



National Fire Protection Association

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MEMORANDUM

TO: NFPA Technical Correlating Committee on Protective Ensembles for Technical Rescue Incidents

FROM: David Trebisacci, Staff Liaison

DATE: October 21, 2011

SUBJECT: NFPA 1855 ROP TCC Letter Ballot (F2012 Cycle)

In accordance with the NFPA Regulations Governing Committee Projects, attached is the Letter Ballot on the Report on Proposals (ROP) for the 2013 Edition of NFPA 1855. Also attached is a copy of the Proposals.

Please note the ballot has two parts:

Part 1 is a Letter Ballot on the Technical Correlating Committee Amendments to the ROP (TCC Notes), and not on the Proposals themselves. Reasons must accompany “Negative” and “Abstaining” votes.

Part 2 is an Informational Letter Ballot Authorizing the Release of the ROP.

Negative votes are limited to subjects within the purview of the TCC. Opposition on a strictly technical basis is not sufficient grounds for substantiating a negative vote. If you have correlation issues please identify and describe your concerns in the area of the ballot form for identification of correlation issues.

Please complete and return your ballot as soon as possible but no later than November 2, 2011. As noted on the ballot form, please return the ballot to Yvonne Smith via e-mail to ysmith@nfpa.org or via fax to 617-984-7056. You may also mail your ballot to the attention of Yvonne Smith at NFPA, 1 Batterymarch Park, Quincy, MA 02169.

The return of ballots is required by the Regulations Governing Committee Projects. As usual, nonvoting members (for example, the nonvoting technical committee chairs) need not return ballots.

Attachments: Ballot Form
NFPA1855 Proposals

1855-1 Log #CP1 FAE-SCE
(Entire Document)

Final Action: Accept

Submitter: Technical Committee on Special Operations Protective Clothing and Equipment,

Recommendation: Review entire document to: 1) Update any extracted material by preparing separate proposals to do so, and 2) review and update references to other organizations documents, by preparing proposal(s) as required.

Substantiation: To conform to the NFPA Regulations Governing Committee Projects.

Committee Meeting Action: **Accept**

Committee Statement: The technical committee reviewed the entire document to update any extracted material by preparing separate proposals as required, and reviewed and updated references to other organizations documents by preparing proposal(s) as required.

Number Eligible to Vote: 19

Ballot Results: Affirmative: 17

Ballot Not Returned: 2 Byrne, C., Paderick, H.

1855-2 Log #42 FAE-SCE
(Entire Document)

Final Action: Accept in Principle

Submitter: Karen E. Lehtonen, Lion

Recommendation: The entire document related to garments should be reviewed to review consistency in terminology between this document and NFPA 1951. Specifically the terminology for the barrier layer and liners should be reviewed. This terminology should also incorporate the possibility of trilaminate technology for rescue and recovery or CBRN garments as this could be utilized in technical rescue garments. _

Substantiation: Not all terminology between NFPA 1855 and NFPA 1951 is consistent. This could lead to issues in the field when determining what is being evaluated by an organization or ISP. The terminology should be standardized between both standards for clarity purposes.

Committee Meeting Action: **Accept in Principle**

See Committee Proposals 1855-12 (Log #CP5), 1855-37 (Log # CP6) and 1855-43 (Log #CP7).

Committee Statement: The technical committee accepted the proposal in principle, and Proposals 1855-12 (Log #CP5), 1855-37 (Log # CP6) and 1855-43 (Log #CP7). See the recommendation for each of these Logs.

Number Eligible to Vote: 19

Ballot Results: Affirmative: 17

Ballot Not Returned: 2 Byrne, C., Paderick, H.

1855-2a Log #CP12 FAE-SCE
(Entire Document)

Final Action: Accept

Submitter: Technical Committee on Special Operations Protective Clothing and Equipment,
Recommendation: The technical committee on Special Operations Protective Clothing and Equipment proposes a new standard, NFPA 1855, *Selection, Care and Maintenance of Protective Ensembles for Technical Rescue Incidents*, here as shown at the end of this report.

Substantiation: NFPA 1855 specifies the minimum selection, care, and maintenance requirements for utility technical rescue protective, rescue and recovery technical rescue, and chemicals, biological agents, and radiological particulate [also known as chemical, biological, radiological, and nuclear (CBRN) technical rescue] ensembles and the individual ensemble elements that include garments, helmets, gloves, footwear, and interface components that are compliant with NFPA 1951, Standard on Protective Ensembles for Technical Rescue Incidents.

Committee Meeting Action: Accept

Number Eligible to Vote: 19

Ballot Results: Affirmative: 17

Ballot Not Returned: 2 Byrne, C., Paderick, H.

1855-3 Log #CP2 FAE-SCE
(Chapter 3)

Final Action: Accept

Submitter: Technical Committee on Special Operations Protective Clothing and Equipment,

Recommendation: Revise definition to read as follows:

~~3.3.2 Advanced Cleaning.~~ See 3.3.13, 20.1.

~~3.3.7 CBRN.~~ An abbreviation for chemicals, biological agents, and radiological particulate hazards. ~~(See also 3.3.16, CBRN Terrorism Agents.)~~ CP to delete this reference because it is unnecessary.

~~3.3.16* CBRN Terrorism Agents.~~ Chemicals, biological agents, and radiological particulates that could be released as the result of a terrorist attack. (See also 3.3.3, Biological Terrorism Agents; 3.3.19, Chemical Terrorism Agents; 3.3.75, 88, Radiological Particulate Terrorism Agents; and 3.3.124, Toxic Industrial Chemicals).

~~3.3.34 Decontamination.~~ The act of removing contaminants from protective clothing and equipment by a physical, chemical, or combined process. ~~(See also 3.3.20, Cleaning).~~

~~3.3.42* Ensemble Elements.~~ The compliant certified (individually) products that provide protection to the upper and lower torso, arms, legs, head, hands, and feet.

~~A.3.3.42 (add to end of existing text) "The utility and rescue and recovery elements are certified individually whereas CBRN elements are certified as part of an ensemble."~~

~~3.3.50 Footwear Upper.~~ The portion of the protective footwear element or item that includes, but is not limited to, the toe, vamp, quarter, shaft, collar, and throat, but not including the sole with heel, puncture-resistant device, and insole. That portion of the footwear element above the sole, heel, and insole.

~~3.3.55 Glove Body.~~ The part of the glove that extends from the tip of the fingers to 25 mm (1 in.) beyond the wrist crease. The part of the glove that extends from the tip of the fingers to the wrist crease or a specified distance beyond the wrist crease.

~~3.3.57 Glove Wristlet.~~ See 3.3.139, Wristlet.

~~3.3.60 Integrity.~~ The ability of an ensemble or ensemble element to remain intact and provide continued minimum performance.

~~3.3.67 Interface Area.~~ An area of the body where the protective garments, helmet, gloves, footwear, or SCBA respiratory protection facepiece meet. Interface areas include, but are not limited to, the coat/helmet/SCBA respiratory protection facepiece area; the coat/trouser area; the coat/glove area; and the trouser/footwear area.

~~3.3 X Item.~~ The individual compliant products consisting of protective clothing, protective equipment, auxiliary equipment, and supplementary equipment or tools.

~~A.3.3.X~~ An item is a non-certified part of an element or an ensemble that must be used with the complete certified element or certified ensemble.

~~3.3.72 Operations.~~

~~3.3.72.1 Search Operations.~~ Any land-based operations involving the search for victims or body recovery.

~~3.3.72.2 Technical Rescue Incidents.~~ Those activities directed at locating endangered persons, removing endangered persons from danger, treating the injured at an emergency incident, and providing transport to an appropriate health care facility.

~~3.3.94 Rescue and Recovery Technical Rescue Protective Glove Element.~~ The element of the certified rescue and recovery technical rescue protective ensemble that provides protection to the hand:

~~3.3.98 Routine Cleaning.~~ See 3.3.20-2.

~~3.3.99.1 Major A Seam.~~ Outermost layer seam assemblies where rupture could reduce the protection of the garment by exposing the garment's inner layers, and/or the wearer's station/work uniform, other clothing, or skin.

~~Asterisk 3.3.99.3~~

~~A.3.3.99.3 Minor Seam.~~ An example of a minor seam may be a seam in a comfort liner or a non-barrier liner.

~~3.3.109 Structural Fire Fighting.~~ The activities of rescue, fire suppression, and property conservation in buildings, enclosed structures, vehicles, marine vessels, or like properties that are involved in a fire or emergency situation:

~~3.3.122 Top Line.~~ The top edge of the protective footwear that includes the tongue, gusset, quarter, collar, and shaft:

~~3.3.125 Trench/Cave In Rescue.~~ The activity of rescue during the collapse or cave-in of a trench. A trench is deeper than it is wide:

~~3.3.131 Utility Technical Rescue Protective Glove Element.~~ The element of the certified utility technical rescue protective ensemble that provides protection to the hand and wrist.

~~3.3.134 Vehicle/Person Extrication.~~ The activity of removing a victim from a vehicle at the scene of an accident:

~~3.3.X Verified/Verification.~~ A system whereby a certification organization determines that an ISP or an organization has demonstrated the ability to conduct repairs that complies with the requirements of this standard, authorizes the ISP or

organization to use a verification mark that complies with the requirements of this standard, and establishes a follow-up program conducted by the certification organization as a check on the methods of repair used to determine continued compliance with the requirements of this standard.

3.3.137 Utility Sink. A separate sink used for cleaning, ~~and~~ ensembles, and ensemble elements and items.
Asterisk 3.3.138.

A.3.3.138 Visibility Markings. Retroreflective enhancements improve nighttime conspicuity, and fluorescent enhancements improve daytime conspicuity.

Substantiation: The technical committee is proposing these changes for the purpose of clarification, editorial corrections, adding project definitions, or correlation with other documents in the protective clothing and equipment project. In addition, the technical committee is providing explanatory text in Annexes and deleting definitions because they are not relevant or used in the standard.

Committee Meeting Action: Accept

Number Eligible to Vote: 19

Ballot Results: Affirmative: 17

Ballot Not Returned: 2 Byrne, C., Paderick, H.

1855-4 Log #1 FAE-SCE
(3.3.2 Advanced Cleaning)

Final Action: Accept

Submitter: Karen E. Lehtonen, Lion

Recommendation: Revise text to read as follows:

Advanced Cleaning. See ~~3.3.13.1~~ 3.3.20.1.

Substantiation: Correction of referenced paragraph.

Committee Meeting Action: Accept

Number Eligible to Vote: 19

Ballot Results: Affirmative: 17

Ballot Not Returned: 2 Byrne, C., Paderick, H.

1855-5 Log #2 FAE-SCE
(3.3.43 Face Shield)

Final Action: Accept

Submitter: Karen E. Lehtonen, Lion

Recommendation: Delete the definition of face shield.

Substantiation: Face shields are not required on technical rescue helmets nor is the term used in this document.

Committee Meeting Action: Accept

Number Eligible to Vote: 19

Ballot Results: Affirmative: 17

Ballot Not Returned: 2 Byrne, C., Paderick, H.

1855-6 Log #CP3 FAE-SCE
(4.1.4)

Final Action: Accept

Submitter: Technical Committee on Special Operations Protective Clothing and Equipment,

Recommendation: Revise the text in Chapter 4 as follows:

~~4.1.4 Manufacturers shall be allowed to exclude proprietary components or specific models from this care and maintenance program.~~

Substantiation: The technical committee proposes to delete this paragraph because it causes confusion and offers little clarification.

Committee Meeting Action: **Accept**

Number Eligible to Vote: 19

Ballot Results: Affirmative: 17

Ballot Not Returned: 2 Byrne, C., Paderick, H.

1855-7 Log #37 FAE-SCE
(Table 4.2.2)

Final Action: Accept

Submitter: Karen E. Lehtonen, Lion

Recommendation: In the title of the second column of the table change the reference from NFPA 1851 to NFPA 1855.

Substantiation: Incorrect standard reference in the table row heading.

Committee Meeting Action: **Accept**

Number Eligible to Vote: 19

Ballot Results: Affirmative: 17

Ballot Not Returned: 2 Byrne, C., Paderick, H.

1855-8 Log #56 FAE-SCE
(4.2.5)

Final Action: Accept in Principle

Submitter: Vicki Smith, LION Apparel

Recommendation: Revise text to read as follows:

Where the organization performs its own advanced inspection, advanced cleaning or basic repair, the organization shall be trained by the ensemble or ensemble element manufacturer, a Verified ISP or ~~an~~ ISP. Where the organization uses an ISP to perform advanced inspection, ~~or~~ advanced cleaning or basic repair, the ISP shall be trained by the ensemble or ensemble element manufacturer.

Substantiation: The standard creates two categories of Independent Service Provider (ISP) - Verified ISP and ISP. A Verified ISP has annual testing of repairs, facility inspection and their Quality Manual audited to verify continued compliance of all services provided. An ISP has not been evaluated for compliance to the standard; therefore should be trained by the manufacturer to perform these services and to train organizations to perform them. Manufacturer training should not be required by Verified ISPs.

Committee Meeting Action: **Accept in Principle**

Revise text to read as follows:

Where the organization performs its own advanced inspection, advanced cleaning, or basic repair, the organization shall be trained by the ensemble or ensemble element manufacturer, a Verified ISP or ~~an~~ ISP. Where the organization uses an ISP for training or to perform advanced inspection, ~~or~~ advanced cleaning or basic repair, the ISP shall be trained by the ensemble or ensemble element manufacturer.

Committee Statement: The technical committee accepted the proposal in principal, and added text indicating that where the organization uses an ISP for training, the ISP shall be trained by the ensemble or ensemble element manufacturer.

Number Eligible to Vote: 19

Ballot Results: Affirmative: 17

Ballot Not Returned: 2 Byrne, C., Paderick, H.

1855-9 Log #CP4 FAE-SCE
(Chapter 5)

Final Action: Accept

Submitter: Technical Committee on Special Operations Protective Clothing and Equipment,
Recommendation: Delete Chapter 5, and insert the following text:

5.1 General

5.1.1* The organization shall ensure that elements under consideration are certified as being compliant with NFPA 1951, Standard on Protective Ensembles for Technical Rescue Incidents, by a third-party certification organization.

5.1.2* The organization shall ensure that the ensembles and ensemble elements under consideration interface properly with other personal protective items with which they will be used.

5.1.3* Where a field evaluation of an ensemble or ensemble element is conducted, the organization shall establish criteria to ensure a systematic method of comparing products in a manner related to their intended use and assessing their performance relative to the organization's expectations.

5.1.4 Where a utility ensemble is identified, all elements shall be compliant with appropriate utility standards at a minimum.

5.1.5 Where a rescue/recovery ensemble is identified, all elements shall be compliant with appropriate rescue/recovery standards at a minimum.

5.2 Risk Assessments

5.2.1* Prior to starting the selection process of technical rescue protective ensembles and ensemble elements, the organization shall perform a risk assessment.

5.2.2 The risk assessment shall include, but not be limited to, the hazards that can be encountered by technical rescue personnel based on the following (see Table 5.2):

- (1) Type of duties performed
- (2) Frequency of use of ensemble elements
- (3) Organization's experiences
- (4) Incident operations
- (5) Geographic location and climate
- (6)* Likelihood of or response to CBRN terrorism incident

Insert Table 5.2 Log #CP4 here

5.2.3* The organization shall review the current edition of NFPA 1951, Standard on Protective Ensembles for Technical Rescue Incidents; NFPA 1994, Standard on Protective Ensembles for First Responders to CBRN Terrorism Incidents; NFPA 1500, Standard on Fire Department Occupational Safety and Health Program; NFPA 1670, Standard on Operations and Training for Technical Search and Rescue Incidents; and any applicable federal or state OSHA standards relating to technical rescue protective ensembles and ensemble elements to determine how they affect the selection process.

5.2.4* Based on the risk assessment, the organization shall compile and evaluate information on the comparative strengths and weaknesses of the elements under consideration.

5.2.5 Utility tech rescue ensemble shall be selected where there is no expectation of encountering liquid, body fluid, bloodborne pathogens or CBRN hazard.

5.2.6 Rescue/recovery ensemble shall be selected where there is an expectation of liquid, body fluid, or bloodborne pathogen hazard but not CBRN hazard.

5.3 Purchase

5.3.1* Where the organization develops purchase specifications, at least the following criteria shall be included:

(1) Purchase specifications shall require that the ensemble or ensemble element(s) to be purchased shall be compliant with the current edition of NFPA 1951, Standard on Protective Ensembles for Technical Rescue Incidents. Purchasers shall consider that certified CBRN technical rescue protective ensembles must be worn as an ensemble with all elements and interface components present as stated on the element label.

(2)* Where the organization selects criteria that exceed the minimum requirements of the current edition of NFPA 1951, such criteria shall be stipulated in the purchase specifications.

(3)* Purchase specifications shall require that manufacturers' bids include substantiation of certification for each element and model stated in the bid.

(4)* Where applicable, the purchase specifications shall define the process for determining proper fit.

(5)* The organization shall compare each bid submittal against purchase specifications.

5.3.2 Upon receipt, organizations shall inspect purchased protective ensemble element(s) to determine that they meet their specifications and that they were not damaged during shipment. Organizations shall also verify the quantity and sizes of the protective ensemble element(s) received.

5.3.3 Organizations shall examine information supplied with the products, such as instructions, warranties, and technical data.

5.3.4 Procedures shall be established for returning unsatisfactory products if the organization's specifications are not met.

Revise Annex items as follows:

A.5.1.4 is now A.5.1.1.

A.5.1.6 is now A.5.1.2.

A.5.1.7 is now A.5.1.3.

A.5.1.1 is now A.5.2.1.

A.5.1.3 is now A.5.2.3.

A.5.1.5 is now A.5.2.4.

A.5.1.8 is now A.5.3.1.

A.5.1.8 (2) is now A.5.3.1 (2).

A.5.1.8 (3) is now A.5.3.1 (3).

A.5.1.8 (4) is now A.5.3.1 (4).

A.5.1.8 (5) is now A.5.3.1 (5).

Substantiation: The technical committee proposes to better organize Chapter 5. It is also adding new requirements in the general section and risk assessment section, and a new hazards table.

Committee Meeting Action: **Accept**

Number Eligible to Vote: 19

Ballot Results: Affirmative: 17

Ballot Not Returned: 2 Byrne, C., Paderick, H.

1855-10 Log #3 FAE-SCE
(5.1.5.1 (New))

Final Action: Accept

Submitter: Karen E. Lehtonen, Lion

Recommendation: Add new text to read as follows:

As part of the risk assessment, the organization shall determine which type of Technical Rescue protection is needed: Utility Technical Rescue Protective Ensembles and Ensemble Elements, Rescue and Recovery Technical Rescue Protective Ensembles and Ensemble Elements or CBRN Technical Rescue Protective Ensembles. The organization shall also determine in the risk assessment if consideration is required for NFPA 1999, *Standard on Protective Clothing for Emergency Operations* is also needed.

Substantiation: There are three different types of ensembles and ensemble elements covered by NFPA 1951. The type of protection needed should be taken into consideration during the risk assessment. The added language will direct the organization to take this in to consideration during the risk assessment to evaluate what level is needed or what other standards should also be considered.

Committee Meeting Action: **Accept**

Number Eligible to Vote: 19

Ballot Results: Affirmative: 17

Ballot Not Returned: 2 Byrne, C., Paderick, H.

| Table 5.2 Risk Assessment | | | |
|--------------------------------------|-------------------|-------------------|-------------------|
| Hazards | Utility | Rescue/Recovery | CBRN |
| Falling Objects | Helmet | Helmet | Helmet |
| Shrapnel from small tool usage | X | X | X |
| Projectiles or ballistic objects | | | |
| Abrasive or rough surfaces | X | X | X |
| Sharp edges | X | X | X |
| Pointed objects | X | X | X |
| Slippery surfaces | Boots | Boots | Boots |
| Excessive vibration | | | |
| High heat and humidity (Heat Stress) | Garment Best | Garment Better | Garment Good |
| Ambient cold | | | |
| Wetness from tool work | | X | X |
| Rain (Inclement Weather) | | X | X |
| High wind | | X | X |
| Insufficient or bright light | | | |
| Excessive noise | | | |
| Chemical Inhalation | | | See NFPA 1981 |
| Chemical skin absorption | | Selected Liquids | Selected Vapors |
| Chemical ingestion or injection | | | X |
| Liquefied gas contact | | | |
| Chemical flash fire | Good | Better | Good |
| Chemical explosions | | | |
| High voltage | Boots? | Boots? | Boots? |
| Electrical arc flash | X See NFPA 70E | X See NFPA 70E | X See NFPA 70E |
| Static charge buildup | Boots | Boots | Boots |
| Ionization radiation | | | |
| Alpha | X | X | X |
| Beta | Attenuates | Attenuates | Attenuates |
| Gamma | | | |
| Xray | | | |
| Radiological Particulates | | | X |
| Daytime visibility | X | X | X |
| Nighttime visibility | X | X | X |
| High convective heat | Garment Low | Garment Low | Garment Low |
| Low radiant heat | Garment Low | Garment Low | Garment Low |
| High radiant heat | | | |
| Flame impingement | X | X | X |
| High Pressure Steam | | | |
| Hot liquids | | Selected | Selected |
| Molten metals | | | |
| Hot solids | | | |
| Hot surfaces | | | |

| | | | |
|--|-----------------|-------------------|--------------------|
| Bloodborne pathogens | | X | X |
| Airborne pathogens | | | X See NFPA 1981 |
| Biological particles (Toxins and Allergens) | | | X See NFPA 1981 |
| Falling | | | |
| Drowning | | | |
| Material incompatibility | | | |
| Ease of contamination | X | | |
| Thermal comfort | Garment Best | Garment Better | Garment Good |
| Range of motion | | | |
| Hand function | Gloves | Gloves | Gloves |
| Ankle support | Boots | Boots | Boots |
| Back Support | | | |
| Vision Protection | Goggles | Goggles | See NFPA 1981 |
| Communications ease | | | |
| Fit (poor) | X | X | X |
| Ease of donning and doffing | Gloves | Gloves | Gloves |

1855-11 Log #4 FAE-SCE
(5.1.6.1 (New))

Final Action: Accept

Submitter: Karen E. Lehtonen, Lion

Recommendation: Add new text to read as follows:

5.1.6.1 As a minimum the organization shall ensure the proper overlap between ensemble elements being used, including but not limited to coat to hood and helmet, coat to pant, coat to glove, and pants to footwear. Any other specialty equipment being used shall also be considered to ensure the equipment does not interfere with the proper function and interface of the protective ensemble or ensemble elements.

Substantiation: Additional attention should be given to the interface areas between elements during the selection process. Specific reference to the interface areas should be called out in this standard to ensure the proper attention is given.

Committee Meeting Action: Accept

Number Eligible to Vote: 19

Ballot Results: Affirmative: 17

Ballot Not Returned: 2 Byrne, C., Paderick, H.

1855-12 Log #CP5 FAE-SCE
(Chapter 6)

Final Action: Accept

TCC Action: The TCC directs the TC to consider Annex language that would explain the potential for some products to have inspections conducted of the interior lining.

Submitter: Technical Committee on Special Operations Protective Clothing and Equipment,

Recommendation: Revise Chapter 6 to read as follows:

~~6.2.2.4 (c) Loss of water resistance~~

6.3.2.1* The ensemble, ~~or ensemble element manufacturer, or a verified ISP Verified ISP, or ISP, trained by the element manufacturer,~~ and the organization shall determine the level of training required to perform advanced inspections. The ensemble, ~~or ensemble element manufacturer, or a verified ISP Verified ISP, or ISP, trained by the element manufacturer,~~ and the organization shall provide written documentation of training.

Delete section 6.3.5, and replace with the following text:

6.3.5* The advanced inspection shall include, as a minimum, the inspections specified in 6.3.5.1 through 6.3.5.7.

6.3.5.1* All separable layers of the garment elements shall be individually inspected for the following:

- (1) Soiling
- (2) Contamination
- (3)* Physical damage to all layers and sides of each layer, such as the following:
 - (a) Rips, tears, cuts, and abrasions
 - (b) Damaged or missing hardware
 - (c) Thermal damage (charring, burn holes, melting, discoloration of any layer)
- (4)* Physical damage to the barrier layer and each side of the barrier layer shall also be inspected for loss of barrier material integrity as indicated by any of the following:
 - (a) Rips, tears, cuts, or abrasions
 - (b) Discoloration
 - (c) Thermal damage
 - (d) Loose or missing barrier material seam tape
 - (e) Delamination as evidenced by separation of the film from substrate fabric, flaking or powdering.
- (5) Evaluation of system fit and coat/trouser overlap
- (6) Loss of seam integrity and broken or missing stitches
- (7)* Loss of material physical integrity [e.g., ultraviolet (UV) or chemical degradation] as evidenced by discoloration, significant changes in material texture, loss of material strength.
- (8) Loss of wristlet elasticity, stretching, runs, cuts, or burn holes
- (9)* Visibility marking integrity, attachment to garment, reflectivity, or damage
- (10)* Label integrity and legibility
- (11) Hook and loop functionality
- (12) Barrier attachment systems
- (13) Closure system functionality
- (14) Accessories for compliance with 4.2.3
- (15) Correct assembly and size compatibility of shell and barrier

6.3.5.2 Helmet elements shall be inspected for the following:

- (1) Soiling
- (2) Contamination
- (3) Physical damage to the shell such as the following:
 - (a) Cracks, dents, and abrasions
 - (b) Thermal damage to the shell (bubbling, soft spots, warping, or discoloration)
- (4) Damaged or missing components of the suspension and retention systems
- (5) Functionality of suspension and retention systems
- (6) Damage to the impact cap
- (7) Damaged or missing visibility markings
- (8) Accessories for compliance with 4.2.3

6.3.5.3 Glove elements shall be inspected for the following:

- (1) Soiling
- (2) Contamination
- (3)* Physical damage such as the following:

- (a) Rips, tears, and cuts
 - (b) Thermal damage (charring, burn holes, melting or discoloration of any layer)
 - (c) Inverted liner
 - (d) Loss of seam integrity or broken or missing stitches
- (4) Shrinkage
- (5) Loss of flexibility
- (6) Loss of elasticity and shape in wristlets
- (7) Accessories for compliance with 4.2.3
- 6.3.5.4 Footwear elements shall be inspected for the following:
- (1) Soiling
 - (2) Contamination
 - (3) Physical damage such as the following:
 - (a) Cuts, tears, punctures, cracking, or splitting
 - (b) Thermal damage (charring, burn holes, melting or discoloration of any layer)
 - (c) Exposed or deformed steel toe, steel midsole, or shank
 - (d) Loss of seam integrity, delamination, or broken or missing stitches
 - (4) Loss of water resistance as determined by Section 12.4, Footwear Water Resistance Evaluation.
 - (5) Closure system component damage and functionality
 - (6)* Excessive tread wear
 - (7) Condition of lining such as the following:
 - (a) Tears
 - (b) Excessive wear
 - (c) Separation from outer layer
 - (8) Heel counter failure
 - (9) Accessories for compliance with 4.2.3
- 6.3.5.5 Goggles elements shall be inspected for the following:
- (1) Damaged or missing components of the including discoloration or scratches to the lens limiting visibility
 - (2) Functionality of element components
- 6.3.5.6 Hood elements shall be inspected for the following:
- (1) Soiling
 - (2) Contamination
 - (3) Physical damage such as the following:
 - (a) Rips, tears, and cuts
 - (b) Thermal damage (charring, burn holes, melting, discoloration of any layer)
 - (4) Shrinkage
 - (5) Loss of material elasticity or stretching out of shape
 - (6) Loss of seam integrity or broken or missing stitches
 - (7) Loss of face-opening adjustment
- 6.3.5.7 Interface components shall be inspected for the following:
- (1) Soiling
 - (2) Contamination
 - (3) Physical damage
 - (4) Loss or reduction of properties that allow component to continue as effective interface, such as loss of shape or inability to remain attached to the respective element(s), if attachment is required
 - (5) Loss of seam integrity and broken or missing stitches

Delete A.6.3.5.1(4) and replace with the following text:

A.6.3.5.1(4) While all materials and components in garment elements are susceptible to different types of damage from wear or abuse, the barrier material is one of the most difficult parts of the rescue and recovery technical rescue protective (or CBRN technical rescue) garment element to inspect and evaluate. That is because the film or coating side of most barrier materials may be hidden from easy examination. Even if a garment element is equipped with a means of viewing the film or coating side, it may be difficult to conduct a visual evaluation of the barrier material film or coating. Even a physical examination of the barrier material film or coating side will not detect all types of damage or defects that can lead to loss of liquid penetration resistance for the garment element. Barrier material coatings or films can become abraded, tear, or have pinholes from use. In severe cases, the degradation in some barrier materials can take the form of separation, cracking, or flaking. Tapes used on barrier material seams, to ensure garment element integrity against liquid penetration, can crack, lift, or completely separate. Because only the most obvious damage is usually observable, the following field evaluation procedure may be used. In addition to potential areas of damage to the garment, the front

and back body panels of each protective garment element should be evaluated using three different barrier material areas and three different barrier areas with a seam. Evaluation areas should be from high-abrasion areas of the garment elements, including, but not limited to:

- (1) Broadest part of the shoulders
- (2) Back waist area of the coat
- (3) Knees
- (4) Crotch area
- (5) Seat area

An alcohol-tap water mixture should be made by combining 1 part rubbing alcohol, 70 percent isopropanol alcohol with 6 parts of tap water. A 5 gal bucket or similar container with a 12" diameter should be used to support the barrier during evaluation. The evaluation procedure should be performed at room temperature. The evaluation should be conducted using the following procedure:

- (1) If possible, separate the barrier from the outer shell.
- (2) Orient the liner such that the barrier material is on the outside.
- (3) Position the dry barrier over the bucket with the innermost layer facing down and the interior layer facing up.
- (4) Cup the barrier area that is being evaluated, so that it is lower than the surrounding barrier.
- (5) Pour 1 cup of the alcohol-tap water mixture onto the barrier material in the cupped area of the liner.

The barrier should be visually inspected for leakage on the innermost layer side after 1 minute. If any liquid passes through the barrier material and wets the barrier material or other interior layer, the barrier should be removed from service and evaluated per Section 6.4. After the evaluation procedure has been performed, the barrier should be cleaned and allowed to completely dry to remove all traces of the alcohol-tap water mixture.

Revise text as follows:

6.4.3* ~~Complete liner barrier inspection of all garment elements shall be conducted at a minimum after 3 years in service and annually thereafter or whenever advanced inspections indicate that a problem might exist. The liner barrier system shall be opened to expose all layers for inspection and testing.~~

[Delete A.6.4.3.1]

~~6.4.3.*1 A complete liner inspection of all garment elements shall be conducted after 2 years in service and annually thereafter following replacement of the barrier, the CBRN barrier, or both.~~

Delete 6.4.5.1 and renumber following paragraphs.

Revise the following sections:

- 6.3.6.2 Change "liner" to "barrier".
- 6.4.2.1 Change "liner" to "barrier".
- 6.4.4 Change "liner" to "barrier".
- 6.4.5 Change "liner" to "barrier."

Substantiation: The technical committee proposes to revise the text in Chapter 6 for the following reasons:

6.2.2.4 (c) - There is no way to evaluate visually.

6.3.2.1 The TC is adding this proposed text to clarify the distinction between ISPs and Verified ISPs.

6.4.5.1 - The TC is deleting the text of 6.4.5.1 because it believes that this text fits better with the advanced inspection rather than the complete liner inspection.

6.3.5.4.4 (4) The TC is adding a new paragraph because it wanted to clarify the loss of water resistance.

6.4 The TC is proposing to delete this paragraph because it believes that this modification creates a new balance of evaluation for leakage after use.

Committee Meeting Action: Accept

Number Eligible to Vote: 19

Ballot Results: Affirmative: 17

Ballot Not Returned: 2 Byrne, C., Paderick, H.

1855-13 Log #5 FAE-SCE
(6.2.2.1(6) (New))

Final Action: Accept

Submitter: Karen E. Lehtonen, Lion

Recommendation: Add new text to read as follows:

(6) Damaged, detached or missing visibility markings: when present.

Substantiation: Although visibility markings are not mandatory in NFPA 1951 if they are present they should be inspected.

Committee Meeting Action: Accept

Number Eligible to Vote: 19

Ballot Results: Affirmative: 17

Ballot Not Returned: 2 Byrne, C., Paderick, H.

1855-14 Log #6 FAE-SCE
(6.2.2.2(4))

Final Action: Accept

Submitter: Karen E. Lehtonen, Lion

Recommendation: Revise text to read as follows:

(4) Physical damage to ~~the ear flaps~~ any fabric components on the helmet such as the following:

(a) Rips, tears, and cuts

(b) Thermal damage (charring, burn holes, melting)

Substantiation: Technical Rescue helmets are not required to have ear flaps. However since there may be fabric components or ear flaps provided they should be included in an inspection.

Committee Meeting Action: Accept

Number Eligible to Vote: 19

Ballot Results: Affirmative: 17

Ballot Not Returned: 2 Byrne, C., Paderick, H.

1855-15 Log #7 FAE-SCE
(6.2.2.2(6))

Final Action: Accept

Submitter: Karen E. Lehtonen, Lion

Recommendation: Revise text to read as follows:

(6) Damaged or missing ~~reflective~~ visibility markings: when present.

Substantiation: The first change corrects the terminology from reflective markings to visibility markings. The second change identifies these should be inspected when present as visibility markings are not mandatory in NFPA 1951.

Committee Meeting Action: Accept

Number Eligible to Vote: 19

Ballot Results: Affirmative: 17

Ballot Not Returned: 2 Byrne, C., Paderick, H.

1855-16 Log #44 FAE-SCE
(6.2.2.4(c))

Final Action: Accept

Submitter: James M. Baker, TotalCare

Recommendation: Exposed or deformed steel toe, steel midsole, or shank.

New / Exposed or deformed protective toe, protective midsole, or shank.

Substantiation: The document assumes that boots will always use steel to protect the toe and midsole. The standard should allow for other technologies that may replace steel.

Committee Meeting Action: Accept

Revise text to read as follows:

6.2.2.4 (c) Exposed or deformed ~~steel~~ protective toe, ~~steel~~ protective midsole, or shank.

Number Eligible to Vote: 19

Ballot Results: Affirmative: 17

Ballot Not Returned: 2 Byrne, C., Paderick, H.

1855-17 Log #57 FAE-SCE
(6.3.1)

Final Action: Accept in Principle

Submitter: Vicki Smith, LION Apparel

Recommendation: Revise text to read as follows:

Advanced inspection and any necessary testing shall be performed by a verified ISP, ISP, or the organization's trained personnel.

Substantiation: The standard must clearly differentiate between an ISP and a verified ISP, and the fact that ISPs which are under no scrutiny must have manufacturers' training to perform advanced inspection and to train organizations on advanced inspection. Verified ISPs on the other hand have chose to invest in developing NFPA 1851 compliant processes and have chosen to have these processes scrutinized and deemed acceptable by a third party certification organization.

Committee Meeting Action: Accept in Principle

Revise text to read as follows:

Advanced inspection and any necessary testing shall be performed by a Verified ISP, ISP, or the organization's trained personnel.

Committee Statement: The technical committee accepted the proposal in principle, and provides the amended text as indicated in the meeting action (capitalizing V in verified).

Number Eligible to Vote: 19

Ballot Results: Affirmative: 17

Ballot Not Returned: 2 Byrne, C., Paderick, H.

1855-18 Log #64 FAE-SCE
(6.3.2.1)

Final Action: Accept in Principle

Submitter: Vicki Smith, LION Apparel

Recommendation: Revise text to read as follows:

The ensemble or ensemble element manufacturer σ , a verified ISP or an ISP and the organization shall determine the level of training required to perform advanced inspection. The ensemble or ensemble element manufacturer σ , a verified ISP or an ISP shall provide written verification of training.

Substantiation: The standard must clearly differentiate between an ISP and a verified ISP. On services that both are able to provide, they should be noted separately in order to provide consistency throughout the standard.

Committee Meeting Action: Accept in Principle

See Committee Action on Proposal 1855-12 (Log #CP5).

Committee Statement: The technical committee accepted the proposal in principle, and is providing text that addresses this issue in Proposal 1855-12 (Log #CP5).

Number Eligible to Vote: 19

Ballot Results: Affirmative: 17

Ballot Not Returned: 2 Byrne, C., Paderick, H.

1855-19 Log #8 FAE-SCE
(6.3.3)

Final Action: Accept in Principle

Submitter: Karen E. Lehtonen, Lion

Recommendation: Revise text to read as follows:

Advanced inspections of all protective ensemble elements even if not issued and used, shall be conducted at a minimum of every 12 months, or whenever routine inspections indicate that a problem could exist.

Substantiation: In other SCAM documents, there is confusion in the field regarding this paragraph and if advanced inspections are required annually even if the ensemble or ensemble element is not issued or used. The added language is intended to clarify the committee intent assuming the advanced inspection is required annually regardless of the element being issued or used. See also 7.3.3 for reference.

Committee Meeting Action: Accept in Principle

Revise text to read as follows:

6.3.3 Advanced inspections of all protective ensemble elements that are issued and used shall be conducted at a minimum of every 12 months, or whenever routine inspections indicate that a problem could exist.

6.2.1 Individual members shall conduct a routine inspection of their protective ensembles and ensemble elements upon issue and after each use.

Committee Statement: The technical committee accepted the proposal in principle, and provided the text as shown in the meeting action to address the issue.

Number Eligible to Vote: 19

Ballot Results: Affirmative: 17

Ballot Not Returned: 2 Byrne, C., Paderick, H.

1855-20 Log #43 FAE-SCE
(6.3.4)

Final Action: Accept in Principle

Submitter: James M. Baker, TotalCare

Recommendation: The findings of the advanced inspection shall be documented on an inspection form.

Add: This form may be paper, electronic or any type of permanent record.

Substantiation: The statement causes the user to assume they must use a paper form.

Committee Meeting Action: Accept in Principle

Revise text to read as follows:

6.3.4 The findings of the advanced inspection shall be documented ~~on an inspection form.~~

Committee Statement: The technical committee accepted the proposal in principal, and provided the text as shown in the meeting action.

Number Eligible to Vote: 19

Ballot Results: Affirmative: 17

Ballot Not Returned: 2 Byrne, C., Paderick, H.

1855-21 Log #13 FAE-SCE
(6.3.5)

Final Action: Accept

Submitter: Karen E. Lehtonen, Lion

Recommendation: Revise text to read as follows:

The advanced inspection shall include, as a minimum, the inspections specified in 6.3.5.1 through 6.3.5.7 and for garment elements only the testing specified in ~~Section 12.1 and~~ Section 12.2.

Substantiation: Technical rescue garments do not include thermal liners. Therefore the testing specified in Section 12.1 should not apply to these types of garments. There are additional proposals to delete this test from the standard.

Committee Meeting Action: Accept

Number Eligible to Vote: 19

Ballot Results: Affirmative: 17

Ballot Not Returned: 2 Byrne, C., Paderick, H.

1855-22 Log #9 FAE-SCE
(6.3.5.1(8))

Final Action: Accept

Submitter: Karen E. Lehtonen, Lion

Recommendation: Revise text to read as follows:

(8) Loss of wristlet elasticity, stretching, runs, cuts, or burn holes: where present

Substantiation: Wristlets are not mandatory for garments in NFPA 1951 however if they are present they should be inspected.

Committee Meeting Action: Accept

Number Eligible to Vote: 19

Ballot Results: Affirmative: 17

Ballot Not Returned: 2 Byrne, C., Paderick, H.

1855-23 Log #10 FAE-SCE
(6.3.5.1(9))

Final Action: Accept

Submitter: Karen E. Lehtonen, Lion

Recommendation: Revise text to read as follows:

(9) ~~Reflective~~ Visibility marking integrity, attachment to garment, reflectivity or damage; when present

Substantiation: The first change corrects the terminology from reflective markings to visibility markings. The second change identifies these should be inspected when present as visibility markings are not mandatory in NFPA 1951.

Committee Meeting Action: Accept

Number Eligible to Vote: 19

Ballot Results: Affirmative: 17

Ballot Not Returned: 2 Byrne, C., Paderick, H.

1855-24 Log #52 FAE-SCE
(6.3.5.2)

Final Action: Accept

Submitter: James M. Baker, TotalCare

Recommendation: Add new text to read as follows:

Label integrity and legibility.

Substantiation: Label integrity and legibility is required for record keeping.

Committee Meeting Action: Accept

Number Eligible to Vote: 19

Ballot Results: Affirmative: 17

Ballot Not Returned: 2 Byrne, C., Paderick, H.

1855-25 Log #11 FAE-SCE
(6.3.5.2(6))

Final Action: Accept

Submitter: Karen E. Lehtonen, Lion

Recommendation: Revise text to read as follows:

(6) Damage to the impact cap; where present

Substantiation: Impact caps are not required per NFPA 1951, however if they are present they should be inspected.

Committee Meeting Action: Accept

Number Eligible to Vote: 19

Ballot Results: Affirmative: 17

Ballot Not Returned: 2 Byrne, C., Paderick, H.

1855-26 Log #12 FAE-SCE
(6.3.5.2(7))

Final Action: Accept

Submitter: Karen E. Lehtonen, Lion

Recommendation: Revise text to read as follows:

(7) Damaged or missing ~~reflective~~ visibility markings; when present

Substantiation: The first change corrects the terminology from reflective markings to visibility markings. The second change identifies these should be inspected when present as visibility markings are not mandatory in NFPA 1951.

Committee Meeting Action: Accept

Number Eligible to Vote: 19

Ballot Results: Affirmative: 17

Ballot Not Returned: 2 Byrne, C., Paderick, H.

1855-27 Log #51 FAE-SCE
(6.3.5.3)

Final Action: Accept

Submitter: James M. Baker, TotalCare

Recommendation: Add new text to read as follows:

Label integrity and legibility.

Substantiation: Label integrity and legibility is required for record keeping.

Committee Meeting Action: **Accept**

Number Eligible to Vote: 19

Ballot Results: Affirmative: 17

Ballot Not Returned: 2 Byrne, C., Paderick, H.

1855-28 Log #50 FAE-SCE
(6.3.5.4)

Final Action: Accept

Submitter: James M. Baker, TotalCare

Recommendation: Add new text to read as follows:

Label integrity and legibility.

Substantiation: Label integrity and legibility is required for record keeping.

Committee Meeting Action: **Accept**

Number Eligible to Vote: 19

Ballot Results: Affirmative: 17

Ballot Not Returned: 2 Byrne, C., Paderick, H.

1855-29 Log #49 FAE-SCE
(6.3.5.5)

Final Action: Accept

Submitter: James M. Baker, TotalCare

Recommendation: Add new text to read as follows:

Label integrity and legibility.

Substantiation: Label integrity and legibility is required for record keeping.

Committee Meeting Action: **Accept**

Number Eligible to Vote: 19

Ballot Results: Affirmative: 17

Ballot Not Returned: 2 Byrne, C., Paderick, H.

1855-30 Log #48 FAE-SCE
(6.3.5.6)

Final Action: Accept

Submitter: James M. Baker, TotalCare

Recommendation: Add new text to read as follows:

Label integrity and legibility.

Substantiation: Label integrity and legibility is required for record keeping.

Committee Meeting Action: **Accept**

Add this proposal as a new (8).

Number Eligible to Vote: 19

Ballot Results: Affirmative: 17

Ballot Not Returned: 2 Byrne, C., Paderick, H.

1855-31 Log #54 FAE-SCE
(6.4 and 12.2)

Final Action: Accept in Principle

Submitter: Daniel J. Gohlke, W. L. Gore and Associates

Recommendation: Delete Section 2.1.

Move Section 12.2 to Section 12.1.

Move Section 6.4 to Section 12.2.

Delete Section 6.4.3 (now Section 12.2.3).

Section 12.2.5.2 (now Section 12.1.5.2) change "evaluated per Section 6.4" to evaluated per Section 12.2".

Substantiation: This makes the sequencing of advanced inspection, puddle test, complete barrier inspection, hydrostatic test, replace or repair much easier to follow.

Committee Meeting Action: **Accept in Principle**

See Committee Action on Proposal 1855-12 (Log #CP5).

Committee Statement: The technical committee accepted the proposal in principal, and created a committee proposal to address this issue. See Proposal 1855-12 (Log #CP5).

Number Eligible to Vote: 19

Ballot Results: Affirmative: 17

Ballot Not Returned: 2 Byrne, C., Paderick, H.

1855-32 Log #65 FAE-SCE
(6.4.1)

Final Action: Accept in Principle

Submitter: Vicki Smith, LION Apparel

Recommendation: Revise text to read as follows:

Complete liner inspection of all rescue and recovery technical rescue garments and CBRN technical rescue garment elements shall be performed by a verified ISP, ISP or the organization's trained personnel.

Substantiation: The standard must clearly differentiate between an ISP and a verified ISP. On services that both are able to provide, they should be noted separately in order to provide consistency throughout the standard.

Committee Meeting Action: **Accept in Principle**

See Committee Action on Proposal 1855-12 (Log #CP5).

Committee Statement: The technical committee accepted the proposal in principle, and provided text as shown in Proposal 1855-12 (Log #CP5).

Number Eligible to Vote: 19

Ballot Results: Affirmative: 17

Ballot Not Returned: 2 Byrne, C., Paderick, H.

1855-33 Log #66 FAE-SCE
(6.4.2.1)

Final Action: Accept in Principle

Submitter: Vicki Smith, LION Apparel

Recommendation: Revise text to read as follows:

The garment element manufacturer or, a verified ISP or ISP and the organization shall determine the level of training required to perform complete liner inspections. The garment element manufacturer or, verified ISP or ISP shall provide written verification of training.

Substantiation: The standard must clearly differentiate between an ISP and a verified ISP. On services that both are able to provide, they should be noted separately in order to provide consistency throughout the standard.

Committee Meeting Action: Accept in Principle

See Committee Action on Proposal 1855-12 (Log #CP5).

Committee Statement: The technical committee accepted the proposal in principle, and provided text as shown in Proposal 1855-12 (Log #CP5).

Number Eligible to Vote: 19

Ballot Results: Affirmative: 17

Ballot Not Returned: 2 Byrne, C., Paderick, H.

1855-34 Log #14 FAE-SCE
(6.4.3)

Final Action: Accept in Principle

Submitter: Karen E. Lehtonen, Lion

Recommendation: Revise text to read as follows:

Complete liner inspection of all Rescue and Recovery garment elements shall be conducted at a minimum after 3 years in service and annually thereafter or whenever advanced inspections indicate that a problem might exist. ~~The liner system shall be opened to expose all layers~~ The barrier layer shall be exposed for inspection and testing.

Substantiation: Rescue and Recovery Technical Rescue garments do not have liner systems. However it should be clear that the barrier layer should be exposed for the inspection and testing. Additional language may be required for inspection of trilaminate barrier type construction.

Committee Meeting Action: Accept in Principle

See Committee Action on Proposal 1855-12 (Log #CP5).

Committee Statement: The technical committee accepted the proposal in principle, and provided the revised text as seen in Proposal 1855-12 (Log #CP5) to address this issue.

Number Eligible to Vote: 19

Ballot Results: Affirmative: 17

Ballot Not Returned: 2 Byrne, C., Paderick, H.

1855-35 Log #15 FAE-SCE
(6.4.5.1(3))

Final Action: Accept in Principle

Submitter: Karen E. Lehtonen, Lion

Recommendation: Revise text to read as follows:

Material physical integrity; UV or chemical degradation as evidenced by discoloration, significant changes in material texture or loss of material strength, ~~loss of liner material, or shifting of liner material:~~

Substantiation: Technical Rescue garments do not have liner systems.

Committee Meeting Action: Accept in Principle

See Committee Action on Proposal 1855-12 (Log #CP5).

Committee Statement: The technical committee accepted the proposal in principle, and provided the revised text as seen in 1855-12 (Log #CP5) to address this issue.

Number Eligible to Vote: 19

Ballot Results: Affirmative: 17

Ballot Not Returned: 2 Byrne, C., Paderick, H.

1855-36 Log #55 FAE-SCE
(6.5.4.2, 12.3.5.1, and 12.3.5.2)

Final Action: Reject

Submitter: Daniel J. Gohlke, W. L. Gore and Associates

Recommendation: 6.4.5.2 delete "and shall show no leakage"

New 12.3.5.1 Barrier materials and seams shall be repaired or replaced if discrete droplets appear in all (6) test sites, or if discrete droplets appear in 4 or more locations within any one test site, or if water flows continuously in any test site.

New 12.3.5.2 After testing the liner shall be allowed to dry completely before repairing if needed, and before returning to service.

Substantiation: The criteria in NFPA 1971 for determining whether a moisture barrier needs to be repaired or replaced has led to unnecessary repairs and replacements of moisture barriers. This proposition is evidenced by many fire departments spending lots of money on repairs and replacements to garments which are performing satisfactorily and effectively in the field. Some departments have chosen not to implement NFPA 1851 in whole or in part because of this discrepancy.

The integrity of NFPA 1971 garments and NFPA 1951 garments is controlled by the shower test. Not all leaks are found by the shower test. So a no leak strategy for NFPA 1851 and 1855 for the maintenance of NFPA 1971 and NFPA 1951 garments is overkill, is inconsistent with the product performance requirements of the respective product standard.

There are many possible modifications to the inspection regime for finding leaks that would reduce the level of scrutiny. This proposal suggests that the criterion for implementing repairs be graded, so that serious flaws and failures (continuous flow, or many discrete droplets) get repaired, but that small leaks (few discrete droplets) are discounted.

Committee Meeting Action: Reject

Committee Statement: The technical committee rejected the comment, and directs the reader to Proposal 1855-54 (Log #CP11).

Number Eligible to Vote: 19

Ballot Results: Affirmative: 17

Ballot Not Returned: 2 Byrne, C., Paderick, H.

1855-37 Log #CP6 FAE-SCE
(Chapter 7)

Final Action: Accept

Submitter: Technical Committee on Special Operations Protective Clothing and Equipment,

Recommendation: Revise Chapter 7 to read as follows:

7.3.9.1 Change "Liner" to "Barrier"

7.3.9.2 Change "Liner" to "Barrier"

7.3.13 Change "Liner" to "Barrier"

7.2.3.6 (8) Elements shall be dried in accordance with Section 7.4 not be machine dried using equipment that produces mechanical action from tumbling or agitation.

7.2.4 Additional Requirements for Routine Cleaning of Garment and Hood Elements:

~~7.2.4.2 To avoid cross contamination, garment element layers shall be isolated whenever possible.~~

7.2.4.3 Cleaning of the entire garment element shall be accomplished if garment requires more than spot cleaning, entire garment shall be cleaned using advanced cleaning procedures.

~~7.2.5 Additional Requirements for Routine Cleaning of Helmet Elements:~~

~~7.2.5.1 If it is necessary to totally immerse the helmet, the impact cap shall be separated from the helmet shell. Each element component shall be washed and dried separately before reassembly.~~

~~7.2.5.2 Solvents shall not be used to clean or decontaminate helmets or helmet components. The manufacturer shall be consulted if stronger cleaning agents are required.~~

~~7.2.5.3 Helmets shall not be machine dried using equipment that produces mechanical action from tumbling or agitation.~~

~~7.2.6 Additional Requirements for Routine Cleaning of Glove Elements. Glove elements shall not be machine dried using equipment that produces mechanical action from tumbling or agitation.~~

~~7.2.7 Additional Requirements for Routine Cleaning of Footwear Elements. Footwear elements shall not be machine dried using equipment that produces mechanical action from tumbling or agitation.~~

~~7.2.8 Additional Requirements for Routine Cleaning of Goggles Elements. Goggles elements shall not be machine dried using equipment that produces mechanical action from tumbling or agitation.~~

7.3.1 Advanced cleaning shall be performed by a ~~verified~~ Verified ISP, or ISP, trained by the element manufacturer or the organization's trained personnel.

7.3.4 The training of the organization's personnel shall be performed by the element manufacturer or a ~~verified~~ Verified ISP, or ISP, trained by the element manufacturer, who will provide written documentation of training.

~~7.3.7 (10) All tools and accessories shall be removed and not machine washed.~~

~~7.4.3 (7) All tools and accessories shall be removed and not machine dried.~~

Substantiation: The technical committee proposes to revise Chapter 7 for the following reasons:

7.2.3.6 (8) - The risk of damage in the routine cleaning frequency may impact the durability of the product therefore should not be utilized during basic cleaning.

7.2.4 - Hoods are not addressed in this section.

7.2.4.2 - This text is redundant with 7.2.3.2.

7.2.4.3 - Cleaning the entire garment is not necessary every time if only spot cleaning is required.

7.2.5 through 7.2.8 - This text is more applicable to an advanced cleaning process, not a routine cleaning process.

7.3.1 - The upper case V indicates third-party verified.

7.3.4 - The upper case V indicates third-party verified.

7.3.4 (7) -Tools and accessories can damage garments during the drying process.

7.3.7 -Tools and accessories can damage garments during the washing process.

Committee Meeting Action: Accept

Number Eligible to Vote: 19

Ballot Results: Affirmative: 17

Ballot Not Returned: 2 Byrne, C., Paderick, H.

1855-38 Log #17 FAE-SCE
(7.2.5.1)

Final Action: Accept in Principle

Submitter: Karen E. Lehtonen, Lion

Recommendation: Revise text to read as follows:

If it is necessary to totally immerse the helmet, the impact cap, where present, shall be separated from the helmet shell. Each element component shall be washed and dried separately before reassembly.

Substantiation: Helmets are not required to have an impact cap, therefore this should apply only when present.

Committee Meeting Action: Accept in Principle

See Committee Action on Proposal 1855-37 (Log #CP6).

Committee Statement: The technical committee accepted the proposal in principle, and provided the revised text as seen in Proposal 1855-37 (Log #CP6) to address this issue.

Number Eligible to Vote: 19

Ballot Results: Affirmative: 17

Ballot Not Returned: 2 Byrne, C., Paderick, H.

1855-39 Log #16 FAE-SCE
(7.2.5.3, 7.2.6, 7.2.7, and 7.2.8)

Final Action: Accept in Principle

Submitter: Karen E. Lehtonen, Lion

Recommendation: Revise text to read as follows:

7.2.5.3 Helmets shall not be machine cleaned or dried using equipment that produces mechanical action from tumbling or agitation.

7.2.6 Additional Requirements for Routine Cleaning of Glove Elements. Glove elements shall not be machine cleaned or dried using equipment that produces mechanical action from tumbling or agitation.

7.2.7 Additional Requirements for Routine Cleaning of Footwear Elements. Footwear elements shall not be machine cleaned or dried using equipment that produces mechanical action from tumbling or agitation.

7.2.8 Additional Requirements for Routine Cleaning of Goggle Elements. Goggle elements shall not be machine cleaned or dried using equipment that produces mechanical action from tumbling or agitation.

Substantiation: These requirements should also include cleaning since this is the cleaning section of the chapter. If this was only intended to relate to drying then these paragraphs should be moved to the drying section of the chapter.

Committee Meeting Action: Accept in Principle

See Committee Action on Proposal 1855-37 (Log #CP6).

Committee Statement: The technical committee accepted the proposal in principle, and provided the revised text as seen in Proposal 1855-37 (Log #CP6) to address this issue.

Number Eligible to Vote: 19

Ballot Results: Affirmative: 17

Ballot Not Returned: 2 Byrne, C., Paderick, H.

1855-40 Log #58 FAE-SCE
(7.3.1)

Final Action: Accept in Principle

Submitter: Vicki Smith, LION Apparel

Recommendation: Revise text to read as follows:

Advanced cleaning and any necessary testing shall be performed by a verified ISP, ISP, or the organization's trained personnel.

Substantiation: The standard must clearly differentiate between an ISP and a verified ISP, and the fact that ISPs which are under no scrutiny must have manufacturers' training to perform advanced cleaning and to train organizations on advanced cleaning. Verified ISPs on the other hand have chosen to invest in developing NFPA 1851 complaint processes and have chosen to have these processes scrutinized and deemed acceptable by a third party certification organization.

Committee Meeting Action: **Accept in Principle**

See Committee Action on Proposal 1855-37 (Log #CP6).

Committee Statement: The technical committee accepted the proposal in principle, and provides the text addressing this issue in Proposal 1855-37 (Log #CP6).

Number Eligible to Vote: 19

Ballot Results: Affirmative: 17

Ballot Not Returned: 2 Byrne, C., Paderick, H.

1855-41 Log #59 FAE-SCE
(7.3.7)

Final Action: Accept in Principle

Submitter: Vicki Smith, LION Apparel

Recommendation: The following procedures shall be used for machine washing:

- (1)* The machine shall not be overloaded.
- (2)* Heavily soiled or spotted areas shall be pretreated. Chlorine bleach, chlorinated solvents, active-ingredient cleaning agents, or solvents shall not be used without the ensemble or ensemble element manufacturer's approval.
- (3) All closures, including pocket closures, hooks and loops, snaps, zippers, and hooks and dees shall be fastened.
- (4) All garments should be placed into a mesh laundry bag for machine cleaning.
- ~~(4)*~~ (5)* Water temperature shall not exceed 40°C (105°F).
- ~~(5)*~~ (6) A mild detergent with a pH range of not less than 6.0 pH and not greater than 10.5 pH as indicated on the product MSDS or original product container shall be used.
- ~~(6)*~~ (7)* Washing machines with the capability of drum RPM adjustment shall be adjusted so the g-force does not exceed 100 g for all elements.
- ~~(7)*~~ (8) Machine manufacturer's instructions shall be followed for proper setting or program selection for the specific element being washed.
- ~~(8)*~~ (9) The element shall be inspected and rewashed if necessary.
- ~~(9)*~~ (10)* Where the machine is also used to wash items other than protective ensemble, it shall be rinsed out by running the machine without a laundry load through a complete cycle with detergent and filled to the maximum level with water at a temperature of 49°C to 52°C (120°F to 125°F).

Substantiation: Garments should be placed in a mesh laundry bag for machine cleaning so the moisture barrier, which is not sandwiched between other materials, is not damaged by rough spots, burns, or sharp edges that could be present in the drum of the washer-extractor.

Committee Meeting Action: Accept in Principle

Revise text to read as follows:

The following procedures shall be used for machine washing:

- (1)* The machine shall not be overloaded.
- (2)* Heavily soiled or spotted areas shall be pretreated. Chlorine bleach, chlorinated solvents, active-ingredient cleaning agents, or solvents shall not be used without the ensemble or ensemble element manufacturer's approval.
- (3) All closures, including pocket closures, hooks and loops, snaps, zippers, and hooks and dees shall be fastened.
- (4) All garments and separable barriers shall be placed into a mesh laundry bag for machine cleaning.
- ~~(4)*~~ (5)* Water temperature shall not exceed 40°C (105°F).
- ~~(5)*~~ (6) A mild detergent with a pH range of not less than 6.0 pH and not greater than 10.5 pH as indicated on the product MSDS or original product container shall be used.
- ~~(6)*~~ (7)* Washing machines with the capability of drum RPM adjustment shall be adjusted so the g-force does not exceed 100 g for all elements.
- ~~(7)*~~ (8) Machine manufacturer's instructions shall be followed for proper setting or program selection for the specific element being washed.
- ~~(8)*~~ (9) The element shall be inspected and rewashed if necessary.
- ~~(9)*~~ (10)* Where the machine is also used to wash items other than protective ensemble, it shall be rinsed out by running the machine without a laundry load through a complete cycle with detergent and filled to the maximum level with water at a temperature of 49°C to 52°C (120°F to 125°F).

Committee Statement: The technical committee revised the text to clarify the intention of the section.

Number Eligible to Vote: 19

Ballot Results: Affirmative: 17

Ballot Not Returned: 2 Byrne, C., Paderick, H.

1855-42 Log #47 FAE-SCE
(7.3.7(10))

Final Action: Accept

Submitter: James M. Baker, TotalCare

Recommendation: 7.3.7(10)

ADD – Cleaning and soaking agents shall not leave any residue or cause any degrading of the ensemble or ensemble elements.

Substantiation: Preliminary testing of some products show a residue after cleaning. This issue is of particular concern with the moisture barrier. It appears that this residue can cause premature seam tape failures.

Committee Meeting Action: **Accept**

Editorial: Note that another list item (10) has already been added, so this will be renumbered (11).

Number Eligible to Vote: **19**

Ballot Results: Affirmative: 17

Ballot Not Returned: 2 Byrne, C., Paderick, H.

1855-43 Log #CP7 FAE-SCE
(Chapter 8)

Final Action: Accept

Submitter: Technical Committee on Special Operations Protective Clothing and Equipment,

Recommendation: Revise Chapter 8 to read as follows:

8.3 (4) Delete "of the liner"

8.5 (5) Change "liner" to "barrier"

8.1.1 All repairs shall be performed by the original ensemble or ensemble element manufacturer, Verified ISP, an ISP, or a member of the organization ~~who has received~~ after training by either the manufacturer or by a Verified ISP or an ISP in the repair of ensembles or ensemble elements.

8.1.3 Ensembles or ensemble elements shall be subjected to advanced cleaning, when necessary, before any repair work is undertaken. ~~Ensembles contaminated by CBRN terrorism agents shall be immediately retired after CBRN exposure is confirmed and shall not be reused:~~

8.1.3.1 Ensembles contaminated by CBRN terrorism agents shall be immediately retired after CBRN exposure is confirmed and shall not be reused.

8.1.6 Replacement interface components shall be installed in a manner consistent with the ensemble or ensemble element manufacturer's method of construction or recommendation.

8.2.4* Replacement hardware shall be installed in a manner consistent with the garment element manufacturer's method of construction or recommendation.

8.3 (5) Repairs to non-barrier garment liner materials shall be permitted provided there is no stitching through the barrier materials.

Delete 8.4.4 and A.8.4.4.

8.4.6 Restitching of more than 25 continuous mm (1 continuous in.) of a Major A seam and Major B shall require consulting the garment element manufacturer or shall be performed by the garment element manufacturer or by a verified ISP in a manner consistent with the garment element manufacturer's methods.

~~8.4.7.1 Repairs to Major B seams in the thermal liner that do not affect any barrier material shall be permitted. Restitching of more than 25 continuous mm (1 continuous in.) of any Major B seams shall require consulting the garment element manufacturer or shall be performed by the garment element manufacturer or by a verified ISP in a manner consistent with the garment element manufacturer's methods.~~

8.7.2 Other than the replacement of bootlaces and lace-in zipper assemblies, all repairs to boots shall be performed by the footwear element manufacturer or its designated ISP.

8.7.3 All replacement bootlaces and bootlaces and lace-in zippers shall be consistent with those provided by the footwear element manufacturer.

Substantiation: The technical committee proposes revisions to Chapter 8 for the following reasons:

8.1.1 - Clarifies who can conduct repairs.

8.1.3 - The second sentence should have been split out as a second requirement, and CBRN deleted.

8.1.6 - Installation may be a recommendation as opposed to a method of construction.

8.2.4 - Installation may be a recommendation as opposed to a method of construction.

8.3 (5) - Delete 8.4.4 and Annex 8.4.4, and move text here. Text is more relevant to this paragraph.

8.4.6 - Clarifies text, refers to thermal liner.

8.4.7.1 - Deleted, this text is being added more appropriately to 8.4.6.

8.7.2 - Provides clarifying text by adding "lace-in."

8.7.3 - Provides clarifying text by adding "lace-in."

Committee Meeting Action: Accept

Number Eligible to Vote: 19

Ballot Results: Affirmative: 17

Ballot Not Returned: 2 Byrne, C., Paderick, H.

1855-44 Log #60 FAE-SCE
(8.1.1)

Final Action: Accept in Principle

Submitter: Vicki Smith, LION Apparel

Recommendation: Revise text to read as follows:

All repairs shall be performed by the original manufacturer, a Verified ISP, an ISP, or a member of the organization who has received training by a manufacturer, a Verified ISP, or by an ISP in the repair of ensemble or ensemble elements.

Substantiation: The standard must clearly differentiate between an ISP and a verified ISP, and the fact that ISPs which are under no scrutiny must have manufacturers' training to perform basic repairs and to train organizations on basic repairs. Verified ISPs on the other hand have chosen to invest in developing NFPA 1851 compliant processes and have chosen to have these processes scrutinized and deemed acceptable by a third party certification organization.

Committee Meeting Action: **Accept in Principle**

See Committee Action on Proposal 1855-43 (Log #CP7).

Committee Statement: The technical committee accepted the proposal in principle, and provides the text addressing this issue in Proposal 1855-43 (Log #CP7).

Number Eligible to Vote: 19

Ballot Results: Affirmative: 17

Ballot Not Returned: 2 Byrne, C., Paderick, H.

1855-45 Log #18 FAE-SCE
(8.4.9)

Final Action: Accept

Submitter: Karen E. Lehtonen, Lion

Recommendation: Revise text to read as follows:

If replacing ~~trim~~ visibility markings necessitates sewing into a Major A seam, ~~trim~~ visibility markings replacement shall be done only by the garment element manufacturer or by a verified ISP unless the organization is also a verified ISP.

Substantiation: The term trim has been changed to visibility markings.

Committee Meeting Action: **Accept**

Number Eligible to Vote: 19

Ballot Results: Affirmative: 17

Ballot Not Returned: 2 Byrne, C., Paderick, H.

1855-46 Log #CP8 FAE-SCE
(9.1.3)

Final Action: Accept

Submitter: Technical Committee on Special Operations Protective Clothing and Equipment,

Recommendation: Delete paragraph 9.1.3 and renumber section.

Substantiation: Paragraph 9.1.3 conflicts with paragraph 9.1.8.

Committee Meeting Action: **Accept**

Number Eligible to Vote: 19

Ballot Results: Affirmative: 17

Ballot Not Returned: 2 Byrne, C., Paderick, H.

1855-47 Log #19 FAE-SCE
(10.1.2)

Final Action: Accept in Principle

Submitter: Karen E. Lehtonen, Lion

Recommendation: Revise text to read as follows:

10.1.2* Technical rescue protective ensembles and ensemble elements shall be retired in accordance with 10.2.1, ~~no more than 10 years from the date the ensembles or ensemble elements were manufactured.~~ Technical rescue protective ensembles and ensemble elements that have followed the cleaning, inspection and repair requirements of this standard at least annually shall be retired 10 years from the date the ensemble or ensemble element was issued to be worn. Technical rescue ensembles and ensemble elements that have not followed the cleaning, inspection and repair requirements of this standard at least annually shall be retired no more than 10 years from the date the ensembles or ensemble elements date of manufacture.

Substantiation: Ensembles and Ensemble elements that at least annually have been properly cared for, inspected and maintained in accordance with the requirements of this standard should be allowed to be retired more than 10 years after placement in service. By following a program for inspection, care and maintenance as outlined in this standard there is a protocol that has been established for proper review of the ensemble or ensemble element to ensure its continued fitness for use. In the absence of a care and maintenance program then the element should be required to be retired 10 years from the date of manufacture.

Committee Meeting Action: **Accept in Principle**

See Committee Action on Proposal 1855-48 (Log #CP9).

Committee Statement: The technical committee accepted the proposal in principle, and provided the revised text as seen in Proposal 1855-48 (Log #CP9) to address this issue.

Number Eligible to Vote: 19

Ballot Results: Affirmative: 17

Ballot Not Returned: 2 Byrne, C., Paderick, H.

1855-48 Log #CP9 FAE-SCE
(10.1.2)

Final Action: Accept

Submitter: Technical Committee on Special Operations Protective Clothing and Equipment,

Recommendation: Revise text to read as follows:

10.1.2* Technical rescue protective ensembles and ensemble elements shall be retired in accordance with 10.2.1, no more than the number of years after date of manufacture indicated in Table 10.1.2.

****Insert Table 10.1.2 Log #CP9 Here****

Substantiation: The technical committee is proposing to add a table that identifies the potential life spans of different elements.

Committee Meeting Action: **Accept**

Number Eligible to Vote: 19

Ballot Results: Affirmative: 17

Ballot Not Returned: 2 Byrne, C., Paderick, H.

| Table 10.1.2 Mandatory Retirement | | | | |
|--|---------|--------|--------|-------|
| Type | Garment | Gloves | Helmet | Boots |
| Utility | 15 yrs | 5 | 15 | 15 |
| Rescue/Recovery | 10 | 10 | 15 | 15 |
| CBRN | 10 | 10 | 15 | 15 |

1855-49 Log #20 FAE-SCE
(10.2.1)

Final Action: Accept

Submitter: Karen E. Lehtonen, Lion

Recommendation: Revise text to read as follows:

Retired technical rescue protective ensembles and ensemble elements shall be destroyed or disposed of in a manner ensuring that they will not be used in any ~~fire fighting~~ or emergency activities, ~~including live fire training~~.

Substantiation: Technical rescue elements are not intended to be used for fire fighting therefore this terminology should be removed.

Committee Meeting Action: Accept

Number Eligible to Vote: 19

Ballot Results: Affirmative: 17

Ballot Not Returned: 2 Byrne, C., Paderick, H.

1855-50 Log #21 FAE-SCE
(10.2.2(1))

Final Action: Accept

Submitter: Karen E. Lehtonen, Lion

Recommendation: Revise text to read as follows:

For training ~~that does not involve live fire~~, provided the ensembles and ensemble elements are appropriately marked as being for non-emergency training only.

Substantiation: Technical rescue elements are not intended to be used for fire fighting therefore this terminology should be removed.

Committee Meeting Action: Accept

Number Eligible to Vote: 19

Ballot Results: Affirmative: 17

Ballot Not Returned: 2 Byrne, C., Paderick, H.

1855-51 Log #22 FAE-SCE
(11.3.7 and Table 11.3.7(b))

Final Action: Accept

Submitter: Karen E. Lehtonen, Lion

Recommendation: Revise text to read as follows:

For verification of an organization's or an ISP's repair services, the following series of tests shall be required for each repair category for which the organization or the ISP is verified. Testing shall be conducted using new materials as outlines in Table 11.3.7 (a) ~~through Table 11.3.7 (c)~~ and Table 11.3.7 (b).

Delete existing table 11.3.7 (b) and renumber existing table 11.3.7(c) as 11.3.7(b).

Substantiation: Technical rescue garments do not have liners; therefore verification of these components is not required.

Committee Meeting Action: Accept

Number Eligible to Vote: 19

Ballot Results: Affirmative: 17

Ballot Not Returned: 2 Byrne, C., Paderick, H.

1855-52 Log #CP10 FAE-SCE
(Chapter 12)

Final Action: Accept

Submitter: Technical Committee on Special Operations Protective Clothing and Equipment,

Recommendation: Revise Chapter 12 as follows:

12.3.5.1 Change "liner" to "barrier"

12.3.5.2 Change "liner" to "barrier"

Delete 12.2.2, A.12.2.1 and A.12.2.3.1. Renumber Chapter 12 accordingly.

12.2.3.2 A 5 gal bucket or similar container with a 12" diameter shall be used to support the ~~liner~~ barrier during evaluation.

12.2.4.2 The evaluation shall be conducted using the following procedure:

(1) If possible, separate the ~~liner~~ barrier from the outer shell.

(2) Orient the liner such that the barrier material is on the outside.

(3) Position the dry ~~liner~~ barrier over the bucket with the innermost layer facing down and the interior layer facing up.

(4) Cup the ~~liner~~ barrier area that is being evaluated, so that it is lower than the surrounding liner.

12.2.5.1 The ~~liner~~ barrier shall be visually inspected for leakage on the innermost layer side after 3 1 minutes.

12.2.5.2 If any liquid passes through the barrier material and wets the lining material or other interior layer, the liner shall be removed from service and ~~repaired or replaced~~ evaluated per section 6.4.

12.2.5.3 After the evaluation procedure has been performed, the ~~liner~~ barrier shall be cleaned and allowed to completely dry to remove all traces of the alcohol-tap water mixture.

12.3.2.1.2 In addition to the areas listed in 12.3.2.1.1 where potential damage to the garment outer shell or ~~the innermost layer~~ barrier has been detected, the evaluation shall be conducted on the corresponding area of the barrier material. ~~Where potential damage to the garment barrier material has been detected, the evaluation shall also be conducted on that area.~~

12.3.3.1 (3) The apparatus shall have a clamping area that provides a water exposure and viewing area that is at least ~~50~~ 75 mm (~~2 3~~ 3 in.) in diameter.

12.4 Footwear Water Resistance Evaluation.

12.4.1 Application. This evaluation method shall apply footwear.

12.4.2 Procedure

12.4.2.1 The evaluation shall be conducted using the following procedure:

(1) Paper toweling shall be placed inside the footwear specimen such that the paper toweling intimately contacts all areas inside the footwear specimen to a minimum height of 200 mm (8 in).

(2) The footwear specimen shall be placed in a container that allows the entire footwear to be immersed in tap water.

(3) The container shall be filled with tap water to a height of 200 mm +0, -25mm (8 in. +0, -1 in.).

(4) After 3 minutes, the paper toweling shall be removed and examined for evidence of liquid leakage.

(5) If any water passes through the footwear, the footwear shall be removed from service and repaired or replaced.

(6) If no water passes through the footwear, the footwear shall be allowed to dry completely before being returned to service.

Substantiation: The technical committee proposes to revise Chapter 12 for the following reasons:

12.2.3.2 - for consistency of testing.

12.2.4.2 - for terminology consistency, changes from "liner" to "barrier."

12.2.5.1 - Since there is no thermal liner in these garments, one minute will be sufficient to show leakage.

12.2.5.2 - This change identifies the location of the evaluation section.

12.2.5.3 - This change is for consistency with other changes.

12.3.2.1.2 - The second sentence is now redundant with first sentence changes.

12.3.3.1 (3) - Increased size of apparatus viewing area to test a more representative sample area.

12.4 - The TC is adding a footwear water resistance evaluation to the chapter on testing.

Committee Meeting Action: Accept

Number Eligible to Vote: 19

Ballot Results: Affirmative: 17

Ballot Not Returned: 2 Byrne, C., Paderick, H.

1855-53 Log #23 FAE-SCE
(12.1)

Final Action: Accept

Submitter: Karen E. Lehtonen, Lion

Recommendation: Delete the entire section numbered 12.1 and renumber remaining chapter.

Substantiation: Technical rescue garments do not have liners; therefore the light degradation test is not required for these types of garments.

Committee Meeting Action: Accept

Number Eligible to Vote: 19

Ballot Results: Affirmative: 17

Ballot Not Returned: 2 Byrne, C., Paderick, H.

1855-54 Log #CP11 FAE-SCE
(Annex A)

Final Action: Accept

Submitter: Technical Committee on Special Operations Protective Clothing and Equipment,

Recommendation: Revise Annex A.5.1.8 (2) (1) as follows:

A.5.1.8(2)(1)(e) Change "liner" to "barrier"

A.5.1.8(2)(1)(j) Change "liner" to "barrier"

A.5.1.8(2)(1)(r) Change "liner" to "barrier"

A.5.1.8(2)(1)(s) Change "liner" to "barrier"

A.6.3.5.1(4) Change "liner" to "barrier" (2 places)

A.6.4.3 Change "liner" to "barrier" (3 places)

A.7.3.7(2) Change "liner" to "barrier"

A.7.3.9.2 Change "liner" to "barrier" (5 places)

A.10.1.2 ~~After discussion of the concept of mandatory retirement for protective elements, the consensus of the technical committee, led by the fire service segment, is that the life of a turnout suit is generally less than 10 years. Mandatory retirement is from the date of manufacture. Regardless of when the element was originally produced, and recognizes that these ensembles and ensemble elements may be stored and unused for long periods of time, it is imperative that~~ The protective elements should be routinely inspected to ensure that they are clean, well maintained, and still safe. Just knowing the age of the elements ~~does not guarantee they are still serviceable cannot do that.~~

Substantiation: The technical committee is changing the term "liners" to "barriers" for consistency throughout the document. In A.10.1.2, the first sentence is related to the fire service, and is being deleted.

Committee Meeting Action: Accept

Number Eligible to Vote: 19

Ballot Results: Affirmative: 17

Ballot Not Returned: 2 Byrne, C., Paderick, H.

1855-55 Log #24 FAE-SCE
(A.4.3.2)

Final Action: Accept

Submitter: Karen E. Lehtonen, Lion

Recommendation: Revise text to read as follows:

Some ~~departments~~ organizations utilize rental or loaner gear. Records should also be maintained on these ensembles and ensemble elements in order to maintain a history on the care and maintenance of the products. The ~~fire department~~ organization should require that the entity providing the gear provide the records of prior care and maintenance at the time of rental.

Substantiation: Technical rescue garments are used by organizations other than just fire departments, therefore the terminology should be generic to organizations.

Committee Meeting Action: **Accept**

Number Eligible to Vote: 19

Ballot Results: Affirmative: 17

Ballot Not Returned: 2 Byrne, C., Paderick, H.

1855-56 Log #25 FAE-SCE
(A.4.5.3)

Final Action: Accept

Submitter: Karen E. Lehtonen, Lion

Recommendation: Revise text to read as follows:

Extra caution should be practiced to avoid exposing children to soiled protective equipment because they usually are more interested in actually touching or handling the equipment than are adults. Children are also less likely to wash off any dirt ~~or soot~~ that they might pick up from handling ensembles or ensemble elements. ~~Departments~~ Organizations should consider dedicating PPE solely for use at public education events to minimize public exposure to soils and contaminants.

Substantiation: Technical rescue garments are used by organizations other than just fire departments, therefore the terminology should be generic to organizations.

Committee Meeting Action: **Accept**

Number Eligible to Vote: 19

Ballot Results: Affirmative: 17

Ballot Not Returned: 2 Byrne, C., Paderick, H.

1855-57 Log #38 FAE-SCE
(Table A.5.1.1)

Final Action: Accept in Principle

Submitter: Karen E. Lehtonen, Lion

Recommendation: This table should be reviewed to determine if all of these hazards apply to technical rescue ensembles and ensemble elements as some are more specific to fire fighting applications.

Substantiation: This table was developed for fire fighting ensembles and ensemble elements, therefore the technical committee should review the table for applicability.

Committee Meeting Action: **Accept in Principle**

See Committee Action on Proposal 1855-9 (Log #CP4).

Committee Statement: The technical committee accepted the proposal in principle, and provided text to address the issue in Proposal 1855-9 (Log #CP4).

Number Eligible to Vote: 19

Ballot Results: Affirmative: 17

Ballot Not Returned: 2 Byrne, C., Paderick, H.

1855-58 Log #26 FAE-SCE
(A.5.1.5)

Final Action: Accept

Submitter: Karen E. Lehtonen, Lion

Recommendation: In the last sentence in the next to last paragraph:

This approach allows ~~fire departments~~ organizations to compare prices and product acceptability.

Substantiation: Technical rescue ensembles and ensemble elements apply to more than just fire departments; therefore the terminology used should be more generic.

Committee Meeting Action: Accept

Number Eligible to Vote: 19

Ballot Results: Affirmative: 17

Ballot Not Returned: 2 Byrne, C., Paderick, H.

1855-59 Log #27 FAE-SCE
(A.5.1.8(1)(b) and (f))

Final Action: Accept in Principle

Submitter: Karen E. Lehtonen, Lion

Recommendation: Delete A.5.1.8(1)(b) Lining material and A.5.1.8(1)(f) Wristlets, material, design.

Substantiation: Technical rescue garments so not require the use of lining material and wristlets therefore they should be removed from this list.

Committee Meeting Action: Accept in Principle

Delete A.5.1.8(1)(b) Lining material and revise text as for A.5.1.8(1) (f) Wristlets, material design, if present.

In the last sentence of this Annex item, delete the word "required" and change 1971 to 1951.

Committee Statement: The technical committee accepted the proposal in principal, and provides the editorial corrections that appear in the meeting action.

Number Eligible to Vote: 19

Ballot Results: Affirmative: 17

Ballot Not Returned: 2 Byrne, C., Paderick, H.

1855-60 Log #28 FAE-SCE
(A.5.1.8(2)(1)(e), (o), and (s))

Final Action: Accept

Submitter: Karen E. Lehtonen, Lion

Recommendation: Revise text to read as follows:

(e) Any additional ~~liner~~ barrier material requirements

(o) ~~Any requirements for spot or localized enhanced insulative performance~~

(s) Any requirements for barrier material substrate ~~or liner fit~~ accessibility to allow field inspection

Substantiation: Technical rescue garments may have a barrier but not a liner so modifications to this list is required.

Committee Meeting Action: Accept

Number Eligible to Vote: 19

Ballot Results: Affirmative: 17

Ballot Not Returned: 2 Byrne, C., Paderick, H.

1855-61 Log #29 FAE-SCE
(A.5.1.8(2)(2)(f))

Final Action: Accept

Submitter: Karen E. Lehtonen, Lion

Recommendation: Revise text to read as follows:

(f) Any specific requirements for earflaps (design, materials, dimensions, attachment to shell specifics): if the organization determines ear flaps are required as they are not required in NFPA 1971.

Substantiation: Technical rescue helmets are not required to have ear flaps therefore this item should only apply if the organizations specifies such.

Committee Meeting Action: **Accept**

Number Eligible to Vote: 19

Ballot Results: Affirmative: 17

Ballot Not Returned: 2 Byrne, C., Paderick, H.

1855-62 Log #30 FAE-SCE
(A.5.1.8(2)(7)(a))

Final Action: Accept

Submitter: Karen E. Lehtonen, Lion

Recommendation: Revise text to read as follows:

(a) Any additional certification requirements (e.g., ~~Project FIRES~~, state OSHA, federal OSHA).

Substantiation: Project FIRES would not apply to Technical rescue PPE.

Committee Meeting Action: **Accept**

Number Eligible to Vote: 19

Ballot Results: Affirmative: 17

Ballot Not Returned: 2 Byrne, C., Paderick, H.

1855-63 Log #46 FAE-SCE
(A.6.1.2)

Final Action: Accept in Principle

Submitter: James M. Baker, TotalCare

Recommendation: When inspecting elements for soiling consideration should be given to the accumulation of dirt, mud or other grime that could cause degradation of the element. Perspiration and its remains could also degrade the element or components of the element and should be considered when evaluating for soiling.

Substantiation: The definition of soiling is generic and does specifically call out everyday soiling that should be considered when evaluating PPE elements. This comment adds appendix language to more clearly define and illustrate what should be considered when evaluating the element.

Committee Meeting Action: **Accept in Principle**

Asterisk 6.1.2, and add the proposed text as an Annex item A.6.1.2.

A.6.1.2 When inspecting elements for soiling consideration should be given to the accumulation of dirt, mud or other grime that could cause degradation of the element. Perspiration and its remains could also degrade the element or components of the element and should be considered when evaluating for soiling.

Committee Statement: The technical committee accepted the proposal in principle, and provides the clarifying text as shown in the meeting action.

Number Eligible to Vote: 19

Ballot Results: Affirmative: 17

Ballot Not Returned: 2 Byrne, C., Paderick, H.

1855-64 Log #39 FAE-SCE
(Table A.6.2.2 and Table A.6.3.5)

Final Action: Accept in Principle

Submitter: Karen E. Lehtonen, Lion

Recommendation: The technical committee should review these tables for accurateness after revisions are made to the standard to ensure all items are applicable to Technical Rescue PPE and are mandatory components of PPE. The tables should be revised to correct any inconsistencies.

Substantiation: There currently are omissions and errors in the tables based on the current requirements of the draft document. In addition there will be revisions to the requirements in the document during the ROP meeting. Therefore the tables should be reviewed and updated accordingly after all changes are made.

Committee Meeting Action: Accept in Principle

Delete existing Table A.6.2.2.

Insert Rev Table A.6.2.2

Delete existing Table A.6.3.5

Insert Rev Table A.6.3.5

Committee Statement: A task group reviewed the tables and provided the amended tables as shown in the meeting action.

Number Eligible to Vote: 19

Ballot Results: Affirmative: 17

Ballot Not Returned: 2 Byrne, C., Paderick, H.

| Table A.6.2.2 Routine Inspection Criteria | | | | | |
|---|-----------------|----------------|---------------|-----------------|----------------|
| Criteria | Garments | Helmets | Gloves | Footwear | Goggles |
| Soiling | X | X | X | X | |
| Contamination | X | X | X | X | |
| Tears and cuts | X | X | X | X | |
| Damaged missing hardware or closure system | X | | | | |
| Charring, burn holes, melting | X | X | X | X | |
| Shrinkage | X | X | X | X | |
| Material discoloration | X | X | X | X | |
| Damaged or missing visibility markings | X | X | | | |
| Loss of face opening elasticity or adjustability | | | | | |
| Cracks, dents, abrasions | | X | X | | |
| Bubbling, soft spots, warping | | X | | | |
| Damaged or missing components of suspension or retention systems | | X | | | |
| Damaged or missing components of including discoloration and scratched lenses | | | | | X |
| Damaged strap or loss of elasticity | | | | | X |
| Inverted glove liner | | | X | | |
| Exposed or deformed protective toe, protective midsole, or shank | | | | X | |
| Loss of water resistance | | | | X | |
| Closure system component damage and functionality | | | | X | |
| Size compatibility | X | | | | |

| Table A.6.3.5 Advanced Inspection Criteria | | | | | | | | |
|--|-----------------|----------------|----------------|---------------|-----------------|----------------|--------------|--------------------------|
| Criteria | Garments | Barrier | Helmets | Gloves | Footwear | Goggles | Hoods | Interface Devices |
| Soiling | X | X | X | X | X | X | X | X |
| Contamination | X | X | X | X | X | | X | |
| Tears and cuts | X | X | X | X | X | | X | |
| Damaged or missing hardware or closure system | X | | X | X | X | | X | X |
| Charring, burn holes, melting | X | X | X | X | X | | X | |
| Shrinkage | | | | X | | | | |
| Material degradation (UV or chemical damage) | X | X | X | X | X | | X | |
| Material discoloration | X | X | X | X | X | | X | |
| Visibility marking integrity, attachment to garment, reflectivity damage | X | | X | | | | | |
| Loss of face opening elasticity or adjustability | | | | | | | X | |
| Cracks, dents | | X | X | | X | | | |
| Abrasions | X | X | X | | X | | | |
| Bubbling, soft spots, warping | | | X | | X | | | |
| Damaged or missing components of the suspension and retention systems | | | X | | | X | | |
| Damaged or missing components including discoloration and scratched lenses | | | X | | | X | | |
| Inverted glove liner | | | | X | | | | |
| Exposed or deformed protective toe, protective midsole, or shank | | | | | X | | | |
| Loss of water resistance | | X | | X | X | | | |
| Evaluation of system fit and coat/trouser overlap | X | | | | | | | |
| Loss of seam integrity | | X | | X | | | | |
| Broken or missing stitches | | X | | X | | | X | |
| Loss or shifting of liner material | | | | X | | | | |
| Loss of wristlet elasticity, stretching of wristlet | | | | X | | | | |

| | | | | | | | | |
|--|---|---|---|---|---|--|---|--|
| Label integrity and legibility | X | | X | X | X | | X | |
| Hook and loop functionality | X | | X | | X | | | |
| Barrier attachment system | X | X | | | | | | |
| Material elasticity, stretching out of shape | | | | | | | X | |
| Damage to the impact cap | | | X | | | | | |
| Loss of flexibility | | | X | | | | | |
| Punctures, cracking, or splitting | | X | | | X | | X | |
| Excessive tread wear | | | | | X | | | |
| Condition of liner: tears, excessive wear, separation from outer layer | | | | | X | | | |
| Delamination, separation | X | X | | X | | | | |
| Size compatibility | X | | | | | | | |

1855-65 Log #61 FAE-SCE
(A.6.3.2.1)

Final Action: Accept in Principle

Submitter: Vicki Smith, LION Apparel

Recommendation: Revise text to read as follows:

For any inspection program to be effective, ensembles and ensemble elements should be evaluated by trained individuals. The individuals evaluating the ensembles and ensemble elements should understand the limitations of each element and recognize the signs of failure. Utilizing trained individuals provides consistency on whether an item should be repaired or retired. The manufacturer, verified ISP or ISP and organization should determine the level of training required to perform advanced inspections. Resources for training that should be considered, as a minimum, are the manufacturer(s) of the elements in use, the Fire and Emergency Manufacturers and Services Association (FEMSA) user guides; NFPA 1500, *Standard on fire Department Occupational Safety and Health Program*, and professional cleaning and repair facilities.

Substantiation: Adding verified ISP or ISP makes A.6.3.2.1 consistent with line 4.2.5 reference to ISP, and our proposal for 4.2.5 to differentiate between ISP and verified ISP.

Committee Meeting Action: Accept in Principle

Revise text to read as follows:

A.6.3.2.1 For any inspection program to be effective, ensembles and ensemble elements should be evaluated by trained individuals. The individuals evaluating the ensembles and ensemble elements should understand the limitations of each element and recognize the signs of failure. Utilizing trained individuals provides consistency on whether an item should be repaired or retired. The manufacturer, Verified ISP or ISP and organization should determine the level of training required to perform advanced inspections. Resources for training that should be considered, as a minimum, are the manufacturer(s) of the elements in use, the Fire and Emergency Manufacturers and Services Association (FEMSA) user guides; NFPA 1500, *Standard on fire Department Occupational Safety and Health Program*, and professional cleaning and repair facilities.

Committee Statement: The technical committee accepted the proposal, capitalizing the V in verified indicates third-party verification, and for consistence with the actions taken on similar proposals.

Number Eligible to Vote: 19

Ballot Results: Affirmative: 17

Ballot Not Returned: 2 Byrne, C., Paderick, H.

1855-66 Log #31 FAE-SCE
(A.6.3.5.1)

Final Action: Accept

Submitter: Karen E. Lehtonen, Lion

Recommendation: In the second sentence make the following revision:

For example, one side of a multilayer laminate material ~~or quilted material~~ might show damage while the other side might not.

Substantiation: Technical rescue garments do not utilize quilted materials like fire fighting garments do so the language requires revision.

Committee Meeting Action: Accept

Number Eligible to Vote: 19

Ballot Results: Affirmative: 17

Ballot Not Returned: 2 Byrne, C., Paderick, H.

1855-67 Log #32 FAE-SCE
(A.6.3.5.1(4))

Final Action: Accept

Submitter: Karen E. Lehtonen, Lion

Recommendation: Revise text to read as follows:

While all materials and components in garment elements are susceptible to different types of damage from wear or abuse, the barrier material is one of the most difficult parts of the rescue and recovery technical rescue protective (or CBRN technical rescue) garment element to inspect and evaluate. That is because the film or coating side of ~~most the~~ barrier materials faces the ~~interior of the liner~~ outer shell and if sewn around the perimeter ~~and~~ is hidden from easy examination. Even if a garment is equipped with a means of opening ~~shell and barrier~~ the liner to view the film or coating side, it is difficult to conduct a visual evaluation of the barrier material film or coating. Even physical examination of the barrier material film or coating side will not detect all types of damage or defects that can lead to loss of liquid penetration resistance for the garment element.

Substantiation: This language was written to describe fire fighting garments, it requires modification to describe how technical rescue garments are assembled.

Committee Meeting Action: Accept

Number Eligible to Vote: 19

Ballot Results: Affirmative: 17

Ballot Not Returned: 2 Byrne, C., Paderick, H.

1855-68 Log #40 FAE-SCE
(A.7.1.1(5))

Final Action: Accept

Submitter: Karen E. Lehtonen, Lion

Recommendation: Revise text to read as follows:

Helmet shells, ~~helmet faceshields~~ or goggles can pit or craze.

Substantiation: Technical rescue helmets do not require face shields.

Committee Meeting Action: Accept

Number Eligible to Vote: 19

Ballot Results: Affirmative: 17

Ballot Not Returned: 2 Byrne, C., Paderick, H.

1855-69 Log #33 FAE-SCE
(A.7.1.9)

Final Action: Accept

Submitter: Karen E. Lehtonen, Lion

Recommendation: Revise the following sentence in this annex item to read:

For example, the tear strength of a material can be measured at a level of ~~11.4kg (25 lb) 35N (7.87lbf)~~ before cleaning and then ~~10kg (22lb) 30N (6.75lbf)~~ after several cycles, whereas a different material could begin at ~~18.2kg (40 lb) 50N (11.24lbf)~~ and drop to ~~11.4kg (25lb) 35N (7.87lbf)~~ after the same number of cleaning cycles.

Substantiation: Modifications in values are proposed to make them more relevant to the pass/fail criteria in NFPA 1951.

Committee Meeting Action: Accept

Number Eligible to Vote: 19

Ballot Results: Affirmative: 17

Ballot Not Returned: 2 Byrne, C., Paderick, H.

1855-70 Log #41 FAE-SCE
(A.7.3.2)

Final Action: Reject

Submitter: Karen E. Lehtonen, Lion

Recommendation: In the second paragraph, revise as follows:

Soiling is not always visible and can be difficult to observe on a darkly colored materials. ~~In addition, exposure can occur where ensemble elements are contaminated with fire gasses, resulting in ensemble elements that can be relatively unsafe for use. Ensemble elements that have not been cleaned and appear to be unsoiled have been shown to contain numerous fire gas chemicals, including carcinogenic polynuclear aromatic compounds.~~ Periodic cleaning is required to avoid use of ensemble elements that could be contaminated without visible evidence of soiling.

Substantiation: These requirements are more applicable to structural fire fighting ensembles and not technical rescue garments.

Committee Meeting Action: Reject

Committee Statement: The technical committee believes this information is still relevant to the users of the document.

Number Eligible to Vote: 19

Ballot Results: Affirmative: 17

Ballot Not Returned: 2 Byrne, C., Paderick, H.

1855-71 Log #62 FAE-SCE
(A.7.3.6)

Final Action: Accept

Submitter: Vicki Smith, LION Apparel

Recommendation: Revise text to read as follows:

Machine cleaning is the most effective method for cleaning ensemble elements such as coats, trousers, coveralls, and hoods. It is the most effective means of loosening and removing dirt, soot, and other debris. ~~Presently there are~~ two basic types of automatic washing machines ~~are~~ commonly available for use by end-users: top-loading agitator style machines and front-loading washer/extractors. New technologies are emerging every day in the cleaning industry that will affect options available to both the end-user as well as the ISP for all ensemble elements. ~~At this time,~~ it is generally accepted that front-loading machines are more appropriate for protective ensemble and ensemble elements, where allowed by the element manufacturer.

Substantiation: There are several new technologies that are close to being brought to market that may not use washing machines and could theoretically clean all ensemble elements. Although the standard does mention "emerging technologies: it implies these technologies are applicable to machine washing of fabric elements. If new cleaning technology that is proven effective and safe for all elements is introduced, the standard should contain language that would make it eligible for compliance.

Committee Meeting Action: Accept

Number Eligible to Vote: 19

Ballot Results: Affirmative: 17

Ballot Not Returned: 2 Byrne, C., Paderick, H.

1855-72 Log #63 FAE-SCE
(A.7.3.6)

Final Action: Accept

Submitter: Vicki Smith, LION Apparel

Recommendation: Revise text to read as follows:

Top-Loading Washers. Top-loading machines are similar to those used in most homes. They use a center post agitator to whisk water through the fibers of garments. They are designed to clean multiple garments of minimum bulk. As a result of the center post agitation, it is generally accepted that top-loading machines are more damaging to ensembles and ensemble elements than front-loading machines. Top-loading, agitating machines have the potential to reduce the longevity of garments due to mechanical damage. If top-loading machine are used, stainless steel wash tubs free of rough spots, burrs, or sharp edges are recommended to protect against rusting, chipping, snags and the associated wear on and damage of garments.

Front-Loading Washers. Front-loading washers have a door on the front of the machine through which garments are loaded. They clean by lifting garments out of the water and gently dropping them back into the water. These units provide better mechanical action because of the size and type of rotation, as well as the degree of extraction. They have various capacities and are designed to handle heavy loads of bulky items and also to save water and energy. For those reasons, it is generally accepted that front-loading machines are more appropriate for protective clothing. If front-loading machines are used, stainless steel wash tubs free of rough spots, burrs, or sharp edges are recommended to protect against rusting, chipping, snags and the associated wear on and damage of garments.

Substantiation: The moisture barrier is relatively unprotected in most technical rescue garments; therefore exposure to rough or sharp surfaces could damage it during mechanical cleaning.

Committee Meeting Action: Accept

Number Eligible to Vote: 19

Ballot Results: Affirmative: 17

Ballot Not Returned: 2 Byrne, C., Paderick, H.

1855-73 Log #53 FAE-SCE
(A.7.3.7 (New))

Final Action: Accept

Submitter: Daniel J. Gohlke, W. L. Gore and Associates

Recommendation: Add new text to read as follows:

A.7.3.7 Washing and drying should be conducted to be as little physically damaging as possible. Precautions, such as removing hardware and tools from pockets, separating shells from liners, closing all closures, laundering in a laundry bag, etc., are all designed to reduce physical damage. Hard heavy accessories (e.g. harnesses, carabineers) and findings (e.g. D-rings) beating on the garments against the washer and dryer drums can be very damaging to garments, especially barriers. Any and all precautions should be taken to avoid this source of damage.

Substantiation: This is valuable advice.

Committee Meeting Action: Accept

Number Eligible to Vote: 19

Ballot Results: Affirmative: 17

Ballot Not Returned: 2 Byrne, C., Paderick, H.

1855-74 Log #34 FAE-SCE
(A.7.3.10.1)

Final Action: Accept

Submitter: Karen E. Lehtonen, Lion

Recommendation: Revise text to read as follows:

Advanced cleaning includes washing both the inside and outside surfaces of the helmet carefully, using a soft brush to reach between components and into difficult to access spaces, and washing the ~~eye/face protection goggles~~. It is usually not necessary to completely submerge a helmet for cleaning unless it is being inspected for damage or repairs are being performed in conjunction with the cleaning. The helmet should be thoroughly washed prior to disassembly to prevent the migration of dirt and contamination.

Substantiation: Technical rescue helmets use goggles, the term eye/face protection is more applicable to fire fighting helmets.

Committee Meeting Action: Accept

Number Eligible to Vote: 19

Ballot Results: Affirmative: 17

Ballot Not Returned: 2 Byrne, C., Paderick, H.

1855-75 Log #35 FAE-SCE
(A.8.4.4)

Final Action: Accept

Submitter: Karen E. Lehtonen, Lion

Recommendation: Delete the following text:

~~While some loss of quilting threads on thermal liners is the normal result of wear, excessively large areas where quilt stitching is broken or missing can indicate the need to replace the liner.~~

Substantiation: Technical rescue garments do not use thermal liners; this annex item does not apply to technical rescue garments.

Committee Meeting Action: Accept

Number Eligible to Vote: 19

Ballot Results: Affirmative: 17

Ballot Not Returned: 2 Byrne, C., Paderick, H.

1855-76 Log #45 FAE-SCE
(Table A.10.1.4)

Final Action: Accept in Principle

Submitter: James M. Baker, TotalCare

Recommendation: The chart indicates Amount Allowed per Set. It should read Amount Allowed per Garment.

Amount of Original Cost column %s should be adjusted to allow for higher repair cost. %s should be adjusted to 90%, 70% and 60% for the first three years respectively.

Substantiation: The word set was incorrectly used and should have referred to garment.

The existing % matrix would condemn garments after the first year of use if the moisture barrier required replacement. Raising the % figures would allow for moisture barrier replacement without condemning the garment.

Committee Meeting Action: Accept in Principle

Delete the last sentence of A.10.1.3, and delete Table A.10.1.4 as numbered in the document.

Committee Statement: The technical committee believes that the inclusion of this table leads to more confusion than it provides for clarification.

Number Eligible to Vote: 19

Ballot Results: Affirmative: 17

Ballot Not Returned: 2 Byrne, C., Paderick, H.

1855-77 Log #36 FAE-SCE
(A.12.1.1)

Final Action: Accept

Submitter: Karen E. Lehtonen, Lion

Recommendation: Delete this paragraph, the light evaluation should not apply to technical rescue garments as they do not have the type of lining materials this was intended to evaluate.

Substantiation: Technical rescue garments do not use thermal liners; this annex item does not apply to technical rescue garments.

Committee Meeting Action: Accept

Number Eligible to Vote: 19

Ballot Results: Affirmative: 17

Ballot Not Returned: 2 Byrne, C., Paderick, H.