without the required PPE for the emergency incident. Work in teams of two; provide for rescue per FSM 5102 direction (if properly trained and experienced) and provide for back-up with charged 1 ½" minimum hose line staffed with two firefighters.
 - 3. Exposure.** The objective of protecting exposures is to prevent Wildland fire. All suppression or management efforts will be made to confine the incident. Efforts will be concentrated on protecting adjacent ignition sources and sensitive areas, depending on proximity to burning structures, vehicles, dumps, etc. The extent of exposure protection will depend on incident complexity, resource capabilities, and reinforcement availability. Tactical firefighting or aggressive action may be utilized to protect threatened exposures.
 - 4. Ventilation.** Horizontal – cross and natural ventilation will be the standards for allowing fires to vent noxious smoke and fumes (and may present an exposure problem). Vertical ventilation tactics and procedures will be accomplished by local/State fire agencies.
 - 5. Extinguishment.** Employees involved in initial attack will wear required PPE. Attack teams will consist of a minimum of two individuals. One person will maintain scene control and monitor the progress of the attack team. Provide for rescue per FSM 5102 direction (if properly trained and experienced) with 1 ½" hose line minimum, immediately ready for use staffed with at least one firefighter.
 - 6. Salvage and Overhaul.** Should take place only to maintain the incident from rekindling (exterior only) until the appropriate jurisdictional agency arrives. Salvage and overhaul activities are the responsibility of the local/ State fire agency.
 - 7. Responsible Agency.** Upon arrival of the responsible agency, Forest Service crews should be released, or placed in an appropriate support role.
- C. All Risk Incidents:
Safety of personnel is the primary concern. Efforts should be made to confine fires and protect adjacent ignition sources, such as the Wildland.

1. Vehicle Fires:

Note: For the purpose of this plan – Working within 30 feet of any vehicle fire is interpreted as working in an Immediately Dangerous to Life and Health (IDLH) environment. Any employee working within the IDLH environment of any vehicle fire prior to extinguishment or before being determined to be safe by the Incident Commander shall be protected by SCBA/PPE.

- a. Attack vehicle with water, with a team of two firefighters, with minimum 1 ½” hose line, and a minimum 60 gpm nozzle with ball shut off.
 - a. Provide for rescue and back-up of attack team with 1 ½” hose line minimum, immediately ready for use staffed with at least one firefighter.
 - b. Stay upwind if possible
 - c. Provide for traffic control when required. Employees shall be trained in proper Temporary Traffic Control procedures.
 - d. Avoid road flares if fuel is leaking or if vegetation is nearby.

*** The decision to use and remove SCBA will be made by the module leader.**

2. Dump/Dumpster/Trash Fires

- a. Due to the probability of hazardous materials being involved or in a close proximity to the fire scene, no action will be taken until a thorough size-up has been conducted by the Module Leader. The Module Leader will wear appropriate PPE during the size-up.
- b. Utilize extreme caution around trash and dump fires. Trash piles/dumpsters may contain aerosol spray cans, flammable liquids and or hazardous materials. If hazardous materials are determined to be present, the unit’s hazardous materials coordinator should be notified. In a hazardous materials incident, the respective agency should initiate the appropriate action. Forest Service units may work in a support role.
- c. Attack fire with water, with a team of two firefighters, with minimum 1 ½” hose line, and a minimum 60 gpm nozzle with ball shut off.
 - b. Provide for rescue and back-up of attack team with 1 ½” hose line minimum, immediately ready for use staffed with at least one firefighter.
 - d. Stay upwind if possible

*** The decision to use and remove SCBA will be made by the module leader.**

3. Structure Fires

- a. The primary role of the Forest Service in structure firefighting activities is in support of State and Local fire Agencies as defined in State and/or Local Agreements.
 - b. Make exterior attack while protecting exposures and adjacent Wild lands.
 - c. Shut off gas/ electrical utilities. (Best practice is to shut off the Main Breaker, not each individual breaker)
 - d. Attack fire with water, with a team of two firefighters, with minimum 1 ½” hose line, and a minimum 60 gpm nozzle with ball shut off.
 - e. Provide for rescue and back-up of attack team with 1 ½” hose line minimum, immediately ready for use staffed with at least one firefighter.
 - f. Stay upwind if possible
- * **The decision to use and remove SCBA will be made by the module leader.**
4. Hazardous Materials (including Gas, Oil and LPG fires) – Forest Service personnel who encounter any spill of unknown material will treat such materials as hazardous until identified. The primary objective of Forest Service personnel will be protection of the Life, Resources, and Property. Follow policy outlined in FSM 2160. The following procedures will be used:
- a. Report the incident as a possible Haz-Mat incident, request appropriate response, maintain off-site communications, and report any change of conditions.
 - b. Approach the incident scene from upwind, uphill side at a safe distance
 - c. Observe/size-up the incident using binoculars
 - d. Attempt to identify the material using accepted methods and procedures.
 - e. Position vehicles facing away from the incident.
 - f. Isolate the area and establish a perimeter of 360 degrees around the potential Haz-Mat incident scene. **DO NOT ALLOW ENTRY.**
 - g. With proper training and experience, limiting the spread of the material may be attempted.
- * **The decision to use and remove SCBA will be made by the module leader.**

Appendix B: Instructions to Physician

INSTRUCTIONS TO PHYSICIAN

U.S. Forest Service employees will be using self-contained breathing apparatus (SCBA). This protection will be worn when firefighters enter potentially hazardous atmospheric environments. This will consist of physically demanding work and wearing fire fighter personal protective ensembles in high temperature environments.

Because the use of breathing apparatus increases the work of the heart and lungs, a medical assessment is requested to determine if the employee is physically capable of performing this work.

MEDICAL REQUIREMENTS – (ANSI Z88.6 – 2006)

OSHA regulation (29 CFR 1910.134a (10)) states that the Forest Service, as the employer, will provide medical evaluations before issuing breathing apparatus.

A spirometry test and/or an exercise stress testing (EST) may be used in addition to medical history and physical examination in order to establish a baseline record.

A Physician or other Licensed Health Care Professional (PLHCP) will determine what physical and psychological conditions are pertinent. The employee's initial and follow up medical status pertaining to the use of respiratory equipment will be reviewed and documented by the PLHCP.

Medical Evaluation Components

- Physical examination
- Medical history
- Heart disease
- High blood pressure
- Lung disease (pulmonary disease) and sinus conditions
- Skin problems
- Seizures and substance abuse
- Claustrophobia and anxiety
- Eye glasses and contacts
- Pulmonary testing *
- EKG *

*PLHCP discretion with approval from Unit SCBA Program Manager

Equipment and Conditions

- Self Contained Open Circuit Breathing Apparatus weighing up to 35 lbs.
- The Employee will use SCBA/PPE for training and fire suppression purposes, no more than one to two hours in duration under normal circumstances.
- The expected physical work effort is heavy; lifting 50 lbs. from floor to waist or shoulder, pulling fire hose, lifting tools, Heavy Physical exertion. (>5 mets)
- Full Structure Fire Ensemble, including Bunker Jacket and Pants, Boots, Helmet and Hood.
- Temperature and humidity; High temperatures during fire suppression activities.

Information Provided to the PLHCP: Appendix C

The PLHCP will recommend in writing the employee's ability to wear SCBA/PPE with any use restrictions and periodicity of medical evaluations on the attached Appendix C Respirator Medical Evaluation Questionnaire.

Appendix C: Respirator Medical Evaluation Questionnaire

CONFIDENTIAL MEDICAL INFORMATION

**This information cannot be shared without the written authorization of the worker
Annex C1: Respirator Medical Examination Form/Temporary Disqualification Criteria**

<u>LAST NAME</u>	<u>FIRST NAME</u>	<u>M</u>	<u>DATE OF BIRTH</u>	<u>SEX (M/F)</u>
<u>SUPERVISOR</u>	<u>PHONE #</u>	<u>FOREST and DISTRICT</u>		
<u>TITLE</u>	<u>LOCATION</u>	<u>HOME TELEPHONE #</u>		
<u>HOME ADDRESS</u>				

Do Not Write Below This Line – For PLHCP Use Only

Body Mass Index BMI = $\frac{\text{Body weight in kilograms (kg.)}}{\text{Height in meters squared (m)}}$
--

1 inch = .0254 meters 1 Kg. = 2.2 pounds (Lbs.)
--

BMI > 30 Probable Obesity

Height _____
 Weight _____
 BP _____
 Pulse _____

<u>Performed at PLHCP Request</u>	<u>Normal</u>	<u>Abnormal</u>
Pulmonary Function Test	_____	_____
EKG	_____	_____
T.C.	_____	_____
HDL	_____	_____
Glucose	_____	_____
HEENT	_____	_____
Facial Config.	_____	_____
Heart Sounds	_____	_____
Lung Sounds	_____	_____
Musculoskeletal	_____	_____
Neurologic	_____	_____
Dermatologic	_____	_____
Visual Acuity	_____	_____
Audiogram	_____	_____
Other	_____	_____

Temporary Disqualification Criteria Identified problem areas require physician review and may necessitate further medical testing	
BP	SBP \geq 140 OR \geq DBP 90
Resting Pulse	<40 or >100
Pulmonary Function	FVC or FEV ₁ , <60% of Predicted
BMI	>30
History or findings suggestive of coronary artery disease without a current “negative” stress test and/or cardiology evaluation. For “Heavy Work” certification (Stress test must demonstrate \geq 10 METs functional capacity with absence of arrhythmia, abnormal blood pressure response, or ischemia).	
Any history or finding that prompts the examiner to be concerned about sudden incapacity or the ability to work safely, such as multiple risk factors or a single extreme risk factor for coronary artery disease or a musculoskeletal, neurological, psychological, endocrine disorder, dermatologic disorder, and/or significant obesity.	

PLHCP Determination: Circle a Class

- Class 1:** No restriction on respirator use.
- Class 2: Conditional Use: Some specific use restrictions or medical requirements (e.g., moderate/light Work only, PAPR only, no SCBA use, annual medical evaluation, age-specific medical evaluation).
- Class 3: No respirator use permitted (permanent).
- Class 4:** No respirator use permitted (temporary) – you require additional medical evaluation and/or treatment and physician evaluation (see above).
- Class 5: Additional temporary/permanent (non-respirator) restrictions – (e.g., no heavy lifting, No climbing, no heat stress).

Restrictions/Additional Medical Requirements/Findings on Targeted Evaluation/Comments: _____

Date of Next Medical Re Evaluation	Evaluating PLHCP’s Signature	Date
------------------------------------	------------------------------	------

Title	Organization
-------	--------------

**Annex C2-A: Request for Medical Clearance for Respirator Use Questionnaire
(The following areas should be considered in the medical evaluation and the medical/industrial**

hygiene interface documented appropriately)

Supervisor

Forest and District

Employee

Date of Birth

Type of Respirator to be used: (Indicate weight(s) of respirator(s))

	Weight	
Open-circuit SCBA	35 LBS	

Expected level of physical work effort (63CFR 1284)

Heavy: Lifting 50 lbs. from floor to waist or shoulder, Pulling Fire Hose Lifting tools Heavy Physical exertion. (>5 mets)

Extent of Usage:

- Occasionally – < once a week
- Rarely – or for emergency situations - Firefighting
- Maximum Number of Hours of use Per Day (estimate): 1-2 Hours

Special Work Considerations (all could apply)

- Protective clothing
- Vapor Barrier clothing
- Temperature and humidity
- Personal Protective Equipment
- Responsibility for health and safety of others, of Public (Security, Rescue, Haz-Mat, Fire Brigade, Nuclear)
- Dangerous Work Environment (High Voltage, high places, machinery)
- Hazardous material
- Hazardous atmosphere (IDLH)
- Confined Space
- Communication essential
- Normal vision essential

Description of usual job functions, title, tasks, work activities:

Annex C2-B: Supervisor Copy of PLHCP’s Written Recommendation Detach or place on separate form or transmit electronically

PLHCP Determination: Circle a Class

- Class 1: No restriction on respirator use.
- Class 2: Conditional Use: Some specific use restrictions or medical requirements (e.g., moderate/light Work only, PAPR only, no SCBA use, annual medical evaluation, age-specific medical evaluation).
- Class 3: No respirator use permitted (permanent).
- Class 4: No respirator use permitted (temporary) – you require additional medical evaluation and/or treatment and physician evaluation (see above).
- Class 5: Additional temporary/permanent (non-respirator) restrictions – (e.g., no heavy lifting, no climbing, no heat stress).

Restrictions/Additional Medical Requirements:

Date of Next Medical Re Evaluation PLHCP Signature

CONFIDENTIAL MEDICAL INFORMATION

This information cannot be shared without the written authorization of the employee

Annex C3: Medical Questionnaire for Respirator Users (Initial)

Instructions:

1. Ask the employee completing the form if they can read English. Can the employee read? Yes No
If they cannot read, an impartial individual must read the questionnaire to the employee.
2. To maintain confidentiality, neither the employer nor supervisors may look at or review the questionnaire.
3. Provide instructions to the employee for forwarding the questionnaire to the appropriate health care professional.
4. Employee should print answers.

SECTION 1

1. Date: _____ 2. Name: _____ Employee # _____
3. Your age (to nearest year): _____ 4. Sex: Male Female 5. Your height _____ ft. _____ in.
6. Your weight: _____ lbs. 7. Your job title: _____
8. A phone number where you can be reached by the health care professional who reviews this questionnaire (include area code): _____ 9. The best time to phone you at this number: _____
10. Has your employer told you how to contact the health care professional who will review the questionnaire: Yes No
11. Check the type respirator you will be using:
 Open Circuit Self Contained Breathing Apparatus (SCBA)
12. Have you worn a respirator Yes No If yes, what type(s): _____
 Yes No

SECTION 2

1. Do you currently smoke tobacco, or have you smoked tobacco in the last month: Yes No
2. Have you ever had any of the following conditions?

a. Seizures (fits):	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No		<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
b. Diabetes (sugar disease):	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No		<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
c. Allergic reactions that interfere with your breathing:	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No		<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
d. Claustrophobia (fear of closed-in places):	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No		<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
e. Trouble smelling odors:	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No		<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
f. Elevated Cholesterol	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No		<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
3. Have you ever had any of the following pulmonary or lung problems?

a. Asbestosis:	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No		<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
b. Asthma:	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No		<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
c. Chronic bronchitis:	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No		<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
d. Emphysema:	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No		<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
e. Pneumonia:	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No		<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
f. Tuberculosis:	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No		<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
g. Silicosis:	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No		<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
h. Pneumothorax (collapsed lung):	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No		<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
i. Lung cancer:	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No		<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
j. Broken ribs:	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No		<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
k. Any chest injuries or surgeries:	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No		<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
l. Any other lung problem that You've been told about:	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No		<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
4. Do you currently have any of the following symptoms of pulmonary or lung illness?

a. Shortness of breath:	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No		<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
b. Shortness of breath when walking fast on level ground or walking up a slight hill or incline:	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No		<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
c. Shortness of breath when walking with other people at an ordinary pace on level ground:	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No		<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
d. Have to stop for breath when walking at your own pace on level ground:	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No		<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
e. Shortness of breath when washing or dressing yourself:	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No		<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
f. Shortness of breath that interferes with your job:	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No		<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
g. Coughing that produces phlegm (thick sputum):	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No		<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
h. Coughing that wakes you early in the morning:	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No		<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
i. Coughing that occurs mostly when you are lying down:	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No		<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
j. Coughing up blood in the last month:	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No		<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
k. Wheezing	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No		<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
l. Wheezing that interferes with your job:	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No		<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
m. Chest pain when you breathe deeply:	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No		<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
n. Any other symptoms that you think may be related to lung problems:	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No		<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
5. Have you ever had any of the following cardiovascular or heart problems?

a. Swelling in your legs or feet (not caused by walking):	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No		<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
b. Heart arrhythmia (heart beating irregularly):	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No		<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
c. High blood pressure:	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No		<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
d. Heart Failure:	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No		<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
e. Heart attack:	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No		<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
f. Stroke:	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No		<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
g. Angina:	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No		<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
h. Any other heart problems:	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No		<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
6. Have you ever had any of the following cardiovascular or heart symptoms?

a. Frequent pain or tightness in your chest:	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No		<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
b. Pain or tightness in your chest during physical activity:	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No		<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
c. Pain or tightness in your chest that interferes with your job:	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No		<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
d. In the past two years, have you noticed your heart skipping or missing a beat:	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No		<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
e. Heartburn or indigestion that is not related to eating:	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No		<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
f. Any other symptoms that you think may be related to heart or circulation problems:	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No		<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
g. A history of elevated cholesterol: (> 200 mg/dl)	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No		<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
h. A history of diabetes	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No		<input type="checkbox"/>	Yes	<input type="checkbox"/>	No

7. Do you currently take medication for any of the following problems?
- a. Breathing or lung problems: Yes No
b. Heart trouble: Yes No
- c. Blood pressure: Yes No
d. Seizure (fits): Yes No
8. If you've used a respirator, have you ever had any of the following problems?
(If you've never used a respirator, check the following block and go to question 9): **Never Used**
- a. Eye irritation: Yes No
b. Skin allergies or rashes: Yes No
c. Anxiety: Yes No
- d. General weakness or fatigue: Yes No
e. Any other problem that interferes with your use of a respirator: Yes No
9. Have you ever lost vision in either eye (temporarily or permanently): Yes No
10. Do you currently have any of the following vision problems?
- a. Wear contact lens: Yes No
b. Wear glasses: Yes No
- c. Color blind: Yes No
d. Any other eye of vision problem: Yes No
11. Have you ever had an injury to your ears, including a broken ear drum? Yes No
12. Do you currently have any of the following hearing problems?
- a. Difficulty hearing: Yes No
b. Wear a hearing aid: Yes No
- c. Any other hearing or ear problem: Yes No
d. Comments _____
13. Have you ever had a back injury? Yes No
14. Do you currently have any of the following musculoskeletal problems?
- a. Weakness in any of your arms, hands, legs or feet: Yes No
b. Back pain: Yes No
c. Difficulty fully moving your arms and legs: Yes No
d. Pain or stiffness when you lean forward or backward at the waist: Yes No
e. Difficulty fully moving your head up or down: Yes No
f. Difficulty fully moving your head side to side: Yes No
g. Difficulty bending at your knees: Yes No
h. Difficulty squatting to the ground: Yes No
i. Difficulty climbing a flight of stairs or a ladder carrying more than 25 lbs.: Yes No
j. Any other muscle or skeletal problem that interferes with using a respirator: Yes No
15. Do you have any facial hair that would interfere with a good face seal? Yes No
16. Are you allergic to latex? Yes No
17. Are you pregnant? Yes No
18. Would you like to talk to a health care professional who will review this questionnaire about any of your answers? Yes No

VERIFICATION/CONSENT STATEMENT

I verify that the above information is true and complete to the best of my knowledge. I hereby give permission for a physical examination (if needed) to determine my suitability for respirator use. I understand that this examination is designed to satisfy regulatory requirements and should not be considered to be a routine medical examination. *I agree to "self report" changes in my medical condition that may affect my ability to work safely to my supervisor.*

Full Name (Please Print)	Signature	Date
Additional Medical Evaluation Yes _____ No _____	Physician Evaluation Yes _____ No _____	

Name (PLHCP) Print	Title (PLHCP)	Signature	Date
--------------------	---------------	-----------	------

CONFIDENTIAL MEDICAL INFORMATION

This information cannot be shared without the written authorization of the employee.

Annex C4: Medical Questionnaire for Respirator Users (Periodic)

To be Administered and Reviewed Prior to Annual Fit Test (If no periodic physical examination is administered).

C4-A:

NAME : _____

1. Have you developed any medical problems or symptoms that may limit your ability to use a respirator?
YES NO

2. Have you been treated for a heart or lung condition in the past year? (e.g., heart attack, pneumonia)
YES NO

3. Have you been under treatment by a physician for any other condition in the past year?
YES NO If YES, please describe the condition.

4. Have you had any surgical operation or medical procedure in the past year?
YES NO If YES, please describe procedure.

5. Have you been told by a health care professional, your supervisor, or the respirator program administrator or anyone else that you should be medically reevaluated?
YES NO

6. Has there been a change in workplace conditions, e.g., physical work effort, protective clothing, temperature, that has resulted in a substantial increase in the physical burden placed on you?
YES NO

7. Have you had chest pain or pressure?
YES NO If YES, please describe this condition.

8. Have you had to remove a respirator because of feeling "closed-in" (Claustrophobic) or short of breath?
YES NO If YES, please describe this condition.

9. What medications are you currently taking?

It is your responsibility to report any change in health status that may affect your ability to use a respirator to your Supervisor.

Signature _____

Date _____

C4-B: Medical Department Copy of PLHCP's Recommendation

Detach or place on separate form or transmit electronically

PLHCP Determination: Circle a Class

Class 1: No restriction on respirator use.

Class 2: Conditional Use: Some specific use restrictions or medical requirements (e.g., moderate/light work only, PAPR only, no SCBA use, annual medical evaluation, age specific medical evaluation).

Class 3: No respirator use permitted (permanent).

Class 4: No respirator use permitted (temporary) – you require additional medical evaluation and/or treatment and physician evaluation (see above).

Class 5: Additional temporary/permanent (non-respirator) restrictions – (e.g., no heavy lifting, no climbing, no heat stress).

Restrictions/Additional Medical Requirements/Findings on Targeted Evaluation,
Comments: _____

PLHCP
Signature _____

Date _____

CONFIDENTIAL MEDICAL INFORMATION

**This form is given to the employee ONLY and retained by the medical evaluator.
This information cannot be shared without the written authorization of the employee.**

Annex C5: Employee Copy of PLHCP's Written Recommendation

A.

Medical evaluation has detected no medical conditions that would prevent you from using a respirator

B.

Please note that the following medical conditions (indicated by a check mark) have been identified during your medical evaluation. It is recommended that you discuss the below health problems(s) with your personal physician.

Until these problems are evaluated further, you are temporarily disqualified from performing respirator/heat stress work.

Hearing impairment that requires further evaluation.

Decreased visual acuity: In general 20/40 is desirable for distant vision in one eye with or without correction. Certain jobs have specific vision requirements.

Electrocardiogram (EKG): This test was interpreted to be not within the range of normal. The examining physician will provide you with a copy of your EKG so that you can discuss it with your personal physician.

Pulmonary Function Test (PFT – Breathing Test): This test was interpreted to be significantly below the lower limit of Normal. **If you smoke, it is strongly recommended that you stop.**

Blood Pressure Evaluation:
 $\geq 180/\geq 110$ Your blood pressure is _____
 $\geq 140/\geq 90$

Body Mass Index (BMI) >30. This measurement shows that you are overweight. This may have adverse health consequences.

History of cardiac disease. Please provide your medical evaluator with a copy of your most recent stress test. It must demonstrate functional capacity in "MET's" with the absence of clinically significant arrhythmia, abnormal blood pressure response, and ischemia.

Other _____

C.

PLHCP Determination: Circle a Class

- Class 1:** No restriction on respirator use.
- Class 2:** Conditional Use: Some specific use restrictions or medical requirements (e.g., moderate/light work only, PAPR only, no SCBA use, annual medical evaluation, age specific medical evaluation).
- Class 3:** No respirator use permitted (permanent).
- Class 4:** No respirator use permitted (temporary) – you require additional medical evaluation and/or treatment and physician evaluation (see above).
- Class 5:** Additional temporary/permanent (non-respirator) restrictions – (e.g., no heavy lifting, no climbing, no heat stress).

Restrictions/Additional Medical Requirements/Findings on Targeted Evaluation, Comments:

Date of next medical evaluation _____

PLHCP Signature _____ Date _____

Appendix D: SCBA Inspection Checklist

SCBA(GENERAL) INSPECTION TABLE

If any of the defects listed below are found, have the SCBA repaired before use.

Component	Look For	Pass	Fail
Facepiece Lens	1. Nicks, scratches, or abrasion which could impair visibility		
	2. Deep gouges or crack which could reduce impact resistance		
	3. Anti-fog coating in need of replacement		
Facepiece Rims	1. Deformed, cracked or broken rims		
	2. Loose rim screw(s)		
Facepiece Head strap	1. Abrasions or nicks		
	2. Deterioration from age, heat or contamination		
Facepiece Skirt	1. Cuts, gouges, or punctures		
	2. Tears or nicks in the sealing area		
	3. Deterioration from age, heat or contamination		
Facepiece Inlet Nozzle	1. Heat damage		
	2. Loose cover screw(s)		
	3. Loose hose clamp		
	4. Damaged exhalation valve seat		
	5. Sticking exhalation valve. (Exhale a few times to test)		
Low Pressure Hose	1. Cuts, nicks or punctures		
	2. Age, or heat, induced cracking, checking or hardening		
	3. Crushed, broken, or cracked connector		
Regulator(s) & Pressure Gauge	1. Heat damage or dents to case and cover		
	2. O-ring dry & brittle		
	3. Damaged threads		
	4. Pressure gauge lens unreadable; gauge needle deformed		
	5. Regulator honks, squeaks or whistles when in use.		
	6. Pressure gauge reading does not match cylinder reading when charged.		

SCBA(GENERAL) INSPECTION TABLE

If any of the defects listed below are found, have the

SCBA repaired before use.			
Component	Look For	Pass	Fail
Facepiece Lens	1. Nicks, scratches, or abrasion which could impair visibility		
	2. Deep gouges or crack which could reduce impact resistance		
	3. Anti-fog coating in need of replacement		
Facepiece Rims	1. Deformed, cracked or broken rims		
	2. Loose rim screw(s)		
Facepiece Head strap	1. Abrasions or nicks		
	2. Deterioration from age, heat or contamination		
Facepiece Skirt	1. Cuts, gouges, or punctures		
	2. Tears or nicks in the sealing area		
	3. Deterioration from age, heat or contamination		
Facepiece Inlet Nozzle	1. Heat damage		
	2. Loose cover screw(s)		
	3. Loose hose clamp		
	4. Damaged exhalation valve seat		
	5. Sticking exhalation valve. (Exhale a few times to test)		
Low Pressure Hose	1. Cuts, nicks or punctures		
	2. Age, or heat, induced cracking, checking or hardening		
	3. Crushed, broken, or cracked connector		
Regulator(s) & Pressure Gauge	1. Heat damage or dents to case and cover		
	2. O-ring dry & brittle		
	3. Damaged threads		
	4. Pressure gauge lens unreadable; gauge needle deformed		
	5. Regulator honks, squeaks or whistles when in use.		
	6. Pressure gauge reading does not match cylinder reading when charged.		

SCBA(GENERAL) INSPECTION TABLE Cont.

If any of the defects listed below are found, have the SCBA repaired before use.

Component	Look For	Pass	Fail
Audible Alarm & Intermediate Pressure Hose	1. Dented or deformed whistle		
	2. Debris or water in whistle		
	3. Hose or fittings corroded, cracked, or leaking		
	4. Abrasion of hose		
	5. Damaged threads on C.G. A. hand wheel		
	6. Damaged O-ring and groove on C.G.A. Nipple		
	7. Missing O-ring on C.G.A. Nipple		
	8. Alarm does not sound when system is bled down.		
Harness Frame	1. Cylinder band and latch not working properly		
	2. Cylinder not secured in frame and band		
	3. Bent or broken frame		
	4. Webbing color change, excessive wear, fraying, cuts, or broken stitching		
	5. Buckles damaged or corroded		
	6. Loose hardware		
Air Cylinder & Valve	1. Dents, gouges, blister, or cuts		
	2. External damage to cylinder valve		
	3. Smooth operation of valve hand wheel		
	4. Loose screws securing rubber guard on cylinder valve		
Electronics	1. Battery HUD and PASS		
	2. All LED's Light up		
	3. HUD and Pass Turn on when connected to Facepiece		
	4. Damage to wires or connector pins.		
Inspected By:	Date:		

Appendix E: SCBA Maintenance Records

- 1. Permanent Backpack/Regulator Records**
- 2. Permanent Facepiece Records**
- 3. Permanent Cylinder Records**

Appendix F: SCBA Training Records and References

- 1. Training Documentation**
- 2. SCBA Proficiency Drill**
- 3. SCBA Written Test**
- 4. Training Reference Material**

SCBA TRAINING DOCUMENTATION

Employee Name:				
Topic	Hours	Test Score	Date	Instructor

Procedure: The examination and timing will start when the student, either verbally or by conduct, performs any step of the examination. The time will stop when the student either verbally or by clapping their hands together, indicates the donning sequence is complete. After the proctor has completed an inspection of the donned SCBA, the student when directed by the proctor, will complete the un-timed removal procedures. The removal portion of the examination will end when the student, either verbally or by conduct, indicates that portion of the examination has been completed. If desired, the student will be allowed one or more practice dons. This will not be credible towards the student's grade.

Scoring: Points will be deducted for each step omitted, performed improperly, or performed out of sequence. Numbered procedures **must** be performed in order and lettered procedures may be performed in any order within a numbered step without a loss of points. Steps designated with an asterisk (*) must be properly performed for the student to pass the examination. The donning portion must be completed within 60 seconds. Two points will be deducted from the student's score for every second over one minute. A score of 100 is required to pass this examination. If the student does not achieve a score of 100 they may retake the exam after practice. They may retake the exam until a passing score is achieved.

A student who drops their SCBA or completes the examination in such a manner that would jeopardize the safety of the wearer in a firefighting environment (i.e. the face piece seal is broken, the low pressure alarm fails to sound when pressurized, the cylinder valve is not fully opened, or critical safety equipment is not donned), will receive a score of zero.

Special Notes: Prior to starting the examination the student will be wearing their turnout coat and fire resistive hood. Turnout pants are not required to be worn for this examination. The helmet and gloves may be carried to the examination.

Prior to starting the examination the student will be allowed to prepare their equipment for donning. The student will be allowed to ask questions concerning the examination. Scoring accommodations will be made for variations in SCBA design at the discretion of the proctor. Once the examination begins the proctor will not answer any questions or intercede in any way except to stop the examination if a safety violation occurs which could injure personnel or damage equipment. In this event a score of zero will be given.

SCBA Proficiency Examination

Student Name: _____

Evaluator: _____

Steps and Procedures	Points
All steps designated with an asterisk (*) must be properly performed or the student fails the entire examination	
1) Raise and fasten turn out collar	5
2) Place SCBA at test site and prepare for donning a) Place facepiece on a clean surface	4
3) Tilt gauge end of cylinder upwards (Timing starts) a) Check and state the cylinder pressure indicated on the cylinder pressure gauge	*
4) Fully open the cylinder valve and ensure audio alarm sounds	*
5) Grasp the sides of the cylinder with both hands a) Lift assembly over head and on to back	5 4
6) Connect and tighten shoulder straps a) There should be no twists in straps	* 2
7) Connect and tighten remaining straps a) Waist strap b) Chest strap (if equipped) c) There should be no twists in straps	* 3 2
8) Place face piece neck strap over and behind the head outside of the turn-out collar (if equipped)	3
9) Place the face piece on the face a) Tighten facepiece harness straps b) Start by tightening the lowest straps and work up	* * *
10) Test face piece seal a) Place regulator opening against either hand b) Inhale to check face piece seal, mask must collapse against face	* 5 *
If improper seal is detected repeat steps 8 a) and b)	
11) Test operation of exhalation valve a) Place regulator opening against either hand b) Exhale to check operation of the exhalation valve and face piece seal	5 5
12) Pull fire resistive hood up behind and over head a) Covering all skin on the face and neck	5 3
13) Place helmet on head a) Secure chinstrap under chin b) Must not pass over; regulator, or exhalation valve c) Tighten chin strap	* * * *
14) Connect the regulator to the face piece a) Coupling must be fully and properly tightened b) There should be no escape of air	* * 5
15) Check and state the pressure indicated on the remote pressure gauge as equipped	2
16) Put on gloves and indicate by clapping hands that donning is completed a) covering all skin on wrist and forearm.	* 2
17) End of timed portion of examination	
18) Remove SCBA	
a) Shut off/reset 2 nd stage regulator as needed	3
b) Separate facepiece from regulator	3
c) Remove gloves	2
d) Remove helmet	2

e) Remove fire resistive hood	2
f) Loosen facepiece harness straps	2
g) Remove facepiece and place on a clean surface	3
h) Disconnect waist strap	2
i) Disconnect chest strap if equipped	2
j) Loosen shoulder straps	2
k) Remove the SCBA from back and place on ground without dropping or striking the regulator on any object	*
l) Close cylinder valve	4
m) Extend facepiece harness straps	3
n) Extend SCBA harness straps	3
o) Bleed pressure from regulators as needed	4
p) Secure and prepare regulators for next use	3
Procedures Points Deducted	
Total time	
Over 60 second point deduction – 2 points /sec.	
Points Possible	100
Points deducted	
Final Score	
Comments:	

USFS

SELF CONTAINED BREATHING APPARATUS

TEST

1) The Self Contained Breathing Apparatus (SCBA) consists of 4 major component groups:

- A.
- B.
- C.
- D.

2) At _____PSI for a low pressure and at_____PSI for a high pressure unit you will have approximately _____ minutes of air.

3) The audible alarm begins to sound when the remaining service duration has dropped to approximately 20% - 25%.

True or False

4) If the primary first stage regulator fails, the audible alarm will sound at a faster rate than when it sounds signaling low cylinder pressure.

True or False

5) What should you do if your alarm begins sounding?

6) It is important to connect the first stage regulator to the cylinder valve opening _____.

- A. Tightly with a wrench
- B. Handtight
- C. Loosely so there is some play

7) How often should the facemask be cleaned?

- A. Weekly
- B. Once a day
- C. After each use
- D. When inspected, found to be dusty/dirty
- E. C & D

- 8) The steps in cleaning and storing a facemask include all but one:
- A. Warm water - 140 degrees farenheit or less
 - B. Mild liquid detergent - NO AMMONIA
 - C. Clean cotton rag - lint free, or clean sponge
 - D. Rinse thoroughly - especially exhalation valve
 - E. Air dry completely
 - F. Spit into lense to reduce fogging
 - G. Check exhalation valve
 - H. Repack into protective bag
- 9) When should the SCBA be inspected?
- A. Daily
 - B. Weekly
 - C. Monthly
 - D. After each use
 - E. On a scheduled basis
 - F. All of the above
- 10) All SCBA's must be stored ready to _____.
- 11) The first step when donning an SCBA, is to check that the air cylinder is full and turned on.
- True or False
- 12) Before donning an SCBA, always check the _____.
- A. Manufacturers Warranty
 - B. Air supply on all gauges
 - C. Quality of the compressed breathing gas
- 13) Tighten face-mask straps uniformly from the _____.
- A. Bottom to top
 - B. Top to bottom
 - C. Either method is satisfactory
- 14) Toxic gases can leak into a facemask that has been tightened _____.
- A. Too tightly
 - B. Too loosely
 - C. Either too tightly or too loosely

- 15) When donning the SCBA, which straps should be tightened first?
- 16) When should the Structure Helmet be put on your head and secured?
- A. After all Self Contained Breathing Apparatus is on and secured.
 - B. After the facepiece and nomex hood have been put in place.
 - C. A & B
- 17) What should you check before the removal of the first stage regulator/high pressure hose when changing cylinders.
- 18) Name the steps taken when changing cylinders:
- A.
 - B.
 - C.
 - D.
 - E.
 - F.
 - G.
 - H.
- 19) When the cylinder is completely full and placed in service the airflow to the face-piece need not be checked.
- True or False
- 20) Turn up the Turnout Coat collar before donning a SCBA, to get it out of the way of the cylinder pack straps.
- True or False
- 21) Check all harness straps for cracks, tears or dry rot just before donning a SCBA.
- True or False

22) When changing cylinders, close the cylinder valve, bleed pressure from the 2nd stage regulator and disconnect the 1st stage regulator from the cylinder.

True or False

23) What should you do if you do not hear the alarm device when turning the cylinder valve on?

24) When should the 2nd stage BYPASS be used?

- A. To bypass the 2nd stage regulator in emergency failure
- B. De-fog mask
- C. Claustrophobia feeling
- D. All the above

25) List the pieces of the facemask that are inspected?

- A.
- B.
- C.
- D.
- E.
- F.
- G.
- H.

26) When donning the facemask what should you always check?

- A.
- B.

27) When operating the cylinder valve, what should you check before donning the equipment?

- 28) Before storing the SCBA unit after use, you should ____.
- A. Extend straps on facemask, clean facemask, place in protective bag
 - B. Extend all straps on cylinder harness
 - C. Check to see if cylinder needs replacing
 - D. Wipe cylinder and apparatus clean from debris and dirt
 - E. All of the above
- 29) Who decides to use the SCBA?
- 30) Per Region 5 Policy, the SCBA will be used _____.
- A. During vehicle fires
 - B. Whenever entering a potentially hazardous atmospheric environment
 - C. At all times
 - D. A & C
 - E. A & B
- 31) How often should our composite cylinders be hydrostatically tested?
- 32) What could influence the actual service duration of the unit?
- A. The users physical condition
 - B. The level of exertion
 - C. The initial cylinder pressure
 - D. The ambient temperature
 - E. All of the above

33) Define:

Cylinder Pressure-

Free Flow-

Intermediate Pressure-

LPM (Liters per minute)-

Positive Pressure-

Ambient Pressure-

PSI (lbs. per square inch)-

Pressure-

Restrictor-

Instructors Key - Answers

USFS

SELF CONTAINED BREATHING APPARATUS

TEST

1) The Self Contained Breathing Apparatus (SCBA) consists of 4 major component groups:

- A. **BACK PACK & CYLINDER ASSEMBLY**
- B. **FIRST STAGE REGULATOR - AUDIO ALARM**
- C. **SECOND STAGE REGULATOR - PRESSURE READOUT**
- D. **FACEMASK**

2) At **2216** PSI for a low pressure and at **4500** PSI for a high pressure unit you will have approximately **20-30** minutes of air.

3) The audible alarm begins to sound when the remaining service duration has dropped to approximately 20% - 25%.

True or False

4) If the primary first stage regulator fails, the audible alarm will sound at a faster rate than when it sounds signaling low cylinder pressure.

True or False

5) What should you do if your audible alarm begins sounding?

EXIT TO A SAFE PLACE

6) It is important to connect the first stage regulator to the cylinder valve opening **B**.

- A. Tightly with a wrench
- B. Handtight**
- C. Loosely so there is some play

7) How often should the facemask be cleaned? **E**

- A. Weekly
- B. Once a day
- C. After each use
- D. When inspected, found to be dusty/dirty
- E. C & D**

8) The steps in cleaning and storing a facemask include all but one: **F**

- A. Warm water - 140 degrees fahrenheit or less
- B. Mild liquid detergent - NO AMMONIA
- C. Clean cotton rag - lint free, or clean sponge
- D. Rinse thoroughly - especially exhalation valve
- E. Air dry completely
- F. Spit into lense to reduce fogging**
- G. Check exhalation valve
- H. Repack into protective bag

9) When should the SCBA be inspected? **F**

- A. Daily
- B. Weekly
- C. Monthly
- D. After each use
- E. On a scheduled basis
- F. All of the above**

10) All SCBA's must be stored ready to **DON (OR USE)**

11) The first step when donning an SCBA, is to check that the air cylinder is full and turned on.

True or False

12) Before donning an SCBA, always check the **B** .

- A. Manufacturers Warranty
- B. Air supply on all gauges**
- C. Quality of the compressed breathing gas

13) Tighten face-mask straps uniformly from the **A** .

- A. Bottom to top**
- B. Top to bottom
- C. Either method is satisfactory

14) Toxic gases can leak into a facemask that has been tightened **B** .

- A. Too tightly
- B. Too loosely**
- C. Either too tightly or too loosely

15) When donning the SCBA, which straps should be tightened first?

SHOULDER

- 16) When should the Structure Helmet be put on your head and secured? **_C**
- A. After all Self Contained Breathing Apparatus is on and secured.
 - B. Before donning SCBA, it is placed around neck with chin strap.
 - C. A & B**
- 17) What should you check before the removal of the first stage regulator/high pressure hose when changing cylinders. **_THAT THE CYLINDER VALVE IS OFF AND THE PRESSURE IS BLED OFF THROUGH THE 2ND STAGE REGULATOR**
- 18) Name the steps taken when changing cylinders:
- A. TURN OFF CYLINDER VALVE**
 - B. BLEED OFF THE PRESSURE AT THE 2ND STAGE REGULATOR**
 - C. DISCONNECT 1ST STAGE REGULATOR**
 - D. RELEASE CLAMP LOCK AND REMOVE CYLINDER, REPLACE WITH FULL CYLINDER**
 - E. LOCK CYLINDER WITH CYLINDER CLAMP**
 - F. CHECK O-RING BEFORE ATTACHING 1ST STAGE REGULATOR TO CYLINDER VALVE**
 - G. ATTACH 1ST STAGE REGULATOR TO CYLINDER - THREAD HAND TIGHT**
 - H. CHECK FOR LEAKS, COMPARE GAUGES, TEST ALARMS**
- 19) When the cylinder is completely full and placed in service the airflow to the face-piece need not be checked.
- True or **False**
- 20) Turn up the Turnout Coat collar before donning a SCBA, to get it out of the way of the cylinder pack straps.
- True** or False
- 21) Check all harness straps for cracks, tears or dry rot just before donning a SCBA.
- True or **False**

22) When changing cylinders, close the cylinder valve, bleed pressure from the 2nd stage regulator and disconnect the 1st stage regulator from the cylinder.

True or False

23) What should you do if you do not hear the alarm device when turning the cylinder valve on?
FIRST CHECK TO SEE IF THE CYLINDER IS FULL, THEN

YOU SHOULD RED TAG THE UNIT AND SEND IT IN FOR REPAIRS

24) When should the 2nd stage BYPASS be used? **_D**

- A. To bypass the 2nd stage regulator in emergency failure
- B. De-fog mask
- C. Claustrophobia feeling
- D. All the above**

25) List the pieces of the facemask that are inspected?

- A. __SPEAKING DIAPHRAM**
- B. __EXHALATION VALVE**
- C. __LENS**
- D. __HEADSTRAPS & BUCKLES**
- E. __MASK RIMS & BOLTS**
- F. __FACEMASK SKIRT**

26) When donning the facemask what should you always check?

- A. __CHECK FOR LEAKS USING THE FIT TEST**
- B. __CHECK EXHALATION VALVES WORKING CONDITION**

27) When operating the cylinder valve, what should you check before donning the equipment?
PRESSURE GAUGES ON THE CYLINDER AND ON THE REMOTE CYLINDER PRESSURE GAUGE ARE CONSISTANT, AND THE AUDIO ALARM FUNCTIONS .

- 28) Before storing the SCBA unit after use, you should **E** .
- A. Extend straps on facemask, clean facemask, place in protective bag
 - B. Extend all straps on cylinder harness
 - C. Check to see if cylinder needs replacing
 - D. Wipe cylinder and apparatus clean from debris and dirt
 - E. All of the above**

- 29) Who decides to use the SCBA?
THE MODULE LEADER

- 30) Per Region 5 Policy, the SCBA will be used _____.
- A. During vehicle fires
 - B. Whenever entering a potentially hazardous atmospheric environment
 - C. At all times
 - D. A & C
 - E. A & B**

- 31) How often should our Composite cylinders be hydrostatically tested?
EVERY 5 YEARS if manufactured after 2001

- 32) What could influence the actual service duration of the unit? **E**
- A. The users physical condition
 - B. The level of exertion
 - C. The initial cylinder pressure
 - D. The ambient temperature
 - E. All of the above**

- 33) Define:

Cylinder Pressure- **The pressure of the breathing air inside the cylinder - a maximum of 4500 psi for high pressure unit and 2216 psi for the low pressure unit.**

Free Flow- **A free and unimpeded flow of air, caused by regulator failure**

By Pass Control- **Used in a regulator failure to obtain a comfortable flow of air and to de-fog the facepiece lense.**

Intermediate Pressure- **Air pressure of approximately 100 psi after passing through the first stage regulator.**

LPM (Liters per minute)- **The rate of flow of air.**

Positive Pressure- **Greater pressure in the face mask than the atmospheric pressure.**

Ambient Pressure- **The pressure outside the face mask. Ambient pressure can affect air supply time.**

PSI (lbs. per square inch)- **The pressure of the air.**

Pressure- **PSI, in SCBA, directly related to the amount of air remaining in the cylinder.**

Regulator- **Reduces air pressure from the cylinder to a usable pressure.**

TRAINING REFERENCE MATERIAL

Training material which can assist in the development of local training programs for the use of self contained breathing apparatus can be obtained from:

Delmar Cengage Learning
5 Maxwell Drive
Clifton Park, New York 12065-2919
Phone: (800) 648-7450
Fax: (518) 881-1262

Firefighters Handbook, Essentials of Firefighting and Emergency Response

International Fire Service Training Association
Oklahoma State University
Fire Protection Publications
930 North Willis
Stillwater, Oklahoma 74078-0811
Phone: (800)-654-4055
Fax: (800)-744-8204

Essential of Firefighting and Fire Department Operations

Appendix G: User Seal Check Procedures

Appendix G: User Seal Check Procedures (Mandatory)

The individual who uses a tight-fitting respirator is to perform a user seal check to ensure that an adequate seal is achieved each time the respirator is put on. Either the positive and negative pressure checks listed in this appendix, or the respirator manufacturers recommended user seal check method will be used. User seal checks are not substitutes for qualitative or quantitative fit tests.

1. Face piece Positive and/or Negative Pressure Checks.
 - (a). Positive pressure check: Close off the exhalation valve and exhale gently into the facepiece. The face fit is considered satisfactory if a slight positive pressure can be built up inside the facepiece 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.
 - (b). Negative pressure check.: Close off the inlet opening by covering with the palm of the hand, inhale gently so that the facepiece collapses slightly, and hold the breath for ten seconds. If the facepiece remains in its slightly collapsed condition and no inward leakage of air is detected, the tightness of the respirator is considered satisfactory.
2. Manufacturer's Recommended User Seal Check Procedures: The respirator manufacturer's recommended procedures for performing a user seal check may be used instead of the positive and/or negative pressure check procedures provided that the employer demonstrates that the manufacturer's procedures are equally effective.

Appendix H: Respirator Cleaning Procedures

Appendix H: Respirator Cleaning Procedures (Mandatory)

These procedures are provided for employee use when cleaning respirators. They are general in nature, and the employee as an alternative may use the cleaning recommendations provided by the manufacturer of the respirators, provided such procedures are as effective as those listed herein. Equivalent effectiveness simply means that the procedures used must accomplish the same objectives.

1. Procedures for Cleaning Respirators.

- (a). Wash components in warm (43°C [110°F] maximum) water with a mild detergent or with a cleaner recommended by the manufacturer. A stiff bristle (not wire) brush may be used to facilitate the removal of dirt.
- (b). Rinse components thoroughly in clean, warm (43°C [110°F] maximum), preferably running water. Drain.
- (c). When the cleaner used does not contain a disinfecting agent, respirator components should be immersed for two minutes in one of the following:
 - (1). Chlorine bleach solution made by adding approximately one tablespoon bleach to one gallon of water at 43°C (110°F); or,
 - (2). other commercially available cleansers of equivalent disinfectant quality when used as directed, if their use is recommended or approved by the respirator manufacturer.
- (d). Rinse components thoroughly in clean, warm (43°C [110 °F] maximum), running water. Drain. The importance of thorough rinsing cannot be overemphasized. Some disinfectants may cause deterioration of rubber or corrosion of metal parts if not completely removed.
- (e). Components should be hand-dried with a clean lint-free cloth or air-dried. If air dried allow 24 hours of non-use for drying to occur.
- (f). Test the respirator to ensure that all components work properly.

Appendix I. Care, Maintenance and Documentation of Turnout/Bunker Gear

Turnouts/ Bunker Gear will be issued with an expected life of ten years. After ten years the manufacturer recommends replacement. Turnouts that meet the following specifications may be kept in service:

- 1) The turnout must be inspected, repaired and have the vapor barrier pressure tested by an independent service provider (ISP) every two years beyond the ten year recommended life of the garment.
- 2) Turnouts shall be re-evaluated and inspected after exposure to extreme heat, contact with hazardous materials or whenever use warrants evaluation and inspection to insure no damage or contamination has occurred to the Nomex shell, reflective materials or the vapor barrier.

Note: Training exercises may warrant cleaning and/or testing.

Cleaning:

Cleaning shall be performed annually on all issued turnouts in compliance with the manufactures and NFPA 1851 standards for cleaning to assure that no damage to the Nomex shell, reflective striping, heat and vapor barrier occurs as a result of the cleaning.

Cleaning will also occur after the garment is used during an incident. User shall determine if an incident warrants cleaning (i.e. traffic control at a vehicle accident would not warrant cleaning, assisting in cleaning up the accident site might).

Procedures for cleaning:

Removable liners shall be removed and washed separately from shells.

Use only front loading washing machines with a G force of no higher than 100.

Detergent can be specifically for turnouts or a regular mild liquid detergent having a ph. level of between 6.0 and 10.5 and containing no chlorinated solvents, bleach or bleach alterative.

Water temperature shall not exceed 105 degrees.

If garments are contaminated with pathogens or carcinogens wash separately then run a wash cycle with 1 cup of bleach to decontaminate washing machine.

All washes shall have two complete rinse cycles (for both washing and disinfecting).

Garments should be air dried in a shaded area out of the direct sun light. If placed in a drier select the air only or the lowest heat setting.

Consult the manufactures cleaning recommendations.

Record keeping:

Records of the cleaning, repairs and maintenance shall be kept for each garment.

Retirement/replacement:

Each forest shall decide how much they want to invest on testing and repairs to the garment before replacement. Retired garments shall be taken out of service and labeled in such a way that they could not be placed back into service. They may be used for non-hazardous training exercises, **NO LIVE FIRE DRILLS!**

GLOSSARY OF TERMS

1. CFR - Code of Federal Regulations
2. Exposure - An exposure to a concentration of an airborne contaminant (immediately dangerous to life and health) that would occur if the employee were not using respiratory protection (SCBA/PPE).
3. Hazardous atmospheric environment - Any atmosphere firefighters must enter where toxic or hazardous smoke or air exists requiring the use of respiratory protection.
4. Spirometry Test - Medical lung volume capacity test.
5. GPM-Gallons per minute

Appendix J: REGIONAL JOB HAZARD ANALYSIS

<p align="center">U.S. Department of Agriculture Forest Service</p>	<p align="center">1. WORK PROJECT/ACTIVITY ALL RISK INCIDENT MANAGEMENT THREATENING NATIONAL FOREST WILDLANDS</p>	<p align="center">2. LOCATION</p> <p align="center">Pacific Southwest Region</p>	<p align="center">3. UNIT</p> <p align="center">Region 5</p>
<p align="center">JOB HAZARD ANALYSIS (JHA) References-FSH 6709.11 and -12 (Instructions on Reverse)</p>	<p align="center">4. NAME OF ANALYST</p> <p align="center">Peter Tolosano</p>	<p align="center">5. JOB TITLE</p> <p align="center">Regional Fire Operations Risk Management Officer</p>	<p align="center">6. DATE PREPARED</p> <p align="center">02/21/2012</p>
<p align="center">7. TASKS/PROCEDURES</p>	<p align="center">8. HAZARDS</p>	<p align="center">9. ABATEMENT ACTIONS Engineering Controls * Substitution * Administrative Controls * PPE</p>	
<p>Engaging in all risk initial attack actions, due to an expanding Wildland/urban interface and increasing interaction on multi-jurisdictional incidents, which are absolutely necessary to protect life or prevent the spread of a fire to the Wildland.</p>	<p>Initial attack exposure to known, unknown and/or suspected hazards or atmospheres which may rapidly become hazardous, as potential ignition sources, threatening National Forest Wildland, such as:</p> <ul style="list-style-type: none"> • Active or potential fire areas; • volatile, gaseous, or explosive areas; • visible and potentially hazardous smoke in the atmosphere; • toxic products are present, suspected of being present or could rapidly be released without warning from vehicle, dump, dumpster, trash, and gas/oil/LPG fires and accidents, structure fire protection assignments; • unknown smoke reports/responses, • other non-wildland fuel fires, and hazardous material incidents. • UPS and other alternative mail delivery companies carrying unknown materials. 	<ul style="list-style-type: none"> • Firefighter and public safety is the first and utmost priority and consideration, at all times, while conducting fire suppression activities. • Employees whose primary position is associated with initial attack engines in Region 5 that may place the employee in a potentially hazardous atmosphere, or one that is of Immediately Dangerous to Life and Health (IDLH), shall be provided with and use all necessary PPE (6709.11-99-1 pg. 70-19). Do not modify PPE. <ol style="list-style-type: none"> 1. Forest service-approved fire shelter 2. Forest Service-approved hard hat 3. Eye protection 4. Hearing protection (85 db. and above) 5. Long-sleeved shirt and pants of Forest Service-approved flame-resistant fabric. 6. Forest Service-approved leather non-gauntlet gloves 7. Heavy-duty, cut-resistant or leather, waterproof or water-repellent, 8-inch high laced boots with nonskid soles (Condition of Hire Policy – FSM 6716.03) <p>Including, Self-contained Breathing Apparatus (SCBA) (FSM 5130.3 pg.16)</p> <ol style="list-style-type: none"> 1. Open-circuit 2. Positive pressure • Acquisition, appropriate annual training, proper use, employee health surveillance programs, inspection, storage, and maintenance of SCBA must comply with the National Fire Protection Association Standard, NFPA-1981 and 29 CFR 1910.134 • Employees using SCBA shall be provided with tactical direction to facilitate task accomplishment in a safe, efficient, and effective manner. • If SCBA is not available, avoid smoke from the hazardous exposure sources. • 	

Mobilization of initial attack resources.	Hazardous or potentially hazardous atmosphere.	<ul style="list-style-type: none"> Dispatch will be based on reporting data, potential threat to life, property and wildland resources, incident location, expected fire behavior, closest available initial attack resources, pre-planned area dispatch, mutual aid agreements, and requests from the Incident Commander.
Initial observation and size-up by the Incident Commander or Module Leader.	Inhalation or absorption exposure to a hazardous atmosphere or potentially hazardous atmosphere, including chemical releases, smoke from burning synthetics, petroleum distillates, benzenes and acids, oxygen deficient atmosphere, chemical fumes, and other unusual hazards.	<ul style="list-style-type: none"> Incident Commander/Module Leader shall remain a safe distance from the hazard during size-up or wear full PPE for eyes, face, head, torso and extremities while in a position of exposure or potential exposure to the hazardous situation. PPE shall include protective clothing, shields and barriers, including firefighter safety helmet with adjustable headband, lined turn out jacket and trousers, fire resistant boots, lined firefighter gloves, and SCBA. Incident Commander/Module Leader will initiate actions to the level of the crew's training, capability, PPE and safety. Do not attempt to take any action beyond your level of training. Personnel are expected to utilize SCBA whenever the need for respiratory protection is indicated. Stay up wind of the smoke when possible.
Donning SCBA personal respiratory protective equipment.	<p>Inadequate SCBA face piece/mask seal, exposing employee to hazardous or potential hazardous atmosphere.</p> <p>Being struck by other Firefighters Donning SCBA.</p>	<ul style="list-style-type: none"> At a minimum, employees assigned to an engine in Region 5 will comply with facial hair standards which result in an adequate seal of SCBA face piece/mask, as displayed by a negative pressure test, lasting 5 – 10 seconds. NO FACIAL HAIR IN CONTACT WITH THE SEALING SURFACE OF THE FACEPIECE. Hairstyles and facial hair shall be worn in a manner, which assures a proper fit and performance of SCBA respiratory equipment and firefighter safety helmets. Earrings, eye protection, hoods, goggles, spectacle straps and/or temple bars that pass through the sealing surface of the SCBA shall not be worn or used. Prevent conditions such as a growth of beard, side burns, mustache, hairstyles, glasses or eyepieces, clothing or PPE, which interfere with proper adjustment and adequate seal of SCBA equipment. Face piece/mask shall be checked by the wearer each time the employee dons SCBA equipment. Maintain safe spacing to avoid striking other firefighters and equipment.
Initial attack activities	Inhalation or absorption exposure to a hazardous atmosphere or potentially hazardous atmosphere, including chemical releases, smoke from burning synthetics, petroleum distillates, benzenes and acids,	<ul style="list-style-type: none"> Stay up wind out of the smoke when possible. At least two initial attack individuals, wearing suitable PPE, shall work together, maintaining voice or hand signal communications at all times. The Incident Commander/Module Leader will maintain scene control and monitor the progress of the initial attack tactical team. SCBA wearers shall not remove the SCBA respiratory equipment while

	oxygen deficient atmosphere, chemical fumes, and other unusual hazards by personnel engaged in all risk initial attack activities.	<p>in a hazardous atmosphere.</p> <ul style="list-style-type: none"> • A third backup SCBA equipped person, with suitable PPE and necessary rescue equipment, shall be available in order to effect immediate support or rescue of the tactical team in the event of an emergency. • The decision to remove SCBA will be made by the Incident Commander/Module Leader, once the hazardous atmosphere is no longer present. • There will be a minimum of 3 SCBA per Type III engine module. 	
Monitoring initial attack activities.		<ul style="list-style-type: none"> • Monitor tactical team progress. 	
Emergency Evacuation Procedures (EEP)	Illness/Injury	<ul style="list-style-type: none"> • Activate EMS by calling your local Emergency Communication Center via radio OR dial 9-1-1. • Refer to Emergency Evacuation Instructions on the next page. • Render first aid to sick or injured until relieved by a higher-level medical responder. Do not abandon the patient. • Use Blood borne Pathogen precautions. • Use care when moving patients and transporting the injured. • Maintain communications. • Notify your supervisor. • Complete necessary paperwork. 	
10. LINE OFFICER SIGNATURE		11. TITLE Forest Supervisor	12. DATE

Previous edition is obsolete

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JHA Instructions (References-FSH 6709.11 and .12)

The JHA shall identify the location of the work project or activity, the name of employee(s) involved in the process, the date(s) of acknowledgment, and the name of the appropriate line officer approving the JHA. The line officer acknowledges that employees have read and understand the contents, have received the required training, and are qualified to perform the work project or activity.

Blocks 1, 2, 3, 4, 5, and 6: Self-explanatory.

Block 7: Identify all tasks and procedures associated with the work project or activity that have potential to cause injury or illness to personnel and damage to property or material. Include emergency evacuation procedures (EEP).

Block 8: Identify all known or suspect hazards associated with each respective task/procedure listed in block 7. For example:

- a. Research past accidents/incidents.
- b. Research the Health and Safety Code, FSH 6709.11 or other appropriate literature.
- c. Discuss the work project/activity with participants.
- d. Observe the work project/activity.
- e. A combination of the above.

Block 9: Identify appropriate actions to reduce or eliminate the hazards identified in block 8. Abatement measures listed below are in the order of the preferred abatement method:

- a. Engineering Controls (the most desirable method of abatement).
For example, ergonomically designed tools, equipment, and furniture.
- b. Substitution. For example, switching to high flash point, non-toxic solvents.
- c. Administrative Controls. For example, limiting exposure by reducing the work schedule; establishing appropriate procedures and practices.
- d. PPE (least desirable method of abatement). For example, using hearing protection when working with or close to portable machines (chain saws, rock drills, and portable water pumps).
- e. A combination of the above.

Block 10: The JHA must be reviewed and approved by a line officer. Attach a copy of the JHA as justification for purchase orders when procuring PPE.

Blocks 11 and 12: Self-explanatory.

Emergency Evacuation Instructions (Reference FSH 6709.11)

Work supervisors and crewmembers are responsible for developing and discussing field emergency evacuation procedures (EEP) and alternatives in the event a person(s) becomes seriously ill or injured at the worksite.

Be prepared to provide the following information:

- a. Nature of the accident or injury (avoid using victim's name).
- b. Type of assistance needed, if any (ground, air, or water evacuation).
- c. Location of accident or injury, best access route into the worksite (road name/number), identifiable ground/air landmarks.
- d. Radio frequencies.
- e. Contact person.
- f. Local hazards to ground vehicles or aviation.
- g. Weather conditions (wind speed & direction, visibility, temperature).
- h. Topography.
- i. Number of individuals to be transported.
- j. Estimated weight of individuals for air/water evacuation.

The items listed above serve only as guidelines for the development of emergency evacuation procedures.

JHA and Emergency Evacuation Procedures Acknowledgment

We, the undersigned work leader and crewmembers, acknowledge participation in the development of this JHA (as applicable) and accompanying emergency evacuation procedures. We have thoroughly discussed and understand the provisions of each of these documents:

SIGNATURE	DATE	SIGNATURE	DATE
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_____	_____	_____	_____
Work Leader			
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

FIELD MEDICAL EVACUATION PLAN
Mendocino National Forest

Project Name:		Forest:		District:	
Date:		Incident Number:		Plan Prepared By:	
<p>Qualified First Responders or the most senior qualified medical provider will provide patient assessment and first aid. Evacuation of serious injuries will be coordinated with the Modoc Emergency Communication Center. Minor injuries will be treated, and transported by vehicle to a medical facility as necessary.</p>					
Contact					
Contact:		Phone Number:			
Frequency	Rx:		Tx:	Tone:	
Alternate Contact:		Phone Number:			
Injury Information					
Nature of Injury: Avoid using names					
Number to Transport:		Estimated Weights:			
Project Location					
Legal:		Latitude:		Longitude:	
Narrative: including major landmarks or cross roads					
Hazards: To ground or aviation resources		Weather Conditions: Wind speed and direction, visibility, temperature			
Closest Helispot Location					
Legal:		Latitude:		Longitude:	
Narrative: including major landmarks or cross roads					
Medical Facility					
Nearest Facility:		Phone Number:			
Travel Time:		Address:			
Directions:					
24-Hour Facility:		Phone Number:			
Travel Time:		Address:			
Directions:					