



SOUTH LYON FIRE DEPARTMENT

Manual of Procedures 403

PERSONAL PROTECTIVE EQUIPMENT

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Approved: Chief Mike Kennedy

I. SCOPE

This procedure applies to all employees required to work in hazardous environments. It was promulgated to establish procedures for the use of protective clothing and equipment to reduce the risk of illness, injury, or death that might result from an employee's exposure to a hazardous environment.

The proper care and maintenance of turnout clothing is a responsibility borne both by the firefighter and the department. NFPA 1851: Standard on Selection, Care, and Maintenance of Structural Firefighting Protective Ensembles, sets specific requirements for the department to ensure minimum procedures for the inspection, cleaning, repair, storage, and retirement of turnout clothing. Specific procedures for care and maintenance generally come from the clothing manufacturer. Nevertheless, it is up to the individual firefighter to be cognizant of the condition of his or her gear and keep that clothing clean and properly maintained.

II. GENERAL

- A. Each employee shall wear protective clothing and use equipment appropriate for the hazards to which he/she is exposed.
- B. Each employee shall properly maintain the protective clothing and equipment that has been issued to him/her and that are carried on the apparatus to which he/she has been assigned.
- C. A washing machine and dryer have been provided at each station to allow members to maintain their work uniforms.
- D. A protective clothing washer has been installed to assist employees in maintaining their turnout coat and pants. Each employee shall clean their structural protective clothing at least once every six months and every time it is contaminated.
- E. Any equipment or protective clothing that is found to be unsafe or inoperable shall be tagged, removed from service immediately, and forwarded to the turn out gear officer for repair.

III. INSPECTION

Firefighters must become familiar with their clothing. This familiarity helps firefighters maintain a sense of awareness when changes have occurred that might affect the clothing's performance. NFPA 1851 indicates that gear should be inspected after each use and go through an advanced inspection at least once a year. While NFPA 1851 permits the department to determine what constitutes "use," it is important to carefully examine gear after the firefighter has been exposed to fire ground contaminants or encountered other hazardous substances.

Some damage will be obvious, such as discoloration of the outer shell — often caused by high heat exposure resulting in the loss of dye. Rips, punctures, opened seams, and loose trim are obvious signs of wear and tear, but several types of damage may be less evident. The best practice for inspecting clothing is to look at its condition often and to take note of any changes. If you cannot determine where degradation or a harmful condition has taken place, it is best to show your clothing to the turnout gear officer. NFPA 1851 does provide field tests to help ascertain the condition of the gear.



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A. Routine Inspection

Conduct a routine inspection of garments after each use. Look for:

- a. Soiling
- b. Contamination
- c. Physical damage
- d. Damaged trim
- e. Damaged closures and hardware

B. Advanced Inspection

This is performed quarterly by the turnout gear officer. Advanced inspection areas include:

- a. Moisture barrier and seam sealing integrity
- b. Fit and coat/pants overlap
- c. Seam integrity including broken or missing stitches
- d. Material integrity for loss of strength due to UV or chemical exposure
- e. Loss or shifting of thermal liner material
- f. Wristlet integrity and functionality
- g. Reflective trim and Velcro integrity, attachment and functionality
- h. Label integrity and legibility
- i. Liner attachment systems
- j. Closure system functionality

IV. CLEANING

Firefighter protective clothing must be kept clean to ensure its proper performance. Dirty gear carries less insulation, is more likely to conduct heat and electricity, lacks liquid shedding properties, and can become potentially flammable. Moreover, many fire ground contaminants are carcinogens and skin toxic chemicals. Turnout clothing needs to be cleaned regularly to prevent these problems. Yet, improper cleaning can also destroy clothing or worsen its protective performance.

There are three types of cleaning — routine, advanced, and specialized cleaning defined in NFPA 1851. Routine cleaning is performed after any fire ground use where soiling has occurred. It involves brushing debris from the clothing, rinsing it with water, and applying spot cleaning as necessary. It is a good idea to inspect the condition of the clothing during routine cleaning.

Advanced cleaning is more thorough and must be done at least every six months or more frequently, depending on the use and condition of the clothing. Advanced cleaning involves hand washing the clothing in a utility sink or machine washing. In either case, proper procedures must be followed. Machine washing is best done in a front loading washer/extractor to limit damage caused by top-loading machine agitators.

A. Machine Washing Procedure

- a. Do not overload the machine.
- b. Pre-treat if necessary.
- c. Fasten all closures, including pocket closures, hook and loop, snaps, zippers, hooks and dees.
- d. Only use the provided detergent. The detergent needs to be shaken prior to pouring, and there is an 8 ounce measuring cup for the correct portion.
- e. Outer liners and inner liners shall be washed separate
- f. The outer liners are designed to be washed more frequently (after each exposure) and can be done without having to wash the inner liners.



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- g. If you want a loaner set of gear while you wash your set, contact the turnout gear officer.
- h. When you wash your gear, please submit a payroll sheet, and you will be paid for one hour.

V. STRUCTURAL FIREFIGHTING

- A. Each employee assigned to fight structure fires shall be issued protective clothing and equipment that comply with all applicable NFPA standards and local requirements. These items include:
 1. Helmet (NFPA 1972)
 2. Boots (NFPA 1974)
 3. Gloves (NFPA 1973)
 4. Coat (NFPA 1971)
 5. Pants with Suspenders (NFPA 1971)
 6. SCBA face piece (NFPA 1981)
 7. Hood (NFPA 1971)
- B. No alterations shall be made to protective clothing without the approval of the Fire Chief
- C. Each employee operating within a perimeter designated as hazardous by the incident safety officer shall wear his/her full protective clothing in the prescribed manner. The incident safety officer shall determine when and if it is safe to remove some or all of the clothing.
- D. Employees shall be fully clothed beneath their turn-out gear with appropriate professional clothing made from natural fiber.
- E. Personnel wishing to purchase their own fire helmet may do so within the below parameters.
 1. The only approved helmet for individual purchase is the Morning Pride Ben 2 Plus Traditional Helmet model # HT-BF2-BPR with NFPA 1971, 2007 Edition and ANSI Z87.1 certified EZ-flips. The helmet must also have the eight (8) trapezoid Reflexite® Lime decals. CAUTION - Morning Pride manufactures a similar helmet with flip-downs that do not meet the NFPA 1971 and ANSI Z87.1.
 2. The helmet color must match the employee's current helmet color.
 3. Employees must use their current front helmet shield.
 4. All original decals must remain on the helmet.
 5. The helmet must be approved by the Fire Chief prior to being placed in-service.
 6. The employee's department issued helmet must be turned into the Fire Chief.
 7. The personal purchased helmets must be maintained to the same level and follow the same rules as department issued helmets.
 8. The Fire Chief reserves the right to rescind this offer without notice and require personnel to use only SLFD issued personnel protective equipment.
- F. To assist members with identifying rank at an incident scene, helmets are color-coded as follows:
 1. White: Chiefs
 2. Red: Captains, Lieutenant, Sergeant
 3. Black: Firefighter
 4. Blue: Apprentice Firefighter or Explorer Firefighter

VI. SELF CONTAINED BREATHING APPARATUS (SCBA)

- A. All SCBA used by the department shall comply with NFPA 1981.



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- B. Unless the safety of the atmosphere can be determined by testing and continuous monitoring, all personnel shall use SCBA with face piece while working in the areas where:
 - 1. The atmosphere is hazardous.
 - 2. The atmosphere is suspected of being hazardous.
 - 3. The atmosphere may rapidly become hazardous.
 - 4. The atmosphere is considered an IDLH area.
- C. Employees wearing SCBA shall always work in teams of at least two.
- D. SCBA and spare cylinders shall be kept on each apparatus and be available for immediate use.
- E. SCBA shall not be removed until the incident safety officer has determined by testing that the atmosphere is longer hazardous and that CO levels are less than 200 ppm.
- F. Per NFPA 1852: Standard on Selection, Care, and Maintenance of Open-Circuit Self-Contained Breathing Apparatus (SCBA), 2013 Edition all SCBA bottles shall be filled to at least 4,500 psi. All SCBA bottles on SLFD apparatus shall be filled to 4,500 psi.

VII. WILD LAND FIREFIGHTING

Structural firefighting gear shall be utilized at all wild land fires. The Incident commander may down-grade the PPE based on a risk analysis of the fire and conditions.

VIII. OTHER PROTECTIVE EQUIPMENT

- A. Other protective equipment used at emergency medical incidents, water rescues or other incidents, should be based on the specific policy for that event. For non-fire incidents, SLFD employees shall wear, in a obviously visible manner, at minimum one (1) of the below items on every alarm to identify them as a member of SLFD
 - 1. Turnout coat
 - 2. Bunker pants
 - 3. SLFD uniform coat
 - 4. SLFD approved t-shirt
 - 5. SLFD approved work shirt
 - 6. SLFD uniform
- B. Open toed shoes or sandals are not allowed to be worn on any incident scene. Employees who respond to the station wearing open toed shoes or sandals must don their bunker pants prior to responding. Structural fire boots without bunker pants are not acceptable.

IX. RESPONSIBILITIES

- A. Each employee shall inspect protective clothing and equipment issued to him/her and assigned to his apparatus at the beginning of each shift or prior to use. Each employee is responsible for cleaning, care, and maintenance of his/her clothing and equipment and for obtaining repairs or replacement items.
- B. The turnout gear officer shall inspect protective clothing and equipment issued to employees quarterly to ensure that all items are being properly maintained, worn, and functioning properly.
- C. The incident safety officer shall be responsible for ensuring that all employees operating within the hazardous perimeter of an incident are properly attired and using the appropriate protective clothing and equipment. Any employee who is in violation of this procedure shall be ordered to promptly leave the hazardous area.
- D. An employee who uses a life safety rope shall have the rope inspected by the officer assigned to rope before the rope can be returned to service.



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- E. The rope officer shall maintain a record of all rope use and shall remove from service all rope deemed to be unsafe.

Approved by
/s/ Chief Mike Kennedy