Advisory Committee Meeting Minutes
Personal Protective Equipment (PPE) for Firefighters, AB 2146
October 22 and 23, 2015

NOTE: Italics are for further clarification, not said during the advisory committee meeting.

Day 1

Call to Order

The meeting was called to order at approximately 9:30 AM by the Chair, Maryrose Chan, Senior Safety Engineer, Occupational Safety and Health Standards Board (OSHSB). The Chairperson was assisted by Bernie Osburn, Staff Services Analyst.

The Division of Occupational Safety and Health (Division) was represented by Eric Berg, Deputy Chief of Health, Research and Standards Safety Unit; Keummi Park, Senior Safety Engineer, Research and Standards Safety Unit; and Michael Miller, Senior Safety Engineer, Enforcement Unit.

The Chair welcomed attendees and explained the role of the advisory committee in the rulemaking process. The Chair sought volunteers to be part of the subcommittee to assist in the cost and benefits assessment portion of the rulemaking. The subcommittee work will begin after the provisions of the proposed text are decided upon.

The Chair explained that Assembly Bill 2146 was the impetus for the meeting. The Chair reviewed the intent, purpose, instructions, and key dates of the bill. The bill required that an advisory committee meeting be convened by January 1, 2016, and that the members be composed of parties in both management and labor, represent a cross section of the fire protection industry and community, and be competent and knowledgeable regarding protective clothing and equipment for firefighters and firefighting practices, generally. The main purpose of the advisory committee is to evaluate if changes are needed to align Sections 3403 through 3411 with the standards promulgated by the NFPA.

The Chair presented a list of NFPA codes with the corresponding safety orders:

- NFPA 1851. Selection, Care and Maintenance of Protective Ensembles for Structural Fire Fighting and Proximity Fire Fighting. (§3402.3).
- NFPA 1971. Protective Ensembles for Structural Fire Fighting and Proximity Firefighting. (§§ 3403, 3404, 3405, 3406, 3407, and 3408).
- NFPA 1977. Protective Clothing and Equipment for Wildland Fire Fighting (§3410).

- NFPA 1984. Respirators for Wildland Fire Fighting Operations. (Currently not in §3410 and there is no NIOSH approved respirators that comply with NFPA 1984.)
- NFPA 1983. Life Safety Rope and Equipment for Emergency Services. (No Title 8.)

Discussion on Necessity

The Chair solicited comments to determine if it is necessary to update Article 10.1 of the General Industry Safety Orders. There was general agreement among the advisory committee that the safety orders need to be updated. The following are the comments:

Tom Cope (International Association of Fire Fighters Local 753) commented that the NFPA can be easily taken into account when ordering new PPE. The challenges are the processes and procedures within the department after the equipment is purchased: to properly inspect, maintain, and document. These are the areas that need clear regulations, not just an NFPA standard.

Tom Foley (TenCate Protective Garments) stated that historically speaking, Title 8 safety orders lacked the specificity that is needed for maintaining PPE in all areas. It was not clear as to which standards to follow: 29 CFR 1910.132, Title 8 standards, and/or the NFPA standards. Compared to the federal and NFPA standards, the Cal/OSHA standards are antiquated and need to be updated.

Tim White (California Association of Professional Firefighters) stated that the issue with Article 10.1 is if Cal/OSHA wants to cite NFPA, the information and the consensus standards referenced in Title 8 sections no longer exist in the NFPA because the Title 8 standards were written in the 80s, which referenced older editions of the consensus standards. The safety standards, materials, and methodologies have changed significantly in the past 30 years.

Richard Wiese (Southern Area Fire Equipment Research) commented that he agrees with Tim White, in that the California standards include a combination of state and NFPA standards. He agrees that the Title 8 standards are outdated and some of the requirements are completely different from the NFPA standards.

Doug Ferro (Cal/Fire) asked if there is other documentation or supporting documentation that the Division has that is leading to the changes.

Ralph Scott (Scotts PPE), a former PPE officer for a fire department, stated that he reviewed the California standards. The California standards did not provide adequate direction so the fire

department referred to the NFPA standards, which provides step by step instructions as to what to do.

The Chair asked the committee to provide recommendations to the Board. As the Chair of the committee, she had conducted her own research that formed the rationale to support the necessity for the proposed changes. These documents were shared with the advisory committee. However, one of the objectives for convening the advisory committee meeting is to hear the perspectives of those in the fire community.

Review of Documents in Support of Necessity

The Chair presented documents that she thought the committee may find support a conclusion that updating the safety orders to provide a higher level of safety.

1. NFPA Needs Assessment (2010).
    - 205 of the 745 fire departments in California responded (27.5%).
    - 17% of the fire departments do not have self-contained breathing apparatus (SCBAs) for all firefighters on a shift.
    - 9% of the fire departments do not have Personal Alert Safety Systems (PASS) for all firefighters on a shift.
    - 2% of the fire departments do not have personally assigned protective clothing for their firefighters.
    - 22% of the fire departments do not have radios for all firefighters on a shift.

Mike Miller (Division) commented that it is important to acknowledge (the back of the page of the Needs Assessment) that half of the respondents (101 of the 204 respondents) were from fire departments protecting populations of 25,000 or more; 35 of the 112 fire departments were protecting populations of 10,000 to 24,999; and 69 of the 429 fire departments were protecting populations of less than 10,000. Thus, the larger fire departments were a disproportionately greater percentage of respondents to the survey and were the ones with the funding to buy the equipment, whereas the smaller fire departments are the ones who are more likely to lack the funds to replace outdated equipment.

The Chair asked members of the advisory committee to encourage non responding fire departments of various sizes and types to complete the needs assessment questionnaire so that the needs of the fire departments in California would be represented more accurately during future rulemaking.

2. Two documents were reviewed in support of the need for new Section 3402.3. Selection, Inspection, and Maintenance of Protective Ensembles for Structural Fire Fighting and Proximity Fire Fighting:

a) Mortality and Cancer Incidence Pooled Cohort of US Firefighters from San Francisco, Chicago, Philadelphia, (1950-2009), Robert D. Daniels, Travis L. Kubale, James H. Yiin, et al, Occupational Environmental Medicine, Published October 14, 2013.

The study was approved by NIOSH and the National Cancer Institute. Firefighters are exposed to many different types of contaminants when performing their work. The study compared the mortality rate ratios due to cancer of firefighters compared with the U.S. population. The Chair discussed Tables 1, 2, and 3 of the article. According to the conclusion of the study, "In this first phase of examining health effects in career firefighters, we report on mortality and cancer incidence among nearly 30,000 career firefighters followed from 1950 through 2009. Compared with the US population, we found small to moderate increases in risk for several cancer sites and for all cancers combined, stemming mostly from excess malignancies of the respiratory, digestive and urinary systems in otherwise healthy individuals. Our findings are consistent with previous studies and strengthen evidence of a relation between firefighters' occupational exposure and cancer. We found a previously unreported twofold excess of malignant mesothelioma among firefighters. Given that asbestos is the only known causal agent for malignant mesothelioma, and firefighter exposures are probable, the excess is likely to be a causal association."

The Chair asked committee members if employees wear respiratory protection when performing overhaul operations. The responses from the members seem to indicate that it is not standard operating procedure to wear respirators during overhaul operations. *Overhaul operations start when the main fire is extinguished and firefighters are searching for potential sources for reignition to prevent rekindling of fire. Fire fighters look for hidden fire or hot embers, which may be found above the ceiling, between walls, or in obscure places.*

Chris Anaya (former firefighter) stated that respirators are not usually worn.
Shaun Russell (Phenix Technology Inc.) stated firefighters are not required to wear a respirator, but some departments have a policy requiring it for overhaul operations.

Doug Ferro (Cal/Fire) stated that it depends on the department's policy.

A comment was made by a member stating that there is a policy, but it requires monitoring equipment. If one gets into the specifics of what is required, some of the

equipment has not been manufactured for overhaul. If a firefighter is in an area where a manufacturer has not produced equipment for monitoring, then SCBAs are worn. There is monitoring with SCBAs or they are not worn.

b) Collection Summary PPE Care and Maintenance by Paul Kashmanian and Casey C. Grant, The Fire Research Foundation (February 2014).
The national data suggests that NFPA 1851 is not being effectively adhered to. Board staff shared some data from the survey.

Are your policies based on NFPA 1851?

48.8% yes	(287)
22.3% no	(131)
28.9% don't know	(170)
Answered question	588
Skipped question	140

As a firefighter, how many sets of structural gear do you have assigned to you?

Answer Options	One	Two	More than Two	Response Count
Coats	375	197	15	587
Pants	371	199	15	585
Hoods	323	215	47	585
Helmets	492	80	13	585
Gloves	302	219	65	586
Boots	441	125	14	580
Answered question				588
Skipped question				140

In the following table, who handles the structural fire fighting PPE inspection within your fire department?

Answer Options	Manufacturer	Verified ISP	Person in FD trained by manufacturer	Person in FD trained by an ISP	End User	Response Count
Coats	13	82	89	70	408	587
Pants	13	81	89	70	409	587
Hoods	9	47	81	65	444	585
Helmets	9	42	84	64	442	586
Gloves	8	45	79	65	447	584
Boots	9	42	80	62	441	581
Answered question						588
Skipped question						140

In the following table, who handles the structural firefighting and PPE cleaning within your department?

Answer Options	Manufacturer	Verified ISP	Person in FD trained by Manufacturer	Person in the FD trained by ISP	End User	Response Count
Coats	4	109	38	40	430	588
Pants	4	109	38	40	430	588
Hoods	1	68	34	30	480	586
Helmets	1	55	26	25	496	582
Gloves	1	57	32	30	485	584
Boots	0	55	26	24	493	576
Answered question						588
Skipped question						140

For fire departments that directly handle their own PPE cleaning, what are the qualifications of the staff?

Answer Options	Response Percent	Response Count
Trained by the manufacturer	15.3	71
Trained by ISP	9.9	46
Verified by Third Party	4.1	19
Not trained	65.6	305
Not applicable	5.2	24
Answered question		465
Skipped question		0

How often do your organizations clean its structural fire fighting gear on average (on average)?

Answer Options	After each fire or when dirty	3 to 5 times per year	2 times per year	1 time per year	Never	Other	Response count
Coats	270	47	99	115	38	38	588
Pants	270	47	99	115	38	38	587
Hoods	289	49	82	95	42	42	587
Helmets	262	36	67	94	52	52	582
Gloves	276	49	72	97	43	43	585
Boots	261	38	65	99	53	53	580
Answered question							588
Skipped question							140

How frequently is your PPE being "retired"?

Answer Options	Destroyed or Discarded	Use in Non Live Fire Training	Used in Live Fire Training	Donated to Others	Resold	Don't Know	Response Count
Coats	181	171	24	155	12	134	587
Pants	181	170	23	153	12	133	587
Hoods	279	113	14	97	7	131	581
Helmets	194	145	18	135	10	156	583
Gloves	279	117	15	96	8	126	581
Boots	231	136	20	119	8	137	578
Answered question							588
Skipped question							140

What happens to the PPE when it is "retired"? (check all that apply)

Answer Options	Destroyed or Discarded	Use in Non Live Fire Training	Used in Live Fire Training	Donated to Others	Resold	Don't Know	Response Count
Coats	181	171	24	155	12	134	587
Pants	181	170	23	153	12	133	587
Hoods	279	113	14	97	7	131	581
Helmets	194	145	18	135	10	156	583
Gloves	279	117	15	96	8	126	581
Boots	231	136	20	119	8	137	578
Answered question							588
Skipped question							140

Concerns and Comments About the Process

Ken Lombardi (San Francisco Fire Department) expressed concerns about the proposal being already formed. He wondered if the Standards Board is genuinely looking for feedback from the members of the advisory committee or if the proposal is definite or decided upon.

Marley Hart (OSHSB) explained that the proposal is a draft proposal subject to change. She also explained the rulemaking process and the role of the advisory committee. She stated that the proposal is in its preliminary stages. The Board staff is in the process of crafting language to move forward with other documents: Initial Statement of Reasons, Notice, Fiscal Impact Statement, etc. These documents will be reviewed and published by the Office of Administrative Law (OAL) upon approval. The goal is to provide the best proposal to move forward, based on the expertise of the community. Once the proposal is published, there will be a 45-day comment period to submit written comments and a public hearing where a person can speak directly to the Standards Board. The Standards Board is a 7 member board appointed by the Governor. The Board will hear the comments and make a decision as to what changes need to be made. Based on both the written and oral comments, the Board will consider what changes need to be made. Additional proposed changes may be noticed with a 15-day comment period. Once the Board is satisfied, there will be a vote to adopt or reject the proposal.

Peter Healy (OSHSB) added that the advisory process varies depending on the particular rulemaking. In some cases, the advisory committee may have to start with a blank piece of paper. In this meeting, the initiating force or event is legislation, directing the advisory committee be convened to focus on a specific subject matter to consider. Assembly Bill 2146 directs that an advisory committee be convened to evaluate whether changes are needed to align the general industry safety orders to the most recently promulgated standards of the National Fire Protection Association. It may seem that the Chair is providing the committee with a fairly specific proposal, but it is due to the proposal reflecting a focused assignment from the legislature. The Chair compared what exists to the current NFPA standards. If the members of this advisory committee feel that updating the standards creates more problems than it solves, then the committee should be vocal and express that.

Tom Cope (International Association of Fire Fighters, Local 753) asked for clarification if verbal comments can be received during the advisory committee meeting and in subsequent meetings.

The Chair responded "yes".

Robert Weise (Southern Area Fire Equipment Research) asked when the 45-day comment period starts.

Marley Hart (OSHSB) responded that the 45-day comment period will commence after all the advisory committee meetings are completed and after the proposal is completed and noticed.

Review and Discussions Regarding the Proposal

Overview of the sections that are proposed to be updated in this rulemaking:

Article 10.1. Personal Protective Clothing and Equipment for Fire Fighters.
§3401. Application.
§3402. Definitions.
§3402.1. Personal Protective Equipment Purchase Quality Standards for Structural and Proximity Fire Fighting.
§3402.2. Personal Protective Equipment Purchase Quality Standards for Wildland Fire Fighting.
§3402.3. Selection, Inspection, and Maintenance of Protective Ensembles for Structural Fire Fighting and Proximity Fire Fighting.
§3403. ~~Head~~ Helmet, Eye and Face Protection.
§3404. ~~Eye and Face Protection.~~ Protective Hood Interface.
§3405. ~~Ear and Neck Protection.~~ Body Protection.
§3406. ~~Body Protection.~~ Hand and Wrist Protection.
§3407. ~~Hand and Wrist Protection.~~ Foot Protection.
§3407.1. CBRN Protective Ensemble for Structural and Proximity Fire Fighting Ensembles.
§3408. ~~Foot Protection.~~ Personal Alert Safety Systems (PASS).
§3409. Respiratory Protection.
§3410. Wildland Fire Fighting Requirements.

The Chair sought the committee input as to whether provisions regarding chemical, biological agents, radiological particulates (CBRN) due to a terrorist attack should be included in this rulemaking or if it should be handled independently by the large cities that have a greater risk of being targeted by a terrorist attack.

Vicky Wells (San Francisco, Department of Public Health) commented that the fire department responds to incidents that involve such agents more generally, not just resulting from terrorism events. For example, transportation accidents that involve tanker trucks, rail derailments, and chemical spills.

Doug Ferro (Cal/Fire) commented that the CBRN standard is also used by law enforcement when it comes to chemical agents.

A member commented that for mass mutual aid, there is a potential for rural firefighters to help large urban departments in responding to such incidents.

Consensus: Include provisions regarding CBRN in the rulemaking proposal.

Section 3401. Application.

- Subsection (a) was redrafted to include proposed new sections that apply to proximity and structural fire fighting, which are Sections 3402.1, 3402.3 through 3409.

- Subsection (b)(1). The Chair did not propose a change, but Tom Foley (TenCate Protective Fabrics) commented on the existing text.

> (b) General Requirements.
> (1) Personal protective clothing and equipment specified in these Orders shall be provided and used whenever such employees are required to work in a hazardous environment that may be encountered during fire fighting activities or under similar conditions during training activities.

  Tom Foley stated that the general section should be amended to address exactly the change the Chair is talking about with respect to specific NFPA standard. For example, personal protective clothing and equipment should be provided in accordance with NFPA 1971.

- The Chair discussed that subsection (b)(6) requires the employer to amend their written program to reflect the changes in proposed Section 3402.3. Selection, Inspection, and Maintenance of Protective Ensembles for Structural Firefighting and Proximity Fire Fighting.

> (b) General Requirements.
> (6) Employers shall develop and require use of a written plan covering the safe use, maintenance, utilization and replacement of the equipment required in these Orders, and all affected employees shall be trained in accordance with such plan.

  Tom Foley (TenCate Protective Fabrics) commented that subsection (b)(6) should be amended to state that employers shall develop and require the use of a written plan covering the safe use, maintenance, utilization, and replacement of equipment in accordance with NFPA 1851.

  Chris Anaya (former firefighter) agreed with Mr. Foley that there should be references to NFPA 1851 and NFPA 1971.

  The Chair responded that the corresponding NFPA standards addressing design and use requirements are in subsequent sections. Head protection, body protection, etc., will have references to NFPA 1971. The proposed Section 3402.3 was based on NFPA 1851.

Sections 3403 through 3407.1 were based on NFPA 1971. It is useful to review the subsequent sections before amending the general requirements of the Application section.

Vicky Wells (San Francisco, Department of Public Health) stated that firefighters would like to know what they need to comply with. She also asked if the Chair is asking for recommendations from the advisory committee as to whether or not certain provisions of the NFPA are needed.

The Chair responded "yes".

- Subsection (c) was redrafted to relocate the provisions regarding Personal Alert Safety Systems (PASS) to a newly created Section 3408 for Personal Alert Safety Systems. *PASS is an equipment that needs its own section apart from the Application section.*

Section 3402. Definitions.

The Chair proposed new definitions that came from the NFPA standards, with the understanding that it may be necessary to revisit the definitions as the process progresses. There may be new terms that may need to be added. After the draft proposal is finalized for noticing, the words that are not used in Article 10.1 will be proposed for deletion. *The updated proposal is anticipated to include the adoptions of NFPA 1971 and NFPA 1851, which include definitions. The final proposal may include definitions that are not found in NFPA 1971 and NFPA 1851.*

During the advisory committee meeting, the following definitions were proposed to be amended or deleted:

- Break-Away Device. Angel Sanchez (Phenix Technology Inc) commented that the term "break-away device" should be removed. There is inconsistency with what the NFPA states and the definition in this safety order. There is no corresponding NFPA requirement for a break-away device.

  Chapter 8. Test Methods of NFPA 1971.
  8.35. Suspension System Retention Test.
  8.35.7.1. Separation of the helmet suspension from the helmet shall constitute failing performance.

  Section 3402 definition of "Break-Away Device": A type of chin strap or chin strap connection designed so that excessive pressure exerted on the helmet in the form of upward force will cause the chin strap to open and release the helmet from the head.

Conclusion: *The Chair will delete the "break-away device" definition. The term break-away device is not used in existing Section 3403. Head Protection. Also, as the proposal*

is finalized, existing terminologies that are not used in subsequent sections will be deleted.

- Buddy-Breathing Device. The Chair proposed the deletion of the term "buddy-breathing device" because it is being replaced by Emergency Breathing Safety Systems (EBSS) *found in NFPA 1981(2013).*

- Fire Fighting, Structural. The Chair proposed the deletion of this terminology due to the outdated sections of the California Government Code referred to in the definition. The Chair originally proposed to replace the definition with the definition *found in NFPA 1971(2013).*

- CBRN definition. The NFPA defined CBRN as an abbreviation for chemicals, biological agents, radiological particulates that could be released as a result of a terrorist attack. The NFPA definition does not include the word "nuclear". The Chair asked what "N" stood for because the word "nuclear" is not included in the NFPA definition. The committee's response was "N" stood for "nuclear".

  Kevin White (California Association of Professional Firefighters) suggested removing the reference to the term "terrorism".

  Shaun Russell (Phenix Technology) said that CBRN is tasked specifically for terrorism.

  Michael Miller (Division) wanted clarification and asked if the scope in Section 3402 is firefighting and fire suppression, not hazardous materials fire?

  Mike Molloy (Anaheim Fire and Rescue) commented that as a first responder, firefighters will respond in structural firefighting gear, until determined otherwise.

  Chris Anaya (former firefighter) asked how the definition will be used?

  The Chair responded that the definitions in Section 3402 would apply to the article.

  Richard Weise (Southern Area Fire Equipment Research) added that there are three definitions of CBRN in NFPA: CBRN, CBRN barrier material, and CBRN terrorism agents.

  Vicky Wells (San Francisco, Department of Public Health) stated she preferred the word "agents", not "particulates".

Chris Farrell (NFPA) cautioned that deviating from the NFPA may create ambiguity or inconsistency that could create conflict.

Conclusion: *The definition that will be recommended will depend on the outcome of the meeting when the committee reviews proposed new Section 3407.1. CBRN Protective Ensembles and Ensemble Elements.*

- Drag Rescue Device. The Chair proposed adding a definition not found in the existing standard. The Chair asked the committee members for comments regarding the proposed definition, a device affixed in protective clothing that aids the rescue of an incapacitated firefighter by dragging him/her along a horizontal plane.

  Richard Weise (Southern Area Fire Equipment Research) proposed amending the definition using the definition found in NFPA 1851, for a component integrated within the protective coat element to aid in the rescue of an incapacitated firefighter.

  A comment was made that the NFPA definition should be adopted because it allows greater use of the device. A situation may come up wherein a firefighter may have to pick a person up vertically 2-3 foot.

  Drag Rescue Device is not designed to lift someone vertically. It is intended to drag an incapacitated firefighter. DRD may fail if used to lift a person vertically.

  8.58. Drag Rescue Device (DRD) Function Test

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  8.58.5.6. The test mannequin shall be placed on its side on a concrete surface.
  8.58.5.10. The test technician shall drag the mannequin in a straight line using a DRD, in accordance with the manufacturer's instructions, for a distance of 2.5 m, +0.5/-0 (8 ft, +1 $^{1}/_{2}$ /-0 ft)

- Fire Fighting, Structural. The Chair proposed to delete the existing definition and replace it with the definitions from NFPA 1971(2013). The existing definition refers to a section of the California Government Code that does not define what a structural fire is.

  Michael Miller (Division) expressed concerns about the use of the word "in" buildings, enclosed structures, etc. Structural firefighting happens in and around the building and using the word "in building, enclosed structures, etc." may create a legal complication when the fire is not being fought inside the building.

Mike Molloy (Anaheim Fire and Rescue) responded that the definition of proximity fire fighting may cover that.

Michael Miller (Division) stated that the term "proximity fires" is used for high heat fires like fires that occur in refineries.

Eric Berg (Division) proposed to revise that definition using the phrase "in and around".

Michael Miller (Division) commented that the phrase "in or around" may interfere with the definition of wildland interface.

The Chair is proposing a new definition to be considered. The definition of structural fire fighting is important because it defines the scope of the Article 10.1.

Structural Fire Fighting. The activities of rescue, fire suppression, and property conservation due to a fire or emergency situation involving building(s), enclosed structure(s), vehicle(s), marine vessel(s), or like properties.

Section 3402.1. Personal Protective Equipment Purchase Quality Standards for Structural and Proximity Fire Fighting.

and

Section 3402.2. Personal Protective Equipment Purchase Quality Standards for Wildland Firefighting.

Peter Healy (OSHSB) provided the background for the proposed new purchase quality standards. Standards for purchase after a certain date were grouped together to make distinction from the other standards that were dispersed in various sections. The purpose is to separate it from the other standards that mandate specific action. This section states that if and when the fire department chooses to purchase protective clothing or equipment, that purchases, even if discretionary, would need to conform to minimum quality standards.

- Bill Taylor (PASMA) asked if inspections and maintenance are considered as mandated activities.

- Peter Healy responded that inspections and maintenance are mandated activities. Since these activities require employees to engage in activities of cleaning and maintenance, they are currently considered as mandates. This is distinguishable from, if the fire department chooses on its own to make a purchase after a certain date; it would need to meet a certain quality standard.

- Bill Taylor (PASMA) does not see the distinction. After a certain date, a standard will have to be met and there is cost; therefore, it is a mandate. In addition, if the standards for inspections and maintenance are adopted, there is cost for that. The proposed standard is a requirement all firefighters have to meet.

- Peter Healy (OSHSB) posed a scenario, if the Department of Finance finds that the laundering and inspection requirements are mandates, and if unfunded, those requirements will most likely be unenforceable. Meanwhile, there is ongoing purchasing being done outside the enforcement dimension. The question becomes, for the ongoing discretionary spending, can equipment purchased need to be of a certain minimum quality without being a mandate, because the decision to purchase or not is itself still discretionary? This is an open question, but enough of an open question to justify having them in discreet sections to allow them to be distinguished separately.

- Ken Lombardi (San Francisco Fire Department) asked if after 2016, would it be possible to buy turn outs that do not meet the 2013 edition? Peter Healy (OSHSB) replied that the proposal may have an effect on the used market in preventing the purchasing of equipment older than the 2013 edition.

- Chris Farrell (NFPA) commented that a year after an effective date of the new edition, the third party certification testing laboratory will no longer be able to certify a product to the previous edition of the standard. They will only certify the products to the newer edition of the NFPA.

- The Chair commented that the date specified in the proposal stating equipment purchased after the "date" may change depending on the effective date of the rulemaking. The "edition" may also change, so the Chair is trying to determine which edition is appropriate.

- Chris Farrell (NFPA) expanded on his previous comment by citing an example. In the year 2020, the equipment will not be able to be certified to the 2013 edition if a 2018 edition is in effect. The NFPA 1971 is updated every 5 years. After the turnover date, it will be difficult to find products certified to the older edition.

- Chris Anaya (former firefighter) asked if from a legal point of view, the regulation cannot state, "must comply with the latest standard".

- Marley Hart (OSHSB) replied that the year must be specified.

- Chris Anaya also asked— do volunteer departments purchase equipment? In his experience, PPE has been given to volunteer departments by other departments; their volunteer department did not purchase PPE.

- Peter Healy (OSHSB) replied that the word "ordered", as used in the proposed text, may matter.

- Richard Weise (Southern Area Fire Equipment Research) cautioned departments regarding the liability of giving away retired equipment to volunteer fire departments.

- Ken Lombardi (San Francisco Fire Department) stated that his department retires their equipment after 10 years. Their department is mindful of their liability when they donate their PPE. He commented that the proposed language may stop the inflow of equipment and may hurt the volunteer departments.

- Richard Weise (Southern Area Fire Equipment Research) stated that the equipment given to explorers cannot be used for firefighting activities, because if they are injured or killed, liability can be associated to that. *The explorer program is special program designed for young adults from 15 to 21 years of age who are interested in learning about a career in the Fire Service.*

- Chris Farrell (NFPA) stated that there is a restriction to not allow PPE older than 10 years to be used for any live fire fighting.

- Tom Foley (TenCate Protective Fabrics) commented that in this section, the proposal provides a minimum standard, but in Section 3402.3, the proposal requires a risk assessment to decide what to purchase. He suggested that purchasing must be made in conjunction with the risk assessment, not just a specification that the equipment must meet NFPA 1971.

  The requirement for the Risk Assessment is not in conflict with the proposed new §3402.3, which requires a risk assessment. Both proposed standards, §3402.1 and §3402.3, are applicable when purchasing or selecting PPE. They complement each other just like NFPA 1971 and NFPA 1851. The risk assessment is the mechanism for the decision making process in choosing among the many makes and models of PPE that are NFPA 1971 compliant.

Section 3402.3. Selection, Inspection, and Maintenance of Protective Ensembles for Structural and Proximity Firefighting.

The members of the advisory committee rejected the Board staff's proposal and the members strongly favored incorporating NFPA 1851 as referenced, with some exceptions. Towards the end of the day, it was decided that the members of the committee will collectively read the standards. The committee members were asked to comment on the various topics covered by the standard, such as risk assessment, selection, cleaning, inspection, and retirement of PPE. A new proposal reflecting the adoption of the NFPA will be developed.

The comments favoring the adoption of NFPA 1851 were as followed:

- Chris Farrell (NFPA) stated that the NFPA does not grant licensing to publish sections of NFPA. Mr. Farrell encourages adoption of the standard in its entirety. The proposal may be hindered by copyright, intellectual property issues by taking sections from the NFPA and inserting them into Title 8.

- Mike Manieri (OSHSB) consulted with the committee members and asked if they prefer the incorporation by reference or the importing of text from NFPA, which raises copyright issues. This will mean that the NFPA documents will be law.

- Ken Lombardi (San Francisco Fire Department) replied that merging the two documents (NFPA and California safety orders) is difficult, because there is disagreement over one word and then another word. Generally, fire departments know the NFPA. These documents have been vetted by experts. He suggested that the committee consider the areas where they may not agree and discuss those areas. He clarified that he is not speaking for all fire departments because incorporating the NFPA will incur cost. For the San Francisco Fire Department, they already follow the NFPA standards.

- Tom Foley (TenCate Protective Fabrics) stated that about 8 years ago, he chaired the CalFire Statewide Committee for PPE Working Group, which covered NFPA 1851. The committee deliberated on whether they have to follow the NFPA. Half of the people were of the opinion that NFPA 1851 are guidelines or recommendation versus Fed OSHA and Title 8 which are regulations that Cal/Fire has to comply with. The committee consulted with an attorney who gave the members a legal opinion that if PPE is a contributing factor to the injury, the agency will be held to the national standard, unless the agency follows a local standard that covers that area. Therefore, unless the agency has a local standard that is defendable in the court of law, the agency will be held to the national consensus standard.

- Richard Weise (Southern Area Fire Equipment Research) commented that fire departments create purchasing specifications using criteria from the NFPA (not Title 8). In California, only a small number of fire departments comply with the NFPA because California is not an NFPA state, but it seems that California is moving towards that.

- The Chair is of the opinion that the procedures for maintaining, cleaning, and inspecting equipment should be readily accessible and printable in Title 8. End-users should not have to purchase the standard. The Chair reviewed a product label and it refers the maintenance back to NFPA 1851. The Chair agrees with the incorporation of NFPA 1971, which covers design, testing, and performance, but not the incorporation of NFPA 1851, which includes instructions to the end-user. The end-user should not have to buy a document to determine that if their employer is facilitating the proper cleaning and inspection of the end-user's equipment.

- Chris Farrell (NFPA) stated that the NFPA standards are available to be viewed on-line, 24 hours a day.

- The Chair commented that in remote mountainous areas, on-line access is limited.

- Chris Anaya (former firefighter) commented that the NFPA documents are technical documents and are based on scientific evidence. It is important that the information not be segmented.

- Tom Foley (TenCate Protective Fabrics) suggested that the committee use the NFPA 1851 as the baseline for discussion and determine from there what portions the committee does not agree with.

- Ken Lombardi (San Francisco Fire Department) stated he was in agreement with Tom Foley.

Risk Assessment

- The Chair asked do the fire departments conduct risk assessments?

- Ken Lombardi (San Francisco Fire Department) stated his department conducts risk assessment in accordance with NFPA 1851.

- Tom Cope (Fresno City Fire Department) has not completed a formal risk assessment.

- Doug Ferro (Cal/Fire) stated that Cal/Fire has completed a risk assessment.

Cleaning and Decontamination of PPE

Ken Lombardi (San Francisco Fire Department) supports the provisions for cleaning and maintenance of PPE. He commented that about four years ago, they did not wash their turns outs using extractors. Now, half of the fire houses have extractors. In addition to laundering using extractors, the San Francisco Fire Department sends their protective clothing to an Independent Service Provider (ISP) once a year, where the clothing is washed and inspected. The reason for the change is the high rate of cancer among their firefighters. Skin absorption is an exposure route for carcinogens to enter the body.

Retirement of PPE

- Ken Lombardi (San Francisco Fire Department) stated that the 10 year expiration is costly to them. They have brand new 10 years old PPE that is still in a bag. It is brand new and there is nothing wrong with it. All of their members are provided with two sets. Maybe the second set does not have to be retired in 10 years as long as it is certified.

Section 3403. Helmet, Eye and Face Protection.

The proposed title change is to reflect relocation of eye and face protection into Section 3403.

Proposed Text for Helmets:

Section 3403 (a) will remain unchanged.

Section 3403 (b)(1)

- Existing subsections (b)(1) and (b)(2). The proposal deletes requirements that are not in agreement with the more current NFPA Standard. The proposal also deletes provisions addressed in other sections. For example, the compatibility of breathing apparatus.

- Proposed new subsection (b)(1) specifies that a label must be present in a structural helmet. The label must state that it meets a certain edition of NFPA 1971. The NFPA 1971 standard specifies the labeling, design, performance, testing and certification requirements for structural fire fighting helmets.

Discussion

The Chair asked what edition is appropriate for helmets in service? The editions are 2013, 2007, and 2001.

Chris Anaya (former firefighter) replied that it should be the latest edition.

Jeff Sedivec (LN Curtis & Sons) stated that based on the NFPA 1851, helmets should be retired 10 years from the date of manufacture.

Angel Sanchez (Phenix Technology) commented that with the current proposed language, 75% of the helmets will not be in compliance. If the label states that the helmets in service shall be NFPA 1971 (2013) compliant, then approximately 75% of helmets in service will not be in compliance.

Ralph Scott (Scotts PPE) commented that the majority of the helmets he inspects do not have a label. The helmets are over 10 years old.

Alvin Brewer (Los Angeles County Fire Department) stated that the sticker will wear. There is no way to track the 10 year requirement. The proposal should include a requirement for a permanent label.

The Chair asked how many years of service is appropriate?

Tom Foley (TenCate Protective Fabrics) replied that helmets are part of the protective ensemble. He does not support treating it differently from the other elements of the protective ensembles. He suggested that the committee recommend the adoptions of NFPA 1851 and NFPA 1971 and the expiration or wear-out date to be 10 years from the date it was placed in service, not the date of manufacture. Fire departments may receive year-end funds that they can use toward purchasing PPE.

Michael Miller (Division) agrees that robust maintenance and inspection is the key to having safe equipment, but he is concerned with being able to track the maintenance and inspection.

Tom Foley (TenCate Protective Garments) responded that helmets have barcodes. They are scanned to record the date it is placed in service. ISPs use them for tracking.

Michael Miller (Division) commented that many of the departments do not have helmets that are manufactured in the last 10 years.

Richard Weise (Southern Area Fire Equipment Research) commented that about 25% of the helmets are compliant with the NFPA. Most of the helmets are OSHA compliant, not NFPA compliant. Also, departments may stock 10 year old turn outs before placing them in service.

Michael Miller (Division) commented that it is important to note that the level of use or wear is different between departments. For example, the volunteer fire department's PPE will not have the same wear and tear as gear from LA County Fire Department. PPE may last longer than 10 years for volunteer departments.

Richard Weise (Southern Area Fire Equipment Research) commented that the reason for the 10 year is the 2 cycle revisions in NFPA. Technology and materials change during that time period. There is a difference in the level of protection afforded a person wearing 10 year old equipment versus 19 year old equipment.

Robert McClellan (Anaheim Fire and Rescue) supports the 10 year retirement from the in service date, except maybe not for helmets. Since fiberglass becomes brittle, should the retirement date be 10 years from the manufacture date versus in service date? In the motor or auto sports industry, the helmet retirement age is generally 5 years.

Shaun Russell (Phenix Technogy Inc) agreed that the motor sports industry follows a retirement age of 5 years. For example, motorcycle helmets that are required per DOT regulations. Manufacturers place a date of manufacture on the helmet. NFPA 1851 states that helmets be retired 10 years from the date of manufacture. The manufacturers cannot put a future date on a helmet and they cannot recertify the product. Certain materials break down over time, but it can also be rapidly increased by chemical exposure, heat, and ultra-violet.

Mike Molloy (Anaheim Fire and Rescue) suggested retaining the retirement date for helmets to 10 years from the manufacture date. The retirement age for turn outs can be extended to 10 years from the date it was placed in service, since there are tests that are available to recertify them. The retirement age can be extended especially when they are stored in a climate controlled environment.

> *The tests for garments are not for re-certifying turn outs. The testing for garments as prescribed in NFPA 1851 are for advanced inspection, for the purpose of determining the condition of the equipment, if there areas of the garment that are in need of repair or is beyond repair. The verified ISP, the original manufacturer, or a member of the organization can make the repair in accordance to Chapter 8 of NFPA 1851.*

Richard Weiss (Southern Area Fire Equipment Research) commented that if the article is stored for 7 or 8 years before it is issued, it should be tested before it is given to the employee. He strongly believes that there is some degree of degradation to that garment.

Chris Farrell (NFPA) commented that the reason for the 10 year requirement is that no one knows the extent of degradation the material will have after a 10 year period or the level of

confidence after the 10 year period. There is a consensus between the manufacturers and the fire service that was reaffirmed in the last cycle that the 10 years is an experiential mark that made sense. Beyond the 10 years, no one knows. There is variability in the use and storage of PPE. Until there is a scientific way to determine the effect of the different storage practices, the different materials and how they interact with the gear, or degrade the fiber, as a safety organization, they recommend 10 years.

The Chair asked if the NFPA's effective date is July 1, 2018, what edition of the 1971 should the helmet be certified to?

Chris Farrell (NFPA) responded that the NFPA 1971 edition is schedule to come out in 2018. The fire department will not be able to buy turn outs manufactured to a previous edition a year after the effective date of the new standard, 2019. Helmets are not recertified by manufacturers. In 2019, the fire departments will not be able to purchase helmets in compliance with the 2013 edition.

Ken Lombardi (San Francisco Fire Department) asked why is the committee considering the language "in service date" in this section and considering the language "purchase by date" for another section?

The Chair replied that the purchase by a date standards are in anticipation of the mandate issue.

Ken Lombardi (San Francisco Fire Department) stated that 80 percent of their helmets are over ten years old and are made of leather, not fiberglass. Their helmets comply with current safety orders, but not the proposal.

Michael Miller (Division) asked if the edition the Chair was looking for was a snap shot in time?

The Chair responded that she is trying to determine what year edition of NFPA 1971 should be posted on the helmet. If a Cal/OSHA inspector responded to an incident, what edition year should the inspector look for?

Ken Lombardi (San Francisco Fire Department) asked why should a functional leather helmet expire when the emergency adsorption portion of the helmet can be repaired and the goggles can be replaced.

Michael Miller (Division) commented that the purpose of labeling is to provide a means to know that the helmet meets a standard, NFPA edition.

Richard Weise (Southern Area Fire Equipment Research) stated that it is important to be careful with the phrases "in use" versus "in service use".

Michael Miller (Division) commented that if the Division performs an inspection, they are interested in the helmets that are currently being used by the employees.

The Chair asked is the date of manufacture posted on the helmet?

Shaun Russell (Phenix Technologies) responded that in order for a helmet to be NFPA compliant, there should be a warning label, label with the lot number, date of manufacture, model number, 3rd party certifier label, and a label with the edition of the NFPA 1971 it complies with.

The Chair asked Ken Lombardi which NFPA editions do San Francisco Fire Department comply with?

Ken Lombardi (San Francisco Fire Department) replied that San Francisco's helmets comply with the current Cal/OSHA safety standard, Section 3403(b)(2), onward.

Michael Miller (Division) asked how many helmets are in service that were purchased before 1988? He stated that essentially there is no requirement for helmets purchased before 1988 to meet a certain consensus standard.

Ken Lombardi (San Francisco Fire Department) asked for clarification if the proposal is for in service or from what we purchase from the effective date of the proposal.

The Chair responded that helmets purchased before 1988 cannot remain in service, they would have to be retire.

The Chair queried the advisory committee whether the consensus is that helmets in service has to be 10 years or less from the date of manufacture.

Richard Weise (Southern Area Fire Equipment Research) responded 10 years or less.

Jeff Sedivec (LN Curtis & Sons) asked if additional labeling is being considered in addition to what NFPA 1971 requires.

The Chair replied "no". If a fire department was inspected, the label on the helmet would need to state that it meets NFPA 1971 and the date should be a manufacture date 10 years or less.

Angle Sanchez (Phenix Technologies) recommended that the year edition should be removed. The proposal should just state that helmets shall meet NFPA 1971 and shall be in service for less than 10 years.

Ken Lombardi (San Francisco Fire Department) stated that if that is the proposal, their department would have to buy 1,800 helmets every 10 years. He asked: what is the basis for the 10 year requirement for helmets? He asked: is there is a test that would be able to determine a safe helmet? If there is a test for helmets, then the helmet would not have to retire until it fails. For the garment, there is a test and if it fails, the garment is retired. There is the 10 year rule, but at least there is a test.

Richard Weise (Southern Area Fire Equipment Research) responded there is a test for helmets, but only a destructive test. It is difficult to determine thermal assault on leather helmets and whether or not it has been cleaned properly. There is currently no test from NFPA or testing thru UL (Underwriters' Laboratories) or SCI that is not destructive.

The Chair asked Chris Farell (NFPA) if NFPA has conducted testing on a helmet that has been stored for 15 years to see how it performs? The Chair was trying to determine if NFPA empirically came up with or confirmed a scientific basis for the 10 year rule.

Chris Farrell responded that the 10 year mark is an overall evaluation of the entire ensemble. It was based on the experience of the members of the committee. There has not been to his knowledge any testing or scientific evidence collection that could point to 5, 10, or 15 years as being the absolute standard. The ensembles are used and stored in so many different environments. If the ensemble performs as designed, but the helmet fails, the end-user will still be hurt. 10 years is the consensus of several hundred years of collective experience of the NFPA members and it equates to two revisions of the NFPA standard.

Tom Foley (TenCate Protective Fabrics) commented that the type of helmets worn is a cultural issue. He stated that it appears that San Francisco is looking at $1.26 million to replace their helmets. He asked Mr. Lombardi, if funding was provided, would the department still be opposed to changing their helmets?

Ken Lombardi (San Francisco Fire Department) stated that San Francisco will still be opposed to it. The leather helmets are lighter than the new helmets.

Bill Taylor (PASMA) stated there is merit to the comment. When police change their helmets, it is a big deal and they start complaining. Mr. Taylor can definitely see that there will be an issue

with changing their boots. If people do not like it, they will not wear it. In addition, the 5 year, 10 year, seems to be a matter of convenience. It appears that there is no scientific data behind it. For example, if 50 helmets are sampled, and 90% came back that they were fine, why not extend the life to 12 years?

Angel Sanchez (Phenix Technologies) commented on the difficulty of conducting random sample that is representative. For example, in the County of Riverside, there are various geographic locations with very different climate or UV exposure such as desserts and high elevation mountains. How is one going to sample? Mr. Sanchez does not know how long their helmets would last. It is hard to get a true random sample.

Richard Weise (Southern Area Fire Equipment Research) commented that the objective of the NFPA committee is to establish a level of protection at the time of purchase and to maintain that level of protection. The PPE is designed for flashover protection.

Tom Foley (TenCate Protective Fabrics) supports adopting NFPA1851, except for the 10 year retirement date for garments. He supports a retirement age of 10 year from date it was placed in service for garments.

Angel Sanchez (Phenix Technologies) suggested that the committee consider recommending language using the "purchase after a certain date" as the criteria and not the "helmets in service shall". If criteria becomes "in service", then there are departments that would have to change all their helmets. As a manufacturer, Phenix Technologies sells helmets that meet only the OSHA standard, not NFPA. The only difference is the components. For example, there are departments that stock goggles. They do not want to purchase the rest of the components, just the helmet. If the proposal goes through, there will be many departments that will not have NFPA compliant helmets. The financial analysis to determine the cost may cause this endeavor to fail. For example, just for San Francisco, it would cost about $1.26 million.

The Chair commented if the language was "purchase by a certain date", it would mean that if a helmet was already in service, it can remain in service. A person can have a helmet that is potentially 20 years old and it does not have to be retired.

Richard Weise (Southern Area Fire Equipment Research) commented that the language should state that helmets purchased after the effective date of the proposal shall comply with the 10 year retirement, not the existing helmet that they already have. About 75% of the helmets are not in compliance.

Chris Farrell (NFPA) commented that the authority having jurisdiction can craft language for a replacement schedule based on budgetary reasons over a period of years. Mr. Farrell encountered a similar situation with the fire hoses.

Michael Miller (Division) asked if there are helmets with no labeling as to the name of the manufacturer or date of manufacture. If the department is asked when the helmet was bought, they would reply it was bought before 1988. Without this information, he asked, how would the Division be able to hold them to the replacement schedule?

Ken Lombardi (San Francisco Fire Department) commented that it would resolve itself overtime. Helmets would be removed by attrition. Employees would retire and a certain amount of helmets would have to be replaced. There would be a transition period.

Michael Miller (Division) acknowledges the need for a transition period. However, he is aware of people who make leather helmets and sell them. They make them in their homes or shop. Some of them meet the labeling requirements of the NFPA, some of them do not. Some departments allow employees to buy their own helmets.

Chris Anaya (former firefighter) commented that there are manufacturers that state they meet the NFPA requirements, but are not NFPA certified. In order to meet the NFPA requirements, the manufacturer has to be certified through a third party company like Intertek, and perform heat flame test and all the required testing.

Richard Weise (Southern Area Fire Equipment Research) commented that departments incur liability when they let people buy their own equipment. The department has to approve the purchase and maintain the equipment.

Section 3403(b)(2)

- Lists the components of a structural fire fighting helmet.

Consensus: Delete subsections (b)(2) and (c)(2).

The Chair commented that in a previous advisory committee meeting about 20 years ago, the committee members wanted some kind of specification so that they know what type of helmet they are getting. The Chair asked if there is any reason for not listing the components of a helmet?

Angel Sanchez (Phenix Technogies) stated it is redundant. If it is an NFPA compliant helmet, the helmet has all the components.

Section 3403(c)(1)

The Chair stated that subsection (c) regarding the proximity of helmets mirrors subsection (b) and the prior comments will be considered.

Proposed New Section 3403(c)(2)

- Lists the different components of a helmet.

Consensus: Subsection (c)(2) will be deleted.

Bill Taylor (PASMA) commented that the listing of the components of the helmet is redundant.

Tom Foley (TenCate Protective Fabrics) commented that the listing of the components is redundant.

Michael Miller (Division) stated that if the committee is going to require NFPA 1971 helmets, the he agrees that it is redundant to list the components.

Proposed Text for Eye and Face Protection

Section 3403 (d)(1)

- Subsection (a) was relocated from existing Section 3404(a)(1).
- Cross reference Section 3382; however, this section references an older edition of the ANSI standard.

Discussion

The Chair asked if the reference to Section 3382 should be deleted since Section 3382 references an older ANSI Z87.1 and the section includes non-relevant hazards pertaining to laser and welding?

Michael Miller (Division) stated that it may be important to keep the reference to Section 3382.

Tom Foley commented that proposed Section 3402.1 specifies that new purchases must meet NFPA 1971 requirements. Therefore, subsection (d)(1) is not necessary.

Section 3403(d)(2)

The Chair stated that the 2013 NFPA 1971 edition references a 2010 ANSI edition, but the 2007 edition does not reference a specific ANSI edition. For legal purposes, the proposal would have to specify an edition. Section 3382 references an older edition of ANSI standard.

Section 3403(d)(3)

Richard Weise (Southern Area Fire Equipment Research) commented that the proposal should be specific in differentiating eye from face protection.

Vicky Wells (San Francisco, Department of Public Health) commented that the proposal should be clear as to when eye protection and when face protection are needed.

Michael Miller (Division) noted that in the proposal, it states that a face shield is in addition to the primary eye protection, meaning that a face shield does not function as the equipment providing the primary eye protection. It provides face protection. There is no definition of primary eye protection. He assumed it to mean that primary eye protection means googles or safety glasses.

Shaun Russell (Phenix Technologies) stated that primary eye protection is defined in NFPA 1851, not NFPA 1971. NFPA 1500 states that goggles are primary eye protection.

> NFPA 1851
> 3.3.33. Faceshield. The component of the helmet that provides limited protection to a portion of the wearer's face. Not primary eye protection.
> NFPA 1500 (2007)
> 3.3.73. Primary Eye Protection. A protective device specifically intended to shield the eyes from certain hazards while permitting vision.

Michael Miller (Division) suggested that the committee adopt a definition of primary eye protection then reference a current ANSI standard.

Chris Anaya (former firefighter) recommended to the committee to strike out subsection (d)(3).

Michael Miller (Division) stated that subsection (d)(3) does not require a person to wear a faceshield. It says that a person cannot use a face shield for eye protection. If a person is using a face shield, it is for face protection.

Angel Sanchez (Phenix Technologies) commented that currently the face shield would meet the standards of goggles. Mr. Sanchez recommended to the committee to strike subsection (d)(3).

He stated that he has not sold helmets with both goggles and face shield. A helmet is either sold with googles or a face shield.

Michael Miller (Division) recommended to the committee to not strike out the reference to Section 3382 because the proposal does not require that the eye protection be worn. Subsection (d)(6) states that when not wearing SCBA, the firefighters will wear eye protection. Firefighters need eye protection against flying and falling debris. Even though Section 3382 references non-relevant hazards, it does not matter because the Division will not enforce the non-relevant hazards, therefore it would not apply.

Conclusion of Day 1: It was determined that the committee should review NFPA 1851 on Day 2 because the NFPA addresses the different requirements found in the proposal.

Day 2

Mandate

Michael Miller (Division) commented that the unenforceable mandate applies only to local government agencies. The agencies funded by the State of California are required to follow Title 8.

Review of NFPA 1851

Introduction

Chris Anaya described the on-going research project regarding NFPA 1851 that is being conducted by the Fire Protection Research Foundation in coordination with other partners such as NIOSH, Intertek, and International Personnel Protection.

http://www.nfpa.org/research/fire-protection-research-foundation/projects-reports-and-proceedings/current-projects/investigation-of-turnout-clothing-contamination-and-validation-of-cleaning-procedures

He stated that the research project started several years ago and was paid by the federal government. The study found chemicals in the blood stream of the firefighters. The second phase of the study concluded last year, but the results has not yet been released. The study examines skin absorption as a route of exposure. The study also reviewed issues regarding contamination of the PPE and the chemicals in the liner that leach out. They found that it was difficult to clean the garments and the chemicals in the PPE remained for a long period of time. The study may find that a 10 year retirement period is too long if the PPE is not fully decontaminated. One of the methods they were using was placing swatches on the turn outs and testing the turn outs to determine if chemicals were removed after technical cleaning.

NFPA 1851 Review

On the first day of the meeting, the advisory committee members recommended to incorporate NFPA 1851 by reference with some exceptions. The objective of the day is to read the NFPA 1851 to determine the areas of consensus and the areas where there is no consensus. The Chair proceeded by reading sections of the NFPA1851 and paused periodically to hear comments.

Chapter 2. Reference Publications.

The Chair gave a general overview of the chapter.

2.1. General.

2.2. NFPA Publications.

2.3. Other Publications.

Chapter 3. Definitions.

The definitions section was not read. The incorporation of NFPA 1851 would result in the definitions being adopted without changes. The definitions were revisited when certain terminology were encountered during the reading of the standard.

Chapter 4. Program.

This chapter was read in its entirety.

The Chair asked for comments regarding the prohibition of adding accessories to the ensemble elements.

Vicky Wells (San Francisco, Department of Health) asked what are the components of the ensemble elements and the definition of accessories?

Chris Farell (NFPA) read the definition of accessories. It is defined as an item, or items, that could be attached to a certified product, but are not necessary for the certified product to meet the requirements of the standard.

Vicky Wells (San Francisco, Department of Public Health) asked if the ensemble can be a mixture of elements from different manufacturers.

Jeff Sedivec (LN Curtis & Sons) responded that there can be different manufacturers for each element. He also noted that the " * " in the standard , such as the one found in Section 4.2.2, means that there is additional information in the annex. It provides guidance in determining what the SOP (Standard Operating Procedures) should include.

Vicky Wells (San Francisco, Department of Public Health) asked a question about protecting the public and personnel from contamination?

Tom Foley (TenCate Protective Fabrics) responded to Vicky Well's question. An example of protecting the public from contamination, firefighters should not participate in school programs with turn outs that are soiled. They should not expose another person to contaminated clothing. With regards to the ensemble versus accessory question; ensembles are head-to-toe, for example, boots and gloves. A flashlight is an example of an accessory. The manufacturer would have to be consulted before mounting a flashlight onto the helmet.

Nancy Koerperich (Cal Fire, Madera-Merced Unit) asked if adding lights or temporary things hanging from the jackets would be allowed.

Chris Farrell (NFPA) answered that if it did not affect performance, there would be no problem. On the other hand, drilling a hole on a helmet may affect the performance.

Nancy Koerperich (Cal/Fire, Madera-Merced Unit) asked if the product literature states that it is NFPA approved, does that mean that it has the manufacturer's approval?

Chris Farrell (NFPA) stated that if something is already attached to the helmet at the time of purchase, then it is certified. For accessories or other items that are not attached, the manufacturer would have to be consulted.

Ralph Scott (Scotts PPE) stated that as an ISP, he sees the garments that come in. If the garment originally came with a SCBA pouch, then he can add it based on the specifications of the manufacturer.

The Chair asked the committee members how many of them do their own cleaning and how many clean their PPE through an ISP?

Ken Lombardi (San Francisco Fire Department) said that they send out their PPE once a year to the ISP and their firefighters are trained on how to clean their garments.

Jeff Sedivec (LN Curtis & Sons) commented that there is the provision regarding the manufacturer trained organization. It allows for train the trainer program.

> ***Section 4.2.4.6 of NFPA 1851***
> *Manufacturer trained organizations performing advanced cleaning and advanced inspection shall be trained by an element manufacturer of the same element type or by a verified ISP. The element manufacturer or verified ISP shall provide documentation that the organization has received the necessary training.*

Chris Farrell (NFPA) read the definitions in NFPA 1851 to answer questions regarding the definitions of advanced cleaning, routine cleaning, specialized cleaning, and verified ISP.

> Advanced Cleaning. The thorough cleaning of ensembles or ensemble elements by washing with cleaning
> Routine Cleaning. The light cleaning of ensembles or ensemble elements performed by the end user without taking the elements out of service.
> Specialized Cleaning. Cleaning to remove hazardous materials or body fluids.
> Verified ISP. An independent service provider verified by a third-party certification organization to conduct any one or combination of advanced inspection, advanced cleaning, basic repair, or advanced repair service.

Jeff Sedivec (LN Curtis & Sons) noted that there is also a term called "verified organization". An organization verified by a third party inspection certification organization to conduct any one or a combination of advanced cleaning, advanced inspection, basic repair, and advanced repair on any of the organization's elements.

Ken Lombardi (San Francisco Fire Department) asked what the advanced inspection entails?

The Chair responded that Appendix B, page 52 of the proposal, contains information regarding advanced inspection.

Richard Weise (Southern Area Fire Equipment Research) added that advanced inspection could be the inspection conducted by an ISP, like sending the garments once a year to Scotts PPE for inspection. The ISP can also make the repairs.

Chris Farrell (NFPA) added that a manufacturer trained organization can do the advanced inspection. The only people not allowed to do advanced inspection are people who are not trained.

Ken Lombardi (San Francisco Fire Department) commented that it sounds like organizations can do inspections on their own.

Jeff Sedivec (LN Curtis & Sons) commented that the major cost to conducting cleaning and inspection are the cost of the hydrostatic tester and front load washing machines.

There was some discussion about Table 4.2.4. Responsibilities for Garment Element Inspection, Cleaning and Repair. Table 4.2.4 details what a manufacturer, a verified ISP, a verified organization, a manufacturer trained organization, and a user are allowed to do.

Jeff Sedivec (LN Curtis & Sons) added that a manufacturer trained organization can opt to train individuals responsible for clothing or train every employee so they can do their own advanced inspection.

Chapter 4.3. Records.

Marley Hart (OSHSB) asked if organizations follow the recordkeeping requirements of Chapter 4.3?

Section 4.3.3 of NFPA 1851
At least the following records shall be kept for each protective ensemble or ensemble element:

1. Person whom the element is issued.
2. Date and condition when issued.
3. Manufacturer and model name or design.
4. Manufacturer's identification number, lot number, or serial number.
5. Month and year of manufacture.
6. Date(s) and finding(s) of advanced inspection (s).
7. Date(s) and finding(s) of advance cleaning or decontamination.
8. Reason for advanced cleaning or decontamination and who performed the cleaning or decontamination.
9. Date(s) of repair(s), who performed repair(s), and brief description of repair(s).
10. Date of retirement.
11. Date and method of disposal .

Tom Cope (International Association of Fire Fighters, Local 753) answered that ISPs do the recordkeeping. He asked if the ISP can keep the records per Chapter 4.3?

The Chair answered that it must be defined in their contract with the ISP.

Eric Berg (Division) commented that it is not an issue, provided that there is a record and they can produce it.

The Chair asked how long records are required to be kept.

Chris Farrell (NFPA) responded from purchase to retirement.

The Chair asked the committee members for further comments regarding recordkeeping.

Vicky Wells (San Francisco, Department of Public Health) commented that the information about the date and method of disposal does not relate to worker health and safety.

The Chair responded that it is a liability issue for the organization. In addition, there is the uncertainty about the condition of the PPE at the time of retirement. The purpose for noting the date and method of disposal is to prevent substandard PPE to be reused by other firefighters.

Chris Anaya (former firefighter) commented that turnouts may be contaminated by hazardous materials or asbestos. There may be asbestos fibers that are not removed. It may be a good idea to know where they went, where they are being kept, and a record that verifies that it was disposed of properly.

Vicky Wells (San Francisco, Department of Public Health) reiterated her comment that the date and method of disposal is not an appropriate health and safety record to be kept. Disposal is not a health and safety issue.

Richard Weise (Southern Area Fire Equipment Research) stated that it is a tracking issue. He cited an incident wherein a garment that was retired was sold on Ebay.

Michael Miller (Division) commented that during an inspection regarding an injury incident, one of the ensembles was retired because it was in poor condition. The employee wanted to keep it, but the organization did not want to give it to him. The recordkeeping requirement would prevent PPE from going to the employee.

John Cummins (DIR) asked how does a person trace it back to the previous owner if someone bought it on EBay?

Ralph Scott (Scotts PPE) replied that all the garments have bar codes. He can contact the manufacturer and the manufacturer will be able to identify the organization the garment was sold to. He indicated that he has kept his records in his database since year 2000.

Vicky Wells (San Francisco, Department of Public Health) commented that the recordkeeping is to verify the annual testing and inspection. She does not recommend a regulatory requirement of keeping a record longer than 3 years after the duration of the garment or retirement of the garment.

Eric Berg (Division) commented that chemical exposure records are required to be kept 30 years.

Michael Miller (Division) clarified that special events or cleaning may trigger the 30 year requirement.

Michael Manieri (OSHSB) asked the Division if the 30 year recordkeeping requirement is across the board?

Vicky Wells (San Francisco, Department of Public Health) respectfully disagreed with the Division. She stated that records of routine inspection and cleaning do not fall under exposure records.

Nancy Koerperich (Cal/Fire, Madera-Mariposa-Merced Unit) commented regarding exposure records. If something shows up in CBRN, then maybe that is a record that should be kept.

Michael Miller (Division) clarified that the records the Division is referring to are advanced cleaning and decontamination related to a special event.

The Chair confirmed that the Division was referring to records of specialized cleaning and that those records of specialized cleaning should be kept for 30 years.

Vicky Wells (San Francisco, Department of Public Health) commented that there are other places that require such records to be kept. The committee is talking about PPE cleaning. Does that mean when there is a hazmat incident, does the employer have to keep records every time an employee suits up?

Nancy Koerperich (Cal/Fire, Madera-Mariposa-Merced Unit) responded that Cal/Fire keeps records of it.

Vicky Wells (San Francisco, Department of Public Health) asked if those records are kept during the duration of employment and 30 years after?

Nancy Koerperich (Cal/Fire, Madera-Mariposa-Merced Unit) replied “yes”. Records are kept every time there is a hazmat incident and the 30 years after. The specifications of PPE change over time. It may be useful to know the specification of the PPE at the time of exposure.

Mike Molloy (Anaheim Fire and Rescue) commented that records of exposure reports are tied to the person, not to the suit.

Michael Miller (Division) commented that the committee is not discussing hazardous material incidents at the moment, but there were concerns about the accumulation of contaminants on the turnout gear. Hazmat gear gets decontaminated. It does not build up to continual contamination.

Mike Molloy (Anaheim Fire and Rescue) stated that he maintains exposure reports on a group of people and not on turnouts. He does not maintain records of their turnouts at the time of the incident. He does not record the serial numbers of their turnouts. He keeps a record of their exposure.

Michael Miller (Division) commented that in a small fire department, multiple personnel can use the same turnouts over their lifetime. Turnouts are not always associated with an individual.

Jeff Sedivec (LN Curtis & Sons) commented that it may be beneficial to go back to the records and see how many exposures. On the volunteer side, equipment is transient, but there are applications that can keep track of turnouts. If Bob, Ted and Sue all develop cancer, then it is possible to determine the PPE that was worn.

Mike Molloy (Anaheim Fire and Rescue) commented that it is cumbersome and nearly impossible to track turnouts and associate them to a specific incident, unless the employees are barcoded at the incident.

Chapter 4.4. Manufacturer's Instruction.

This section was not read because Cal/OSHA does not regulate manufacturers.

Chapter 4.5. Protecting the Public and Personnel from Contamination.

Michael Miller (Division) asked if the employee could not bring turnout bottoms to the bunk area, next to the bunk? There was a collective reply "no".

Chapter 5. Selection and Purchase.

The chapter was read in its entity.

Mike Molloy (Captain Services) asked a question regarding the State of Texas' adoption of NFPA 1851. He asked if there is documentation of the section they omitted or was it adopted in its entirety.

Chris Farrell (NFPA) replied that Texas adopted it in its entirety. They have 3 templates they can use for risk assessments. A couple of areas are more stringent.

Tom Foley (TenCate Protective Fabrics) stated that Texas has basic templates and some are more intensive. They use the risk assessment to determine if structural firefighting is appropriate for ARFF (Aircraft Rescue and Fire Fighting) activities. Because of the new technology and how fire apparatus works, they want to get away from aluminized gear (proximity fire fighting gear). The new apparatus permits the firefighters to not get out of vehicles to fight the fires. When the

firefighters get out of the vehicle, it is more of a structural fire fighting activity. They use the risk assessment to sort that out.

The Texas Commission on Fire Protection required the completion of risk assessment in 18 months. They have to review their exposure fighting fires and the 2,394 fabric composite availability and determine how it will perform based on their injury data. They have to adjust TPP (Thermal Protective Performance) versus THL (Thermal Heat Loss) and take a look at burn injury data.

Vicky Wells (San Francisco, Department of Public Health) recommended the adoption of the annex as non-mandatory.

Ken Lombardi (San Francisco Fire Department) stated that they use regular turn outs for fire fighting at airports.

Jeff Sedivec (LN Curtis & Sons) commented that the annex is supplemental information. The language is permissive.

Michael Miller (Division) asked if the State Fire Marshal adopted the NFPA standards?

Chris Farrell (NFPA) replied "yes", and that it was adopted by the Texas Fire Commission.

Michael Miller (Division) noted that Texas is a Federal OSHA state.

Chris Anaya (former firefighter) stated that Texas is not a state plan. Texas adopted NFPA for all their firefighting decisions.

Michael Miller (Division) asked if the State Fire Marshal enforces health and safety for firefighters?

Chris Anaya (former firefighter) replied "yes".

Richard Weise (Southern Area Fire Equipment Research) commented that the U.S. Air Force performs a global risk assessments.

Tom Foley (TenCate Protective Fabrics) added to his previous statement, stating that most of the departments have moved from aluminized gear to structural gear, and they use that risk assessment to arrive at that decision.

Vicky Wells (San Francisco, Department of Public Health) commented for the need of an implementation schedule.

Richard Weise (Southern Area Fire Equipment Research) added that Texas is not 100% NFPA compliant yet.

Chris Anaya (former firefighter) suggested that provisions in Section 5.1.6 to ensure proper interface between ensembles should not be phased in.

Nancy Koperich (Cal/Fire, Madera-Mariposa-Merced Unit) asked which provisions are being phased in?

The Chair responded that the advisory committee has not determined that yet.

Chapter 6. Inspection.

This chapter was read in its entirety.

Nancy Koerperich (Cal/Fire, Madera-Mariposa-Merced Unit) asked if turnouts contaminated with blood would have to be retired because it is a biological agent.

The Chair stated that the turnout would not have to be retired.

Vicky Wells (San Francisco, Department of Public Health) stated that her understanding is that there are no CBRN ensembles. She suggested the deletion of all the CBRN references to the standard.

Jeff Sedivec (LN Curtis & Sons) commented that NFPA wrote CBRN agents with CBRN terrorism agents as the intent.

Chris Farrell (NFPA) agreed with Jeff Sedivec.

Vicky Wells (San Francisco, Department of Public Health) commented that there are instances wherein the contamination is not from a CBRN agent, but there is no way to decontaminate the PPE. Then the PPE will be retired if there is no way to decontaminate. For example, turnouts contaminated with asbestos.

Kevin White (California Professional Association of Firefighters) asked for clarification regarding Section 6.1.2., if the section meant that the elements must be cleaned or decontaminated, but they can opt to not decontaminate, which will cause the PPE to be retired?

Chapter 6 of NFPA 1851
6.1.2. Any ensemble elements that are found to be soiled or contaminated shall be cleaned or decontaminated before any additional inspection is initiated. Where ensemble elements are found to be contaminated by CBRN agents, the ensemble shall be retired.

The Chair replied that the intent of Section 6.1.2 is to clean the garment before performing a detailed inspection so as to not contaminate oneself or others while performing the inspection. However, if the garment is contaminated with a CBRN terrorism agent, the garment shall be retired immediately. It has to be bagged, sealed, and disposed.

Michael Miller (Division) stated that CBRN contamination is different from when there is blood on the turnout.

The Chair asked the committee members if routine inspections have to be documented.
Chris Farrell (NFPA) stated that routine inspections do not have to be documented.

Michael Miller (Division) agreed that documentation of routine inspections are cumbersome and do not need to be documented. The standards being proposed are minimum standards. This does not preclude departments from incorporating routine inspections into their monthly bunker inspections.

Chris Farrell (NFPA) stated that the list of information to record does not include routine inspections. He was referring to Section 4.3.3.

Ralph Scott (Scots PPE) commented that his company performs a complete liner inspection on the 13th month and not the 3rd year as required by the NFPA standard, due to a warranty issue. It is important to detect the problem before the warranty expires.

Jeff Sedivec (LN Curtis & Sons) stated that the moisture barrier warranty typically expires on the 3rd year. With regards to implementation, due to the varying years of service (age of PPE), it is difficult to determine which test (light evaluation of liner, leakage evaluation, or moisture barrier evaluation) to perform for each garment.

Bill Taylor (PASMA) asked how often does a person have to do the advanced inspection?

Richard Weise (Southern Area Fire Equipment Research) replied that it varies on individual use. He referred to the warranty.

Advanced inspection shall be conducted at a minimum of once every year. The annual inspection includes the Light Evaluation of Liners and Leakage Evaluation of Liners found in

Chapter 12, Section 12.1 and 12.2. Section 6.4 states that the complete liner inspection, which includes the Water Penetration Barrier Evaluation, shall be conducted at a minimum after 3 years in service and annually thereafter. The complete liner test can be completed in lieu of tests in Sections 12.1 and 12.2.

Jeff Sedivec (LN Curtis & Sons) replied that advance inspection should be conducted after an incident. If the garments are being dismantled and washed, the advanced inspection can be conducted then.

Chapter 7. Decontamination.

This chapter was read in its entirety.

Bill Taylor (PASMA) asked, what kind of test can the employer use to determine the extent of the contamination? When firefighters respond to a hazmat scene, how do they determine the extent of the contamination?

An unidentifiable member responded that firefighters try to determine what they may be exposed to while present on scene. Firefighters may bag their individual turnouts and use a meter to see if there is off gassing.

Vicky Wells (San Francisco, Department of Health) replied that one of the ways to determine the extent of the contamination is through visual inspection of the garment and visual inspection of the building materials. She also asked for clarification regarding a designated utility sink. She stated that in the fire stations, the garments are washed in the extractors.

Jeff Sedivec (LN Curtis & Sons) stated that the term "designated utility sink" does not mean that it can only be used for PPE.

Chapter 10. Retirement, Disposition, and Special Incident Procedure.

The chapter was read in its entirety.

Chris Anaya (former firefighter) asked Ralph Scott, Scotts PPE to explain the criteria for retiring PPE.

Ralph Scott (Scotts PPE) replied that the department and the ISP develop a cost matrix to determine when the PPE should retire. If the damage exceeds a certain cost threshold, the garment will not be repaired and it will be retired.

Nancy Koerperich (Cal/Fire, Madera-Mariposa-Merced Unit) commented that the retirement of a garment 10 years after it is manufactured is one of the biggest issues in the implementation of

NFPA 1851. Cal/Fire hires seasonal employees and it is difficult to stock garments if it expires 10 years from the date of manufacture. She stated that she cannot plan in advance. She cannot anticipate the number of seasonal employees the State will hire. There is no time to custom order. For example, it took 5 years before the department hired a seasonal firefighter who is 6 foot and 4 inches tall and the garment was 5 years old before it was placed in service.

The Chair asked how much advance noticed does the department get?

Nancy Koerperich (Cal/Fire, Madera-Mariposa-Merced Unit) replied that it depends on what time of year. The department typically receives drought funding during April or May. The department had the opportunity to hire 15 employees, but was only able to hire 5 employees because the department has 5 sets of ensembles in the warehouse. The department cannot stock too many ensembles because they do not know where the seasonal employees will work.

Chris Anaya (former firefighter) commented on the importance of adhering to the 10 year retirement rule. He cited an incident wherein the firefighters of a fire agency were wearing garments with various years in service. The captain was wearing one type of ensemble and the other firefighters were in different sets of ensembles. Some of the firefighters said it was too hot when the captain was telling them to go further. This created a false assumption that the young firefighters did not have a high tolerance for heat. They were wearing different turn outs with different TPP (Thermal Protective Performance) rating. He is of the opinion that the company should be wearing the same type of PPE. He feels that ensembles certified to different editions, 2013 versus 2009 or 2003 editions are problematic. There is a new edition every 5 years. Each edition is intended to improve the ensemble.

Ken Lombardi (San Francisco Fire Department) commented that the 10 year retirement rule will not solve the issue of varying protective ensembles. A department will still have a different crew with different years. He asked the committee to explain the reason why protective ensembles need to be retired after 10 years?

Chris Farrell (NFPA) replied that 10 years represent 2 cycles of NFPA editions.

Ken Lombardi (San Francisco Fire Department) commented that the bigger departments can implement the 10 year rule, but there are 750 departments in the State. Some departments do not have enough funds to change their protective gear every 10 years. It seems wasteful to throw away the protective gear after 10 years due to an expiration date. If the PPE passes inspection, he does not see a reason to throw them away. He supports the idea that at the time of purchase, it must be compliant with the latest edition. He asked why PPE should be arbitrarily thrown away?

Chris Farrell (NFPA) read from the Annex, NFPA rationale for the 10 year rule. 10 years equate to 2 revision cycles with performance enhancement. Absent of scientific non-destructive testing, the technical committee reaffirmed the 10 year rule.

> **A.10.1.1 (4th paragraph)**
> Experience suggests that ensembles and ensemble elements that are approaching 10 years since the date of their manufacture have a high likelihood of performance deficiencies in multiple areas that can often be detected only by destructive testing. Additionally, experience suggests that the reflective outer shell of proximity elements that are approaching 5 years since the date of manufacture have a high likelihood of performance failures that can only be detected by destructive testing. Such performance failures could compromise firefighter safety.
> It is important to understand that the actual service life of ensembles and ensemble elements varies depending on the amount of their use and the care they receive. Factors such as the size of the department, area covered, types of exposures, and the aggressiveness of the individual fire fighter are all considerations in how long any ensemble element will last. It is possible that a protective element could be exposed to circumstances that totally destroy it the first time it is utilized. Since the purpose of fire fighters' protective elements is to protect the wearer, if the element has saved a life or prevented serious injury, even just once, it has done its job. In many cases, an ensemble or ensemble element will need to be retired sooner than 10 years (or 5 years for the proximity reflective outer shell component).

Nancy Koerperich (Cal/Fire, Madera-Mariposa-Merced Unit) commented that for smaller fire departments and volunteer departments, the grant dollars are allocated to purchasing turnouts. The smaller and volunteer departments she represents cannot keep up with the amount of turnouts that need to be purchased. If the turnouts are stored appropriately, they should be able to utilize the turn outs 10 years from the date it was placed in service, if it passes inspection. In a busy fire station, the PPE may need to be retired after 2 years.

Chris Anaya (former firefighter) stated that there is degradation while in storage. It maybe a 10% degradation. The newer turnouts will provide a higher level of protection.

Ken Lombardi (San Francisco Fire Department) commented that for turn outs, after a certain threshold of performance, it does not matter. The turn outs are over engineered and manufactured. The Scott mask (respirator) melts before the turn out melts.

Michael Miller (Division) commented that currently, the safety order only requires that the employer develop a written plan for selection, inspection, maintenance, and use. He supports the adoption of the additional provisions for inspection, maintenance, use, and selection that are being discussed. The addition of those provisions would result in a longer lasting PPE. He is of the opinion that the inspection program can identify problems with equipment and pull it out of service. He personally has worked in a department that is not as busy. The 10 year mark is ideal, but there are other competing funding priorities. For example, replacing essentially good turn outs versus buying a thermal imaging camera or buying new hoses or sending employees to specialized training.

Robert McClellan (Anaheim Fire and Rescue) asked if the proposal included the 10 year rule, would the State pay for it?

Marley Hart (OSHSB) responded the funding will be addressed as a separate matter.

Jeff Sedivec (LN Curtis & Sons) asked an ISP a hypothetical question. If a garment has been in service for 2 years and the garment is already 12 years old and needs minor repair, what kind of work can be done to the PPE?

Ralph Scott (Scotts PPE) responded that he cannot work on PPE that is over 10 years old.

Ken Lombardi (San Francisco Fire Department) stated that he agrees with that comment. Once a garment is over 10 years old and it needs repair, it should be retired. However, a garment that is essentially brand new from storage and does not need repair, it should be usable.

Richard Weise (Southern Area Equipment Research) commented that even when it is stored (not in use), there is degradation over time.

Chris Anaya (former firefighter) commented that there is no objective testing other than destructive testing to determine if protective ensembles are good enough to extend the life beyond the 10 years. That decision will be subjective. He was not in favor of extending the service life of the protective ensemble 10 years from the date of manufacture.

In response to the comment or assumption that manufacturers are behind the 10 year rule, Jeff Sedivec (LN Curtis & Sons) stated that the 10 year shelf life from the date of manufacture creates a supply challenge. Prior to the 10 year rule, manufacturers could make turnouts and put them on the shelf. After 6 months from the date of the new edition, the manufacturers stop manufacturing. Garments that are closer to their expiration date have to be heavily discounted.

Ken Lombardi (San Francisco Fire Department) stated that they store about 10% over what they expect to use.

Robert McClellan (Anaheim Fire and Rescue) commented that currently the standards are not enforced. Many of the members have stated that they cannot comply with the 10 year rule, due to funding.

Vicky Wells (San Francisco, Department of Public Health) commented that a person should be able to determine if the piece of equipment is suitable for use.

Richard Weise (Southern Area Fire Equipment Research) commented that a decision will need to be made with regards to the retirement of protective ensemble, including brand new PPE. What should the retirement date be: 10, 15, 19 years? What if it is stored for 10 years or 15 years?

Nancy Koerperich (Cal/Fire, Madera-Mariposa-Merced Unit) commented that there is a business aspect to these decisions. Departments have to meet OSHA requirements, NFPA requirements. There is a finite resource that can be allocated to the protective ensembles and to other fire equipment. If the protective ensemble is inspected before it was placed in service, and the year it was placed in was marked, can the 10 years be from the date it was placed in service?

Jeff Sedivec (LN Curtis & Sons) commented that the new edition of the NFPA omitted the requirement that stored gear is inspected annually. He suggested a compromise: remove the 10 year shelf life from the date of manufacture and require unused protective garments to be part of the advanced inspection cycle.

Ralph Scott (Scotts PPE) commented that in 2000, there was no moisture barrier to address bloodborne hazards. Chris Farrell (NFPA) concurred with Mr. Scott. He is concerned that with the longer retirement period, some design specification requirements would be missed from the newer edition. For example, the 2000 edition did not have a moisture barrier to address bloodborne pathogen. Without a retirement date, would that garment be acceptable?

The Chair responded stating that AB 2146 requires the Standards Board to review the standards every 5 years. This means that the standards will be reviewed and updated if needed.

Nancy Koerperich (Cal/Fire, Madera-Mariposa-Merced Unit) commented that the garment would have to meet the TPP (Thermal Protective Performance) and THL (Thermal Heat Loss) requirements.

Chris Farrell (NFPA) commented that the design, performance, and testing requirements in the NFPA are all interrelated. Currently, there is no repeatable, reproducible non-destructive testing that would provide a person with scientific data that would help that person to determine the effect of having a turn out gear that was manufactured “x” number of years ago. 10 years from the date of manufacture is the best the NFPA can recommend now. There is on-going research on cleaning and decontamination. The study may indicate that PPE will have to be retired sooner than 10 years. The study may indicate that this is how the firefighters are getting cancer. There is no scientific data that indicates that protective ensembles older than 10 years are appropriate or not appropriate.

Nancy Koerperich (Cal/Fire, Mariposa-Madera-Merced Unit) recommended that the retirement date should be 10 years from the date it was placed in service.

Jeff Sedivec (LN Curtis & Sons) commented the department's risk assessment should reflect that choice.

Chris Anaya (former firefighter) commented that a department's decision to exceed that retirement period would be contrary to the manufacturer's recommendation, which references NFPA 1851.

Richard Weise (Southern Area Fire Equipment Research) commented that retirement of PPE is part of the cost of doing business.

Vicky Wells (San Francisco, Department of Public Health) suggested a compromise. PPE older than 10 years from the date of manufacture will be inspected by an ISP.
Scott Ralph (Scotts PPE) said that he cleans and inspects about 60 to 65 sets per day and the number of 10 year old (from the date of manufacture) PPE in service was minimal. He has not inspected PPE that is unused and brand new that is in storage.

Retirement Method or Disposal

Ken Lombardi (San Francisco Fire Department) stated that currently their department donates retired PPE to a developing country. Their department sent a shipment to Nicaragua. Their department's PPE are safer than what they have. Firefighters from developing countries probably respond to fires wearing combustible shirts or street clothes.

Michael Miller (Division) stated that the purpose of the requirement is to prevent reuse of retired gears in California. Cal/OSHA does not have jurisdiction outside of California.

Jeff Sedivec (LN Curtis & Sons) asked if there is documentation that shows that PPE was shipped to another country and therefore cannot be used for live fire in California, would that be acceptable?

Michael Miller (Division) replied that PPE can be used for firefighting academy as long as it is labeled and not used for live fire. Shipment outside the country, outside California is out of the Cal/OSHA's jurisdiction.

Vicky Wells (San Francisco, Department of Public Health) commented that Cal/OSHA is not a disposal regulator.

Mike Manieri (OSHSB) asked the committee when is a garment beyond repair, meaning how severely damaged is it before it needs to be retired?

Richard Weise (Southern Area Fire Equipment Research) replied that it is a matter of cost issue and percentage of damage issue. He develops an agreement with the client (cost matrix) to determine when it is more cost effective to retire a garment versus repair.

Jeff Sedivec (LN Curtis & Sons) replied that it is a cost analysis issue, weighing the cost of repair versus purchasing new equipment.

Conclusion

The Chair stated that the minutes, the new proposed text, and the invitation to the next advisory committee meeting will be sent. A suggestion was made to schedule the next meeting in Southern California.

The meeting was adjourned at approximately 4:00 PM.