

STANISLAUS CONSOLIDATED FIRE PROTECTION DISTRICT  
POLICIES & PROCEDURES

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INTRODUCTION

Today's fire service has evolved into a multi faceted organization that responds to a wide range of emergencies some of which were not even thought of just a few years ago. As the demands and complexities of responding to these events have increased so, have the risks of injury or death to emergency response personnel.

Although the risk to a firefighter can never be completely eliminated it can be effectively managed to an acceptable level through training and the use of personal protective equipment (PPE). It is the intent of this policy/procedure to establish a program for the proper selection of protective ensembles and ensemble elements used by the District for structural fire fighting. This policy/procedure also establishes a program for minimizing the safety and health risks associated with poorly maintained, contaminated or, damaged ensembles or ensemble elements.

This policy/procedure is for the sole purpose of protecting the suppression personnel of the Stanislaus Consolidated Fire Protection District (SCFPD) and any employee who may engage in emergency related field activities for the SCFPD.

PURPOSE

The following information is intended for the purpose of selecting and maintaining OSHA & NFPA 1851 Compliant PPE utilized by the SCFPD. The following information will provide SCFPD personnel with the knowledge and guidelines while conducting maintenance on assigned PPE.

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## **PART 1 ADMINISTRATION and GENERAL GUIDELINES**

### **1. Scope**

This policy/procedure shall provide the minimum criteria for the creation and implementation of a “program” for the proper selection, handling, care, maintenance and retirement of PPE ensembles and ensemble elements used by this organization for structural fire fighting.

It is the objective of this program to PPE ensembles and ensemble elements that are suitable and appropriate for the intended use.

It is the objective of this program to identify and reduce the safety and health risks associated with the improper handling, care, maintenance and retirement of PPE ensembles and ensemble elements.

It is the intent of this program to establish procedures for the handling of the PPE ensemble and ensemble elements that were involved in an event resulting in the injury or death of a member.

This document shall comply with NFPA 1851 Standard on Selection, Care, and Maintenance of Structural Fire Fighting Protective Ensembles, 2001 revision.

This document shall comply with Federal OSHA, State OSHA, and other mandated regulations.

This document shall comply with all manufacturer use and maintenance guidelines for each element of the ensemble.

### **2. Selection Committee**

This SCFPD shall establish a PPE Selection Committee (Committee) to oversee the process of selecting an ensemble or ensemble elements.

The Committee shall consist of individuals with an interest in PPE and shall have demonstrated a working knowledge of current technology, application and, governing standards.

The Committee size shall be determined on an as needed basis and be of sufficient membership to complete the required tasks.

The Committee chairperson shall be the District Safety Officer or designee, as agreed upon by the Committee, unless otherwise stated by District Management.

The Committee shall identify the various roles and responsibilities of the District’s members.

The Committee shall review the current purchase specifications and become familiar with the current District purchasing process.

The responsibilities of the Committee shall be to develop and implement a selection, care, maintenance and, retirement program for protective ensembles for structural firefighting compliant with NFPA 1851 Standard on Selection, Care and Maintenance of Structural Fire Fighting Ensembles, 2001 revision.

### **3. Contract Resources**

If the SCFPD elects to utilize contract resources for specific parts of this program, the contractor shall substantiate to the Committee that it has been recognized by the manufacturer to perform the following phases:

Cleaning  
Repair  
Warranty work  
Modifications

The contractor shall also identify to the Committee any limitations placed by the manufacturer as a condition of recognition prior to being awarded any contract. Outside contracts for this service shall be evaluated annually for any discrepancies and cost effectiveness. Awarding of purchasing contracts that fall within the District purchasing policy amounts, shall be awarded by the competitive bidding process.

### **4. Training Requirements**

#### **a. Inspections**

##### Routine Inspection

All members of the SCFPD who have been issued a protective ensemble or ensemble elements shall be trained and qualified to perform a Routine Inspection as directed in this document. Training may be performed by a member of this organization who has already been trained and qualified. Routine inspections shall be conducted by the individual issued the ensemble on a daily basis to report any irregularities or defects of the elements issued by the District. Refresher training shall be conducted annually by the training division and/or designee.

##### Advanced Inspection

If Advanced Inspections are performed by this organization, selected members of this organization shall be trained to perform Advanced Inspections as directed by this document. Selected members shall be trained by the manufacturer or manufacturer's representative of each element and training shall be documented.

**b. Cleaning**

Routine Cleaning

All members of the SCFPD who have been issued a protective ensemble or ensemble elements shall be trained and qualified to perform a Routine Cleaning as directed in this document. Training may be performed by a member of this organization who has already been trained and qualified by the manufacturer to carry out such duties.

Advanced Cleaning

If Advanced Cleaning is performed by the District:

Selected members of this organization shall be trained to perform Advanced Cleaning as directed by this document. Selected members shall be trained by the manufacturer or manufacturer's representative of each element and training shall be documented. If Advanced Cleaning cannot be performed within the District, a designated vendor can be elected to perform such duties by the Committee.

Specialized Cleaning

If Specialized Cleaning is performed by the District:

Selected members of this organization shall be trained to perform Specialized Cleaning as directed by this document. Selected members shall be trained by the manufacturer or manufacturer's representative of each element and training shall be documented. If Specialized Cleaning cannot be performed within the District a designated vendor can be elected to perform such duties by the Committee.

**c. Repair**

If Repairs are performed by the District:

Selected members of the District will be trained to perform such repairs. The types of repairs shall be restricted to this organization's limitations in training and equipment. The types of repairs shall also be limited to conditions placed by the manufacturer of each element. Selected members shall be trained by the manufacturer or manufacturer's representative of each element and training shall be documented. Selected members shall also be recognized by the manufacturer of each element as being qualified to perform the repairs.

**5. After-Market Modifications and Alterations**

The SCFPD shall not in any way permit modifications of any type to any ensemble or ensemble element unless authorized by the manufacturer.

This organization shall not permit accessories of any kind to be permanently added to any ensemble or ensemble element without authorization from the manufacturer. Any and All proposed modifications shall be authorized by District management as well as following manufacturer requirements, specifications and warranty requirements.

This includes but is not limited to hooks, snaps, belts, paint, decals, etc.

## **6. Manufacturer's Instructions**

Where the manufacturer's instructions regarding care and maintenance deviate from this document, the manufacturer's instructions shall supersede in all cases.

When issuing new ensembles or ensemble elements, this organization shall provide its members with applicable parts of this document and, a copy of the manufacturer's instructions on care, use, maintenance, limitations and, warnings.

The Committee shall retain a copy of the manufacturer's instructions for reference purposes and to check for conflicting information.

## **7. Limiting Exposure to Soiled or Contaminated Ensembles or Ensemble Elements**

Ensembles or ensemble elements that have been determined to be soiled or contaminated by hazardous materials or biological agents shall be removed from service immediately, placed in an airtight container or biohazard bag and transported to an authorized facility to be cleaned or decontaminated. Personnel handling such contaminated items shall at a minimum utilize universal safety precautions, such as but not limited to: gloves, eye protection, N95 particulate mask, and protective coveralls if needed. Containers that are holding contaminated items shall be tagged or labeled with the date, time, items, and assigned personnel name to which they belong.

At no time shall members of this organization transport or store soiled or contaminated ensembles or ensemble elements in department living areas, eating areas, department apparatus, personal vehicles, or personal place of residence.

At no time shall members of this organization unnecessarily expose themselves, family, other members of this organization, or the public to ensembles and ensemble elements that have been soiled or contaminated.

The Committee shall also become familiar with federal and state OSHA regulations as well as section 2.5 and A.2.5 of NFPA 1851 Standard on Selection, Care, and Maintenance of Structural Fire Fighting Ensemble, and NFPA 1581 Standard on Fire Department Infection Control Program with regards to soiled or contaminated ensembles.

## 8. Terminology and Definitions

The following terms with definitions are recognized by NFPA and may be found in this document or others created in support of this document:

**Accessories:** Those items that are attached to an ensemble or ensemble element but designed in such a manner to be removable from the ensemble or the element and that are not necessary to meet the requirements of the standard. Such accessories include, but are not limited to, utility belts, harnesses, backpacks, tools, tool packs, radios, radio packs, suspenders, lights, and heat sensing devices.

**Biological Agents:** Biological materials that could be capable of causing a disease or long-term damage to the human body.

**Body Fluids:** Fluids produced by the body including, but not limited to, blood, semen, mucus, feces, urine, vaginal secretions, breast milk, amniotic fluids, cerebrospinal fluid, synovial fluid, and pericardial fluid.

**Carcinogen/Carcinogenic:** A cancer-causing substance which is identified in one of several published lists.

**Care:** Procedures for cleaning, decontamination, and storage of protective clothing and equipment.

**Certification/Certified:** A system whereby a certification organization determines that a manufacturer has demonstrated the ability to produce a product that complies with the requirements of a specific standard(s), authorizes the manufacturer to use a label on listed products that comply with the requirements of that standard(s), and establishes a follow-up program conducted by the certification organization as a check on the methods the manufacturer uses to determine compliance with the requirements of that standard(s).

**Char:** The formation of a brittle residue when material is exposed to thermal energy.

**Cleaning:** The act of removing soils and contaminants from ensembles and elements by mechanical, chemical, thermal or combined processes.

**Advanced Cleaning:** The thorough cleaning of ensembles or elements by washing with cleaning agents.

**Contract Cleaning:** Cleaning conducted by a facility outside the organization that specializes in cleaning protective clothing.

**Routine Cleaning:** The light cleaning of ensembles or elements performed by the end user without taking the elements out of service.

**Specialized Cleaning:** Cleaning to remove hazardous materials or biological agents.

**Coat:** A protective garment; an element of the protective ensemble designed to provide minimum protection to upper torso and arms, excluding the hands and head.

**Contamination/Contaminated:** The process by which ensembles and ensemble elements are exposed to hazardous materials or biological agents.

**Coverall:** A protective garment; an element of the protective ensemble configured as a single-piece garment and designed to provide minimum protection to the torso, arms, and legs, excluding the head, hands, and feet.

**Craze:** The appearance of fine cracks in surface of helmet shell or other smooth surface of an element.

**Cross Contamination:** The transfer of contamination from one item to another or to the environment.

**Crown:** The portion of the helmet that covers the head above the reference plane.

**Crown Straps:** A helmet term for the part of the suspension that passes over the head.

**Decontamination:** The act of removing contaminants from ensembles and ensemble elements by a physical, chemical, or combined process. (*See also Cleaning, and Specialized Cleaning.*)

**Disinfectant:** An agent that destroys, neutralizes, or inhibits the growth of harmful biological agents.

**Ear Covers:** An integral part of the helmet designed to provide limited protection for the ears. Ear Covers provides no significant thermal protection.

**Elasticity:** The ability of an ensemble or element, when repeatedly stretched, to return to its original form as applied to wristlets and hoods.

**Elements:** The parts or items that comprise the protective ensemble. The protective ensemble elements are coats, trousers, coveralls, helmets, gloves, footwear, and interface components.

**Embrittlement:** The hardening of a textile material that makes the ensemble or element or a textile material susceptible to easy fracture.

**Emergency Medical Operations:** The delivery of emergency medical care and transportation prior to arrival at a hospital or other health care facility.

**Energy Absorbing System:** A material, suspension system, or combination thereof incorporated into the design of the helmet to attenuate impact energy.

**Ensemble:** Multiple elements of clothing and equipment designed to provide a degree of protection for fire fighters from adverse exposures to the inherent risks of structural fire fighting operations and certain other emergency operations. The elements of the protective ensemble are coats, trousers, coveralls, helmets, gloves, footwear, and interface components.

**Face shield:** A helmet component intended to help protect a portion of the wearer's face in addition to the eyes, not intended as primary eye protection.

**Field test:** The non-laboratory evaluation of one or more protective ensemble elements used to determine product performance related to organizational expectations or to compare products in a manner related to their intended use.

**Fit:** The quality, state or manner in which the length and closeness of clothing, when worn, relates to the human body.

**Flame Resistance/Resistant:** The property of a material whereby the application of a flaming or non-flaming source of ignition and the subsequent removal of the ignition source results in the termination of combustion. Flame resistance can be an inherent property of the material, or it can be imparted by specific treatment.

**Footwear:** An element of the protective ensemble designed to provide minimum protection to the foot, ankle, and lower leg.

**Functional/Functionality:** The ability of an ensemble or element or component to continue to be utilized for its intended purpose.

**Garment(s):** The coat, trouser, or coverall elements of the protective ensemble designed to provide minimum protection to the upper and lower torso, arms, and legs, excluding the head, hands, and feet.

**Gauntlet:** The circular, flared, or otherwise expanded part of the glove that extends beyond the opening of the glove body.

**Gloves:** An element of the protective ensemble designed to provide minimum protection to the fingers, thumb, hand, and wrist.

**Glove Wristlet:** The circular, close-fitting part of the glove. Usually made of knitted material, that extends beyond the opening of the glove body.

**Goggles:** A helmet component intended to help protect the wearer's eyes and a portion of the wearer's face, not intended as primary eye protection.

**Hardware:** Non-fabric components of the structural fire fighting, protective ensemble including, but not limited to, those made of metal or plastic.

**Hazardous Materials:** Any solid, liquid, gas, or mixture thereof that can potentially cause harm to the human body through respiration, ingestion, skin absorption, injection, or contact.

**Hazardous Materials Emergencies:** Incidents involving the release or potential release of hazardous chemicals into the environment that can cause loss of life, personnel injury, or damage to property and the environment.

**Helmet:** An element of the protective ensemble designed to provide minimum protection to the head.

**Hood:** The interface component element of the protective ensemble designed to provide limited protection to the coat/helmet/SCBA face piece interface area.

**Integrity:** The ability of a ensemble or element to remain intact and provide continued minimum performance.

**Interface Area:** An area of the body where the protective garments, helmet, gloves, footwear, or SCBA face piece meet (i.e., the protective coat/helmet/SCBA face piece area, protective coat/protective trouser area, the protective coat/glove area, and the protective trouser/footwear area).

**Liner System:** The combination of the moisture barrier and thermal barrier as used in a garment.

**Maintenance:** Procedures for inspection, repair, and retirement of protective clothing and equipment.

**Manufacturer:** The entity that assumes the liability and provides the warranty for the compliant product.

**Melt:** A response to heat by a material resulting in evidence of flowing or dripping.

**Moisture Barrier:** The portion of the composite designed to prevent the transfer of liquids.

**Organization:** The entity that provides the direct management and supervision for the emergency incident response personnel.

**Outer Shell:** The outermost layer of the composite with the exception of trim, hardware, reinforcing material and wristlet material.

**Protective Ensemble:** Multiple elements of clothing and equipment designed to provide a degree of protection for fire fighters from adverse exposures to the inherent risks of structural fire fighting operations and certain other emergency operations. The elements of the protective ensemble are coats, trousers, coveralls, helmets, gloves, footwear, and interface components.

**Reinforcement:** An additional layer placed in or on an element.

**Retirement:** The process of permanently removing an element from emergency operations service in the organization.

**Seams:**

**Major A Seams:** Outermost layer seam assemblies where rupture could reduce the protection of the garment by exposing the inner layers such as the moisture barrier, the thermal barrier, the wearer's station/work uniform, other clothing, or skin.

**Major B Seams:** Moisture barrier or thermal barrier seam assemblies where rupture could reduce the protection of the garment by exposing the next layer of the garment, the wearer's station/work uniform, other clothing, or skin.

**Minor Seams:** Seam assemblies that are not classified as Major A or Major B seams.

**Selection:** The process of determining what protective clothing and equipment is necessary for protection of fire and emergency service responders from an anticipated, specific hazard, or other activity, the procurement of the appropriate protective clothing and equipment, and the choice of the proper protective clothing and equipment for a specific hazard or activity at an emergency scene.

**Separate:** A material response evidenced by splitting or delaminating.

**Service Life:** The period for which an ensemble or element is useful before retirement.

**Shall:** Indicates a mandatory requirement.

**Shank:** Reinforcement to the area of protective foot-wear designed to provide additional support to the instep.

**Should:** Indicates a recommendation or that which is advised but not required.

**Soiled/Soiling:** The accumulation of materials, that are not considered hazardous materials or biological agents, but which could degrade the performance of the ensemble or element.

**Stress Areas:** Those areas of the garment that are subjected to more wear, including but not limited to, crotches, knees, elbows, and shoulders.

**Suspension:** A helmet term for the energy attenuating system made up of the headband and crown strap.

**Tensile Strength:** The force at which a fiber or a fabric will break.

**Thermal Barrier:** The portion of protective ensemble or element composite that is designed to provide thermal protection.

**Trim:** Retro-reflective and fluorescent material attached to the outermost surface of the protective ensemble or element for visibility enhancement.

**Trouser:** A protective garment. An element of the protective ensemble that is designed to provide minimum protection to the lower torso and legs, excluding the ankles and feet.

**Universal Precautions:** An approach to infection control in which human blood and certain human body fluids are treated as if known to be infectious for HIV, HBV, and other bloodborne pathogens. Under circumstances in which differentiation between body fluids is difficult or impossible, all body fluids shall be considered potentially infectious materials.

**Units:**

In this standard, values for measurement are followed by an equivalent in parentheses, but only the first stated value shall be regarded as the requirement. Equivalent values in parentheses shall not be considered as the requirement, as these values might be approximate.

**Utility Sink:** A separate sink used for cleaning ensembles and ensemble elements.

**Winter Liner:** A garment term for an optional component layer designed to provide added insulation against cold.

**Wristlet:** An interface component element of the protective ensemble that is the circular, close-fitting extension of the coat sleeve, usually made of knitted material, designed to provide limited protection to the protective coat/glove inter-face area.

## **PART 2      RECORD KEEPING**

For each element, the Committee and/or District designee shall develop and implement a record keeping system that complies with NFPA 1851.

At a minimum, the following data shall be recorded:

- Person to whom element is issued
- Date and condition when issued
- Manufacturer and model name or design
- Manufacturer's identification number, lot number, or serial number
- Month and year of manufacture
- Date of and findings of Advanced Inspection (required at least every 12 months)
- Date of Advanced Cleaning (required at least every 6 months)
- Date of Specialized cleaning (required when decontamination is necessary)
- Reason for Advanced Cleaning or Specialized Cleaning and who performed the task
- Date of repairs, who performed repairs, and brief description of all repairs
- Date of retirement
- Date and method of disposal

The Committee and/or designee may elect to develop a system for this organization or adopt an existing system.

The records may be collected and stored as hard paper copies or, collected and stored electronically.

Records shall be maintained until the element is retired and disposition has occurred.

If resources permit, records should be kept for at least 12 months past retirement and/or disposal.

## **PART 3 SELECTION**

### **1. Risk Assessment**

The Committee and/or designee shall initiate a risk assessment with the goal of establishing the appropriate needs of the organization.

The risk assessment shall consider the following:

- Climate
- Field elevation
- Expected low & high temperature
- Average day and night temperatures
- Average winds
- Average humidity
- Types of incidents responding to
- Frequency of use of ensembles
- Organization's operational strategy and tactics
- Past experiences
- Other issues deemed important

The risk assessment shall be reviewed on an annual basis or, as deemed necessary.

The conclusions of the risk assessment shall be documented kept on record.

### **2. Field Wear Test and Evaluation (if implemented)**

Based on the findings of the risk assessment, the Committee shall identify possible technologies and manufacturers that may meet the organizations needs.

The Committee shall contact manufacturers or venders about participating in a field wear test and evaluation of their product(s). The manufacturers contacted shall be determined by the Committee.

By implementing a field wear test the Committee shall begin to evaluate the strengths and weakness of the ensembles and ensemble elements under consideration.

The Committee shall select participants for the wear test based upon a cross section of personnel and upon considering the following:

- Willingness to participate (Voluntary)
- Objectivity
- Current status (line fire fighter, engineer, captain, chief officer, etc.)
- Age & gender
- Degree of physical fitness

The Committee shall have each of the participants wear test each of the ensembles or ensemble elements being considered for selection.

The Committee shall determine when each ensemble or ensemble element is to be worn and for how long.

The Committee shall assure that each ensemble or ensemble element is properly fitted before use.

The duration of the field wear test shall be determined by the Committee prior to the start of the evaluation.

The Committee shall develop and use an evaluation form to document the findings of the wear test.

The evaluation form shall use a rating system for those features deemed important to the Committee.

The evaluation form is to be completed for each ensemble element being considered.

Each participant shall be required to complete the evaluation form periodically during and upon completion of the evaluation.

At minimum, the field wear test and evaluation should consider:

- Performance expectations
- Thermal protection vs. physiological affects
- Style or design
- This will have a physiological impact on user, function, etc.
- Construction
- This has an affect on quality, durability, ensemble life.
- Manufacturer
- Does the manufacturer have the ability to meet performance demands, provide technical support, provide training, service warranty claims, and render adequate field support.

### 3. Purchase Specifications

Purchase specifications are intended to translate the findings of the Selection Committee into a document that identifies the performance and design requirements of the ensemble or ensemble elements as well as every aspect of this organizations needs and expectations.

The purchase specifications shall incorporate at least the following information:

- The governing regulations each element is to comply with.
- Language required by the purchasing department.
- Any language requiring manufacturers' to substantiate, to the Committee's satisfaction, compliance with the purchase specification.
- Language detailing a pre-bid conference, if deemed necessary.
- Language requiring bid samples be submitted, if deemed necessary.
- Language providing for disposition of bid samples at the conclusion of the selection process.
- Language indicating that an inspection of received products will be completed prior to final acceptance of all orders.
- Language detailing the procedures for returning unsatisfactory products.
- Language detailing performance demands such as delivery, sizing, training, etc.
- Language detailing any penalties for failure to comply with the specifications.
- Garment outer shell fabric, weight and, color.
- Garment thermal liner/moisture barrier composite.
- Garment trim type and configuration.
- Garment closure system.
- Garment wristlet system.
- Hood fabric and face opening criteria.
- Glove composite, gauntlet or wristlet (wristlet fabric).
- Helmet material, color, retention system, trim configuration, trim color, ear coverings, and eye protection.
- Boot composite.
- The various options that are being added to each element.
- Language detailing specific construction criteria for each element.

The Committee is instructed to review Appendix A. Section A.3.1.7 NFPA 1851, current revision for more information related to purchase specifications. All purchases or contracts shall be of competitive nature, and shall follow the District purchasing ordinance.

## **PART 4 INSPECTION**

### **1. General Information**

The purpose of the inspection process is to determine the serviceability of the ensemble and the ensemble elements by identifying damage that, if left unnoticed, could result in a failure of that element.

Prior to initiating an inspection, the ensemble and ensemble elements shall be evaluated for soiling and contamination.

If the ensemble or ensemble elements are found to be soiled or, contaminated, the inspection processes shall suspended until the ensemble and its elements have been clean or decontaminated. .

The Committee shall establish guidelines for determining when an element is soiled or contaminated and to the cleaning procedure to use.

The inspection criteria shall be in a “GO” or “NO GO” criteria.

Elements that are found to be damaged shall be immediately removed from service and evaluated by a member of this organization, who is specially trained and qualified, to determine if the element is to be repaired or retired.

Inspections shall be classified as Routine Inspection and Advanced Inspection.

### **2. Routine Inspection**

Routine Inspection is the responsibility of each member of this organization who has been issued a protective ensemble or ensemble elements.

Routine Inspections shall be completed daily and after each use, after exposure to an event that could have resulted in damage to the element or, as warranted.

This organization encourages each member to conduct a routine or brief inspection prior to the start of each duty day. Members shall report immediately any defects or damage to their protective gear to their supervisor upon recognition.

### **3. Advanced Inspection**

Advanced Inspections shall be conducted by members of this organization who have been trained as per Chapter 1, Section 4, Training Requirements, of this document.

Advanced Inspections may also be performed by Contract Resources, provided they meet the criteria identified in Chapter 1, Section 4 Training Requirements.

Advanced Inspections shall be conducted at least every 12 months and the findings documented as per Chapter 2.

An Advanced Inspection shall also be completed when a Routine Inspection identifies a potential problem.

This organization also requires an Advanced Inspection to be completed prior to any element being returned to service from Advanced Cleaning, Specialized Cleaning or Repair.

#### **4. Routine Inspection Procedures**

The Routine Inspection shall include the following, minimum criteria:

##### **Jacket and Trouser**

- Soiling or contamination
- Physical damage such as rips, tears, and cuts
- Damaged/missing hardware and closure systems
- Thermal damage such as charring, burn holes, and melting
- Damaged or missing reflective trim

##### **Hood**

- Soiling or contamination
- Physical damage such as rips, tears, and cuts
- Thermal damage such as charring, burn holes, and melting
- Loss of face opening adjustment

##### **Helmet**

- Soiling or contamination
- Physical damage to the shell, such as cracks, crazing, dents, soft spots, and abrasions
- Thermal damage to the shell such as bubbling, soft spots, warping, or discoloration
- Physical damage to the ear flaps such as rips, tears, and cuts
- Thermal damage such as charring, burn holes, and melting
- Damaged or missing components of the suspension and retention systems
- Damaged or missing components of the face shield/goggle system, including discoloration, crazing, and scratches to the face shield/goggle lens limiting visibility
- Damaged or missing reflective trim
- Damage to approved District helmet shield.

### **Gloves**

- Soiling or contamination
- Physical damage such as rips, tears, and cuts
- Thermal damage such as charring, burn holes and melting
- Inverted liner
- Shrinkage
- Loss of elasticity/flexibility

### **Footwear**

- Soiling or contamination
- Physical damage such as cuts, tears, and punctures
- Thermal damage such as charring, burn holes, and melting
- Exposed/deformed steel toe, steel midsole, and shank
- Loss of water resistance
- Closure system component damage and functionality

#### **4. Advanced Inspection Procedures (Follow Advanced Inspection Form)**

UNIVERSAL PRECAUTIONS shall be utilized when handling elements.

These procedures are to be performed by members of this organization who meet the criteria identified in Chapter 1, Section 4 Training Requirements.

These procedures may also be performed by a Contract Resource that meets the criteria identified in Chapter 1, Section 4 Training Requirements.

The Committee shall develop an inspection form that incorporates the criteria found in NFPA 1851, Chapter 4, Section 4.3, as well as other information deemed necessary.

This form shall become part of the Record Keeping requirements of this document and shall meet the criteria identified in Chapter 2 of this document.

## **PART 5      CLEANING**

### **1. General Information**

The SCFPD shall provide a means of having soiled and contaminated ensemble and ensemble elements cleaned and decontaminated.

UNIVERSAL PRECAUTIONS shall always be utilized when handling soiled and contaminated elements.

Elements shall be stored and transported as per Chapter 1, Section 7 of this document.

The Committee shall contact the manufacturer of each element for approval of the following guidelines and to seek additional guidelines from the manufacturer.

The manufacturer of the element shall be contacted anytime there is a question regarding cleaning or decontaminating.

Cleaning shall be classified as Routine Cleaning, Advanced Cleaning and Specialized Cleaning.

### **2. Routine Cleaning**

Routine Cleaning is the responsibility of each member of this organization who has been issued a protective ensemble or ensemble elements.

Routine Cleaning shall be completed following an event that results in soiling or contamination to the element or, as warranted.

### **3. Advanced Cleaning**

Advanced Cleaning shall be conducted by members of this organization who have been trained as per Chapter 1, Section 4, Training Requirements, of this document.

Advanced Cleaning may also be performed by Contract Resources, provided they meet the criteria identified in Chapter 1, Section 4 Training Requirements.

Advanced Cleaning shall be performed at least every 6 months and the findings documented as per Chapter 2.

An Advanced Cleaning shall also be completed when a Routine Cleaning fails to render the elements sufficiently clean.

This organization also requires Advanced Cleaning to be completed prior to any element being submitted for Advanced Inspection.

#### **4. Specialized Cleaning (Hazardous Material Exposure)**

Universal precautions shall be observed when handling elements known or suspected to be contaminated with hazardous materials or biological agents.

Ensembles or ensemble elements that are known or suspected to be contaminated shall be isolated, tagged, bagged and removed from service under the supervision of the senior fire ground commander or his designate. This action shall be documented and tracked in the event of restitution claims are filed from the incident. Ensembles contaminated by Hazardous Materials shall remain with the incident and until appropriately decontaminated and rendered safe.

Specialized Cleaning may also be performed by Contract Resources, provided they meet the criteria identified in Chapter 1, Section 4 Training Requirements. If a Contract Resource is utilized, contaminated elements shall be shipped in accordance with federal, state, and local regulations.

Upon completion of Specialized Cleaning, the elements shall be inspected for effectiveness of cleaning and, if necessary, cleaning process is to be repeated.

#### **5. General Cleaning Guidelines**

Universal precautions shall be used.

Commercial dry cleaning shall not be used as a means of cleaning or decontaminating ensembles and ensemble elements unless approved by the manufacturer of the ensemble or ensemble element.

Chlorine bleach or chlorinated solvents shall never be used to clean or decontaminate ensembles or ensemble elements.

Cleaning solutions shall have a pH range of not less than 6.0 pH and no greater than 10.5 pH.

To prevent structural damage to the ensemble or ensemble element, heavy scrubbing or spraying with high velocity water jets, such as a power washer, shall not be used.

Protective ensembles and ensemble elements shall be cleaned separately from non-protective items.

To prevent damage to components and cross contamination, the shells and liners of protective garment elements shall be separated and cleaned with like items (shells with shells and liners with liners, etc.).

## **6. Routine Cleaning Procedures**

Universal precautions shall be used.

In establishing a Routine Cleaning guideline, the Committee shall examine the manufacturer's label and user information provided by the manufacturer, for the instructions on cleaning the ensemble or ensemble element.

In the absence of the manufacturer's instructions or manufacturer's approval of alternative procedures, the following cleaning procedure shall be used:

- When possible, initiate cleaning at the incident scene.
  - Brush off any dry debris.
  - Gently rinse off debris with a water hose.
  - If necessary, scrub gently with a soft bristle brush and rinse off again.
- If necessary, spot clean utilizing procedures for Utility Sink.
- Inspect for soiling and contamination, and repeat process or submit for Advanced Cleaning.

## **7. Advanced Cleaning Procedures**

Universal precautions shall be used. Precautions that shall be utilized at a minimum when dealing with suspected contaminated clothing: latex gloves, eye protection, and N95 mask.

In establishing an Advanced Cleaning guideline, the Committee shall examine the manufacturer's label and user information provided by the manufacturer, for the instructions on cleaning the ensemble or ensemble element.

In the absence of the manufacturer's instructions or manufacturer's approval of alternative procedures, the following cleaning procedure shall be used:

- Brush off any dry debris.
- Clean utilizing procedures for:
  - Utility Sink Cleaning
  - Machine Cleaning (Washer Extractor)
  - Contract Resources
- Inspect for soiling and contamination, and repeat process or submit for Specialized Cleaning.

## **8. Specialized Cleaning Procedures**

Universal precautions shall be utilized when handling of suspected contaminated clothing. Precautions that shall be utilized at a minimum when dealing with contaminated clothing: latex gloves, eye protection, and N95 mask.

Where elements are known or suspected of being contaminated with a hazardous material or biological agent, an attempt shall be made to identify the contaminant or suspected contaminant.

When the contaminant has been identified, this organization shall consult the manufacturer of the contaminant for an appropriate decontamination agent and process.

In addition, the manufacturer of each element shall also be contacted for approval of the recommended agent and process.

If the contaminate can not be identified or a cleaning solution found, the ensemble or ensemble elements shall be disposed of following federal, state, and local guidelines.

For ensembles or ensemble elements that have been soiled with body fluids the following process shall be used:

- Contact the manufacturer or follow the provided manufacturer's instructions to determine appropriate disinfectant to use.
- Clean following
  - Utility Sink Cleaning
  - Machine Cleaning (Washer Extractor)
  - Contract Resource
- Inspect for effectiveness of cleaning, and repeat process and repeat process if necessary.

## **9. Cleaning Procedures for Garment Element using Utility Sink**

The following procedures shall be used when cleaning in a utility sink:

- Wear protective gloves and eye/face splash protection
- Fill the sink with water not to exceed 40° C (105° F).
- Add cleaning solution or detergent (liquid is recommended)
- If necessary, pre-treat heavily soiled or spotted areas.
- Do not overload the sink.
- Scrub gently using a soft bristle brush.
- Use extra care with moisture barrier assemblies.
- Drain the water from the sink.
- Refill the sink; agitate gently using gloved hand or stir stick.
- Gently wring out garments and drain the water from the sink.
- Repeat the rinse steps until garment is thoroughly rinsed.
- Dry the elements. Air Dry away from direct sunlight.
- Rinse out the sink.

## 10. Cleaning Procedures for Garment Element using Washing Machine

The following procedures shall be used for (conventional machine cleaning):

- Set and start the machine cycle
- Filling with a fill with water not to exceed 40° C (105° F).
- Use a heavy duty setting for shells, etc.
- Use regular or gentle for liner composites
- Add detergent.
- Run one complete cycle, rinsing at least twice.
- Do not overload the machine.
- If necessary, pre-treat heavily soiled or spotted areas.
- Fasten all closures, including pocket closures, hook and loop, snaps, zippers, hooks.
- Turn garment inside out and place in mesh laundry bag.
- Dry the elements.
- Inspect and rewash if necessary.
- If the machine is also used to wash items other than protective ensemble elements, rinse out the machine by running it while empty through a complete cycle with 49° C to 52° C (120° F to 125° F) water and detergent.

The following procedures shall be used for (**Washer Extractor**):

- Washer Extractors are designed for multiple sets of clothing, not single items.
- Wash multiple sets of garments at once, not individually.
- Empty outer/inner garment pockets.
- Place garments in machine and shut/lock outer door.
- Select pre-determined setting for the type of garment you are cleaning.
- Extractors have been preset by the manufacturer to eliminate tampering and cleaning errors.
- Extractors will add detergent and biohazard solutions automatically.
- Inspect items washed when cycles have completed, rewash if necessary.
- Hang dry garments, not in direct sunlight.
- Notify immediate supervisor if extractor throws “error code” or will not work correctly.
- DO NOT attempt to fix machine, the manufacturer will be notified immediately for repair.

## 11. Drying Procedures for Garments

In establishing a Drying guideline, the Committee shall examine the manufacturer’s label and user information provided by the manufacturer, for the instructions on drying the ensemble or ensemble element.

In the absence of the manufacturer’s instructions or manufacturer’s approval of alternative procedures, the following cleaning procedure shall be used:

- For air drying: (Recommended)
  - Place elements in a clean, dry, well ventilated area.
  - Do not dry in direct sunlight.
- For machine drying:
  - Do not overload the machine.
  - Fasten all closures, including pocket closures, hook and loop, snaps, zippers, hooks, etc...
  - Turn garments inside out and place in a mesh laundry bag.
- If the dryer has a no-heat option, utilize this setting.
- If heat must be used, basket temperature shall not exceed 40° C (105° F).

## **12. Helmet Cleaning Procedures**

Wear protective gloves and eye/face splash protection.

The Committee shall examine the manufacturer's label and user information provided by the manufacturer, for the instructions on cleaning the helmet element.

In the absence of the manufacturer's instructions or manufacturer's approval of alternative procedures, the following cleaning procedure shall be used:

- Helmets shall not be machine cleaned or dried.
- Helmet shells, headbands, crown straps, ear covers, suspension systems, and all other components shall be hand washed using a Utility Sink.
- The manufacturer shall be consulted if stronger cleaning agents are required.
- No solvents shall be used to clean the helmet, face shield or goggles.
- The manufacturer shall be consulted when more thorough cleaning of the face shield or goggle is necessary.

## **13. Hood Cleaning Procedures**

Wear protective gloves and eye/face splash protection.

The Committee shall examine the manufacturer's label and user information provided by the manufacturer, for the instructions on cleaning the hood element.

In the absence of the manufacturer's instructions or manufacturer's approval of alternative procedures, the following cleaning procedure shall be used:

- The Hood shall be cleaned following
  - Utility Sink Cleaning
  - Machine Cleaning (Washer Extractor)
  - Contract Resource
- Hoods shall be dried in accordance with the provisions identified in Drying Procedures.

#### **14. Glove Cleaning Procedures**

Wear protective gloves and eye/face splash protection.

The Committee shall examine the manufacturer's label and user information provided by the manufacturer, for the instructions on cleaning the glove element.

In the absence of the manufacturer's instructions or manufacturer's approval of alternative procedures, the following cleaning procedure shall be used:

- Gloves shall be cleaned following
  - Utility Sink Cleaning
  - Machine Cleaning (Washer Extractor)
  - Contract Resource
- Gloves shall be dried in accordance with the provisions identified in Drying Procedures with the exception of no heat setting shall ever be used.

#### **15. Footwear Cleaning Procedures**

Wear protective gloves and eye/face splash protection.

The Committee shall examine the manufacturer's label and user information provided by the manufacturer, for the instructions on cleaning the glove element.

In the absence of the manufacturer's instructions or manufacturer's approval of alternative procedures, the following cleaning procedure shall be used:

- Footwear shall not be machined washed
- Footwear shall be cleaned following
  - Utility Sink Cleaning
  - Contract Resource
- Footwear shall be air dried in a clean, dry, well ventilated area.
- Footwear shall not be machine dried.

### **PART 6 REPAIR**

Due to the complex nature of repairs and the liability associated with making them, the SCFPD shall use Contracted Resources to facilitate all repair work as well as alterations and modifications.

Repairs shall not be attempted by District personnel unless trained to do so by the manufacturer of the garment.

## **PART 7      ISSUING and STORAGE**

### **1. Issuing**

The ensemble or ensemble elements that are to be issued shall be inspected to confirm they are in a serviceable condition.

The ensemble or ensemble element shall be properly fitted to the member receiving the equipment.

Members shall receive adequate training for the donning, doffing, limitations, care and maintenance of each element assigned to them.

The member shall receive a copy of the manufacturer's instructions for each element and, a copy of this standard operating procedure (see Chapter 1, Section 5).

Members shall acknowledge and document that they have received the manufacturer's instructions and, a copy of this standard operating procedure.

Members shall also document having received training for the donning, doffing, limitations, care and, maintenance of each element.

### **2. Short Term Storage**

Ensembles or ensemble elements that are issued but not in use shall be stored or transported as follows:

- Not exposed to direct sunlight
- Not exposed to long term UV producing lights
- Not kept in airtight containers
- Ensemble elements shall not be stored or transported where they can be contaminated with fluids, solvents, fuels, fuel vapors or other contaminants
- Ensemble elements shall not be stored or transported in compartments or trunks where they can be damaged by other tools or equipment
- Soiled or contaminated elements shall handled as per Chapter 1, item 6

### **3. Long Term Storage**

Ensembles or ensemble elements that are not issued shall be stored as follows:

- Not exposed to direct sunlight
- Not exposed to long term UV producing lights
- Not kept in airtight containers except when new and never issued

- Ensemble elements shall not be stored where they can be contaminated with fluids, solvents, fuels, fuel vapors or other contaminants
- Ensemble elements shall not be stored in compartments or trunks where they can be damaged by other tools or equipment
- Ensemble elements shall not be stored at temperatures below –40c or above 82c.
- Storage area shall be clean, dry and, well ventilated
- Ensemble elements shall be clean and dry before being placed into storage
- Ensemble garments shall be cleaned and dried before issuing to personnel and placed into service.

## **PART 8 RETIREMENT and DISPOSITION**

### **1. Retirement**

Ensembles or ensemble elements shall be retired and removed from service when they are worn or damaged to the extent that they can no longer be repaired.

Ensembles or ensemble elements shall be retired and removed from service when they are worn or damaged to the extent, that repair is not cost effective.

Ensembles or ensemble elements shall be retired and removed from service when they are contaminated to the extent that decontamination is not possible, unsafe, or not cost effective.

Ensembles or ensemble elements may be retired at any time they are no longer of use to this organization even though they are still serviceable.

Retirement shall be determined by a member of this organization who has received specialized training in the inspection and repair of ensembles and ensemble elements or deemed necessary by the District safety officer.

Recommendations for retirement can also be made by a Contract Resource however; final determination shall be made by a member of this organization who has received specialized training in the inspection and repair of ensembles and ensemble elements.

### **2. Disposition**

Ensembles or ensemble elements that have been retired shall be destroyed or disposed of in such a manner that prevents their use in fire fighting or other emergencies.

Ensembles or ensemble elements that have been retired but are still serviceable may be used for training provided that the training does not involve live fire fighting.

- Retired ensembles or ensemble elements that are used for training shall be marked in such a way that would prevent their being used for live fire fighting. Garments shall be marked “Training Only”.

- Garments that have been deemed retired from current use or service, shall not be given away or taken by District personnel for personal use. The Committee shall follow current policy when eliminating District “Surplus” equipment.
- Items to be deemed “surplus” shall be designated by the Committee or its designee and referred to Management.

**PART 9 PROCEDURES for EVENTS INVOLVING INJURY or DEATH**

In the event of a significant injury or death of a member during an emergency incident or training accident, the removal of the ensemble or ensemble elements from the member shall be the responsibility of the most senior ranking officer on scene or investigation team member. The senior member of this organization who is present shall take custody of each element.

- Universal precautions shall be utilized before handling any element involved in the event.
- All chain-of-custody procedures shall be adhered to during the investigation of the accident.
- This member shall act to preserve each element from unnecessary handling and further damage.
- This member shall document the time and circumstances as soon as possible.
- This member shall document by digital photographs & site illustrations prior to the removal of any such ensemble.
- This member shall secure each element and maintain custody until relieved by a more senior member of this organization.

Each element shall be secured in a paper bag or cardboard box and sealed with tamper proof tape.

- At no time shall elements be placed in an airtight container except when contaminated with a hazardous material.
- All actions shall be conducted with a witness and/or in accordance with the investigation team.

Every time custody of the ensemble or ensemble elements is transferred, the transfer shall be witnessed and documented.

As soon as possible, if safe, custody of the ensemble or ensemble elements shall be transferred to law enforcement having jurisdiction and secured as evidence.

Custody of each element shall be maintained until the investigation or litigation is concluded, and/or designated otherwise by a court of law.

Written by: B/C Wapnowski/Engineer Gardner

Approved by: \_\_\_\_\_

Date: April 4, 2010