

MINUTES OF THE ADVISORY COMMITTEE FOR
GENERAL INDUSTRY SAFETY ORDERS
SECTIONS 3401, 3402.1, 3402.3, and 3403-3409
PERSONAL PROTECTIVE CLOTHING AND EQUIPMENT FOR FIRE FIGHTERS

November 15, 2022

Videoconference Via Webex and
In-person Location
Sacramento Metropolitan Fire District Headquarters
10545 Armstrong Avenue, Suite 200
Mather, CA 95655

1. Call to Order.

The hybrid in-person and video conference meeting was called to order by the Committee Chair, Maryrose Chan, (Chair) Senior Safety Engineer, Occupational Safety and Health Standards Board (Board), at 9:00 am on Thursday, November 15, 2022, in Sacramento, CA. The Committee Chair was assisted by Bernie Osburn, Associate Governmental Program Analyst.

2. Welcoming Remarks.

The Committee Chair welcomed the attendees. Members of the advisory committee (AC) meeting introduced themselves. The Chair briefed the committee members on the status of the rulemaking. The Office of Administrative Law (OAL) completed their review, and the rulemaking was submitted to the Secretary of State on November 7, 2022. The rule will become effective on January 1, 2023.

The enforcement of the regulations will begin on January 1, 2023, except for sections with an extended effective date, such as section 3402.3. Fire departments were provided one year to write and implement their National Fire Protection Association (NFPA) 1851 program. Fire departments were given three years from January 1, 2023, to implement the retirement chapter of NFPA 1851. Therefore, Chapter 10 of NFPA 1851 will not be in effect before 2026. It is estimated that Version 2 will take at least three years to complete.

The **Chair** stated that she visited Sacramento Metropolitan Fire District (Sac Metro) to learn about their implementation of the NFPA program. She urged departments to network and learn from each other. Sac Metro gave the Chair a high level briefing on how they implement their NFPA 1851. The Chair observed how Sac Metro does their routine cleaning. They do their cleaning in one centralized location. Protective ensembles are sent out to an Independent Service Provider (ISP) for advanced cleaning at least once a year. (Version 2 will require advance cleaning a minimum of twice a year.) They use a software system for tracking and inventory. They create a bar code to match the manufacturers. Sac Metro also has a loaner system. They maintain a stock of protective ensembles for loaning. There may be times when their assigned ensembles

are being cleaned, and so the loaner system ensures that there is Personal Protective Equipment (PPE) available. Some departments may locate their extractors at various fire stations. NFPA 1851 is a performance based standard, so fire departments are left with the task to figure out what works best depending on their organization.

Jeremy Lawson (CAL FIRE) asked if the committee is trying to get the update to regulation 100 percent done before we have any real-world knowledge of how the current regulation that has not gone into effect is really impacting the California fire service. He was a little hesitant about the process of updating regulations when the first version is not yet in effect. He understood that the regulation development process may take two to three years. However, the meetings are making determinations about the future without any real-world knowledge of how the current regulation is actually going to impact the fire service.

Many regulations are contingent upon those outside of California fire service and fire departments. He said that he does not know if advisory committee members can make some true qualitative decisions about knowing what the future looks like when there is history living underneath this regulation.

He asked if the committee is going to try and finish up something in the draft proposal from the last meeting. His questions were:

- Are we trying to move through this process, checking the boxes on particular portions of this being done, or are we looking at the final meaning reviewing 100 percent of the products that we are taught?
- Are we looking at everything that we are doing in these meetings as the final meeting reviewing everything, or are we checking things off and considering them done along this process?

The **Chair** replied that the advisory committee process is a process to get the input from stakeholders as to how the proposal should read. After the advisory committee meeting process has concluded, the draft proposal is the proposal that will be noticed as the proposed text. People will have the opportunity to submit written comments. *Correction: The draft proposal will be subject to internal review.*

The purpose of these committee meetings is to fulfill the requirement to review the NFPA standards every five years and determine if it provides a greater level of safety. If it does, then we are to engage in rulemaking.

In our last meeting in June 2022, we discussed NFPA 1851 and the cleaning efficiencies required for verified ISPs, testing to make sure that the protective ensembles are clean. The committee decided that the newer edition provides a greater level of safety. The committee made a decision to incorporate NFPA 1851, 2020 edition, by reference and proposed language to clarify portions of NFPA 1851 that need clarification. This is what the labor code requires, and that is the process to be undertaken at this meeting.

Jeremy Lawson (CAL FIRE) replied that he understood there are regulations and rules that must be followed. He cautioned that members are in a situation where they are approving a second version that is going to take several years before it is enacted before when the first version is not yet effective.

He said members should be working along the path of getting the things done that need to get done and at the same time, in a final version or at a final meeting, look at the totality of the documents that have been discussed to make sure that everything is coherent with what was done at previous meetings.

This will allow members to see what is and is not working out in the field and in the real world, under the current regulation being in place for at least a few months before we have our final meeting. He was extremely concerned about the realities of this regulation and the difficulty the California fire service is going to have in meeting these requirements. Certainly, there are individual agencies out there that are ahead of the game, others that have not yet begun and a variety that are in the middle of it.

There are still some real questions as to whether all of the logistical items will be in place for fire agencies in California to meet these regulations. He thinks there are some real questions as to whether those are actually available right now.

The **Chair** replied the AC does not approve these regulations. The board members approve them. They vote on the regulations that we are going to get proposed. The Chair asked if Jeremy Lawson would like to request to have a final meeting to go over the entire proposal after we draft the updates to Article 10.1, and that is certainly a possibility.

By that time, California would have at least one year experience in the implementing of these regulations. The first meeting was in June, today's meeting is in November and the third meeting will probably be around April or May 2023. Then because of the fire season the fourth meeting would probably be in November 2023, depending on the fire situation. The committee may try to have a meeting in May or June 2024, if possible. Stakeholder input will help inform the timing of the next meeting. There is going to be some time before this advisory committee meeting process is finished.

The Chair urged members to ask questions and propose amendments during the development phase of the proposal before it gets noticed. The goal is to develop a proposal that will not receive as many written comments. It is difficult to have a back and forth dialogue during the written comment period. The committee discussion is to try to address the issues ahead of time by getting input from the stakeholders or members of the committee.

3. Review of June Post AC draft discussion.

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

Subsection (a)

The proposal consolidates the requirements for each element to meet NFPA 1971, 2018 edition, into one subsection and deletes subsequent sections except for subsections regarding Personal Alert Safety Systems and Self-Contained Breathing Apparatuses.

Outcome

No change to the proposal.

Discussion

Hannah Billows (CAL FIRE) asked about the definition of personal protective clothing or ensemble elements, and each individual element such as boots, helmets, etc. She proposed to add a definition or leave in the existing definition.

The **Chair** replied that when a document is incorporated by reference, the entire document is incorporated unless there is an exception. There is a set of definitions that are in the chapter of definitions. In version 1, the regulations that will be effective January 2023, existing definitions that were inconsistent or conflict with the NFPA standards were deleted. The definitions and the scope for article 10.1 will be as stated in the NFPA standard that is incorporated by reference.

The section requires that if the employer/department needs to purchase new equipment then the purchases must meet NFPA 1971, 2018 edition, which is the latest edition. If NFPA releases a new edition by the time advisory committee activities are finished, then the specified edition will be revised. This is to maximize the 10-year life of the protective ensemble. If the department purchases protective ensembles made to the older edition of NFPA 1971, then then the life of the ensemble will not be maximized.

Jerome Hathaway (Oakland Fire Department) stated that since the definitions are included in the NFPA standard, there is no need to duplicate the definitions.

Jeff Knobbe (Alameda County Fire Department) agreed with Mr. Hathaway that there is no need to duplicate. The definitions in NFPA are clear as to what is included in a protective ensemble or ensemble elements.

§ 3402.3. Selection, Inspection and Maintenance of Protective Ensembles for Structural Fire Fighting and Proximity Fire Fighting

Subsection (a)

The proposal adds “cared for” and “stored” to clarify that protective ensembles must be cared for and stored in accordance with NFPA 1851. The proposal also updates the

NFPA 1851 to the 2020 edition and clarifies the portion of the NFPA 1851 that is not incorporated by reference.

The exception was renumbered to subsection (b).

Outcome

Unfinished. During the next meeting, the Chair will propose a revised subsection (a) to provide clarity that the requirements of NFPA 1851 is the document being incorporated by reference without the Annex, except A.5.1.5 has the regulatory effect of a regulation.

Discussion

Hannah Billows (CAL FIRE) stated that there is no NFPA 1851 chapter specifically on care. This section specifically references chapters such as selection and inspection, but there is no chapter on care. She asked that the terminology should be consistent with NFPA 1851.

The **Chair** replied that the proposed change to add care is to be consistent with the title of NFPA 1851. NFPA 1851 contains instructions on how to take care of your equipment. Storage is a big component of NFPA 1851, such as proper storage of equipment to keep it away from living quarters. The intent of subsection (a) is to point to NFPA 1851 as the overarching document. The NFPA standard, which is incorporated by reference, is the regulation without the Annex except for A.5.1.5 which is a list of inspection criteria. A.5.1.5 is included to avoid listing the inspection criteria from the Annex to make the proposed language more succinct.

Jeff Knobbe (Alameda County Fire Department) suggested that if the chapters are going to be referenced then they should be referenced exactly as they are listed to prevent misunderstanding. Since there is no chapter for cared for, it is open to for interpretation, because there is no chapter that can be referenced.

The **Chair** asked how the members would like subsection (a) to read to convey the intention that the entire document without the Annex except for A.5.1.5 is incorporated by reference. The Chair believes that it is not necessary to name each chapter of the NFPA 1851 standard, because the entire standard has to be followed.

Jeff Knobbe (Alameda County Fire Department) replied by stating, if protective ensembles shall be selected, then you are referring to Chapter 5, because that has to do with selection. If you are referring to inspected, then you're referring to Chapter 6. The proposal can be correlated to the chapter you are trying to reference. Refer cleaning to Chapter 7. As written, there is no chapter that can refer to "cared for." He stated that he cannot go to Chapters 5, 6, 7 and 8 because he cannot find "cared for" in the document.

Hannah Billows (CAL FIRE) stated that if “cared for” includes cleaning and decontamination then just reference the NFPA chapter to read, “Ensemble shall be selected cleaned and decontaminated inspected stored and maintained in accordance . . .” That way each specific part of that selection has a chapter; cleaning and decontamination is Chapter 7, storage is Chapter 9, so everything has somewhere to refer to on what exactly you want with that requirement.

The **Chair** stated that the proposal can be revised, and she will make note of the suggestion to list chapters of the NFPA standard in subsection (a).

Jerome Hathaway (Oakland Fire Department) stated that NFPA 1851, 3.3.6 has a definition for care. It states, “[c]leaning and storage of protective clothing and equipment.” He directed the Chair to consider the definition of “cared for” in developing revised language.

Proposed deletion of existing subsection (b)

Outcome

To be discussed in the April 2023 meeting.

Discussion

Hannah Billows (CAL FIRE) asked for the reason for the deletion of existing subsection (b), which states “[h]elmets that do not meet the requirements of NFPA 1971 . . . 2007 edition . . . shall be retired 10 years from the date manufacture.” Unless this regulation doesn’t plan to be published within the next 10 years, this removes the exception that was previously left in the first version of the regulations.

The **Chair** responded that after changes to Article 10.1 go into effect, helmets that the non NFPA 1971, 2007 edition, that is older than 10 years from the date of manufacture will be retired and replaced with NFPA approved helmets. In the first version, non NFPA helmets that were already purchased were permitted to remain in service if they were not older than 10 years.

Retirement of NFPA approved helmets are captured in subsection (c)(2) which provides a three year grace period in complying with Chapter 10 of the NFPA.

Later in the meeting, the committee will compare construction helmets vs NFPA 1971 helmets and collectively make a decision if committee members still want to allow the use of construction helmet versus NFPA 1971 helmets.

The purchase quality standard requires that purchases of new helmets be NFPA 1971 compliant. So over time non NFPA helmets (like construction helmets) will be replaced with NFPA approved helmets. Over time, everybody moves towards the NFPA 1971 helmets.

Clarifying Amendments to NFPA 1851, 2020 Edition

Proposed new subsection (c)(1)

The **Chair** asked if there were comments regarding proposed new subsection (c)(1) which states that “the written standard operating procedures as required in Chapter 4 Program subchapter 4.2.2., shall include training requirements for users of protective ensemble, program administration administrators and selected personnel who are involved in the implementation of the NFPA 1851[.]”

Outcome

No change.

Discussion

Hannah Billows (CAL FIRE) commented that the written standard operating procedures are suggestion was to replace that with the written plan as required by title 8 section 3401 (b)(6), which is the requirement to have a written Injury and Illness Prevention Program. She thought that most employers fall under that requirement, and that stays consistent with other regulation language. NFPA refers to it as a standard operating procedure, but typically Cal/OSHA and regulations refer to them as written plans.

The **Chair** replied that the requirement was to be consistent with the NFPA, and that is the reason why the proposal uses the terms that were used in the NFPA standards. *Labor Code section 147.4(a) specifically asked the safety orders to be aligned with NFPA standards.* The use of NFPA terms in article 10.1 is to avoid confusion, because NFPA standards become the fire service’s title 8 regulation. The terms used in the regulation are consistent with the NFPA standards. The term “standard operating procedures” is referred to over and over again in various NFPA standards. It creates a conflict if we deviate from the NFPA standards.

Hannah Billows (CAL FIRE) stated that the proposal just approved by OAL refers to the use of a written plan covering the use, maintenance, utilization and replacement of equipment. It is required in those orders and that is why we were trying to stay consistent with language that is in that regulation specific to firefighting PPE.

The **Chair** replied that Ms. Billows was referring to section 3401(b)(2), which has a proposed note to avoid confusion. That section will be discussed later.

Proposed new subsection (c)(2)

The proposal seeks to clarify:

NFPA 4.2.4.5* Manufacturer-trained organizations shall meet the training requirements in this section and shall be permitted to perform the activities identified in Table 4.2.4 for manufacturer-trained organizations.

The proposal intent is to identify who in the manufacture-trained organization needs to be trained and permitted to do the activities listed in the table.

Outcome

The **Chair** will consider the comments and propose a revision.

Discussion

Hannah Billows (CAL FIRE) commented that as proposed program administrator will be required to receive all training on all the requirements even if they do not perform those activities.

In 4.2.4.5., all it says is manufacturer trained organization and so CAL FIRE's suggestion identifies who in the manufacturer training station needs to be trained and permitted to do the activities listed in that table.

The **Chair** asked Ms. Billows to read their proposed text.

Hannah Billows (CAL FIRE) replied that the proposal would require program administrators to train employees on all of the requirements even if they're not performing those activities and so their suggestion was to revise it to read:

Employees permitted to perform the activities listed in NFPA 1851 Chapter 4 Program, table 4.2.4 shall be trained according to Chapter 4.2.4.5.

Robert Sestito (Sacramento Fire Department) asked CAL FIRE for clarification if CAL FIRE is asking for the program administrator not be trained as the person administering the NFPA 1851 program. He asked if CAL FIRE is asking for the program administrator not to be required to receive training in 1851, but their people administering the program would be trained. He asked if the question is the level of training or who has to be trained.

Hannah Billows (CAL FIRE) replied Table 4.2.4 lists responsibilities for garment element inspection cleaning and repair, which includes sections for advanced inspection, complete liner inspection advanced cleaning, which is typically not performed by the end user employee of some organizations. It is not even performed by the program administrator for that department. It is performed by an outside agency like a verified ISP. As written, the proposal would require program administrators to be trained in these sections, even if they are not performing those duties and do not have any responsibility in those duties.

Robert Sestito (Sacramento Fire Department) rhetorically asked, wouldn't you want your program administrator who is administering the program to have technical knowledge of the operations of that program? It is akin to having an Emergency Medical Services (EMS) program manager who has no training in EMS overseeing an EMS program.

In order for the program administrator to oversee a program, it makes sense to have training on that program. He understood the difficulty of that because of moving positions and the way certain organizations are structured. However, he believes that is what is needed to prove that the person placed as the program administrator is in line to where they have oversight of the program.

He understands the idea of the comment because realistically the person who is doing advance inspections or cleaning and repair is not necessarily going to be your program administrator. If the person administering the program does not have that technical level knowledge, then you could have things that are happening at your program level that the administrator is going to be held responsible for, but they do not have the technical knowledge to make the observation that they are not following the words of the program.

The **Chair** stated the reason for the term "manufacturer trained organization" is because that is what the fire departments are.

NFPA 3.3.64.1 Manufacturer-Trained Organization. A non-verified organization trained by an element manufacturer of the same element type to conduct any one or a combination of advanced cleaning, advanced inspection, and basic repair on the organization's elements.

The table has "x" marks on all of those. The program administrator and selected personnel have to be trained under the manufacturer-train organization, not the ISP section, or the portions of the table.

The **Chair** stated that she agrees with Mr. Sestito that a person who is overseeing the PPE program should have knowledge of the entire program and how it should run.

Jeremy Lawson (CAL FIRE) stated he is not saying that the program administrator should have zero knowledge of the program. In a smaller organization, somebody may be intimately involved in selection and care and their PPE working group, etc., throughout their organization, even at the firefighter rank. This is not necessarily the case for an organization the size of CAL FIRE. Therefore, to say that an administrator needs to have that kind of ground level prior knowledge to administer a program does not seem to be in the best interest of a management style. This is a management style, and for anybody who is a manager of any program—whether talking about PPE or anything else in the fire service—employee safety is always the number one thing.

The goal of any manager is to make sure that they are doing things appropriately. If they do not have the subject matter expertise, then they are surrounding themselves with the people that do whether that be an outside vendor or internal folks within their organization. He does not think a regulation should be requiring somebody at a managerial level, perhaps a chief officer rank, to go sit down and learn the intricacies of fabric design for people.

The **Chair** replied that the person who is doing the administering of this program is the manager for the PPE. The proposal does not prescribe a certain ranking. Whoever the organization assigned as the manager for the PPE is the one that is required to have an understanding of the entire NFPA 1851 program, the cleaning, the inspection, the routine inspection and how they interrelate, what is required of the ISP. The administrator who oversees the contract with the ISP also needs to know what is required of the ISP, what kind of certification an ISP needs, what is the ISP's cleaning efficiency, review the ISP's test results. The program administrator oversees the PPE management. A high ranking person could assign somebody that is appropriate for that particular job.

Jeremy Lawson (Cal-Fire) stated he does not disagree that somebody needs to understand what it is that they are doing if they have this responsibility, but we are taking the spectrum from very large organizations that are represented on this call and in this meeting to those that are very small. That gamut does not fall within what we are asking for right here right now. There are many checks and balances. We have a PPE ISP vendor represented in the room right here. They have a fiduciary and legal responsibility to meet the requirements that they are held under and so to have a situation where it falls on the administrator of one of these programs to ensure that an ISP is meeting their requirements. They should have a very well working understanding of what it is that they are supposed to do. However, there are many checks and balances, and he does not see how this single one does anything to make sure that something is either done or not done. Whether you are doing things in-house, portions of things in-house or things completely through vendors. He thinks it is a slippery slope if we try and create something or approve something that does not give the organization the ability—with their structure and their size and within their organization—to be able to make these procedures work.

Jeff Knobbe (Alameda County Fire Department) stated that he respectfully disagrees because the management construction or the size of the agency should not dictate what a program administrator should be trained to do, whether the organization is comprised of only one fire station or 75 or 125 stations. It should not matter. There will have to be adjustments made within organizations to meet the standard. Just like Robert Sestito said, whoever is overseeing the program is responsible as a program administrator. Program administrators need to know what they are doing so they can see what their people are doing correctly, regardless of the size of the organization.

Jerome Hathaway (Oakland Fire Department) stated that he does not see any problems with CAL FIRE's statements; both are fine with him. Those are the same things. The program administrator is an employee. The liability is on the department to ensure that whomever they put up there is qualified. The departments are going to own that liability. Lastly, departments should not be micromanaged. Members should trust that they are going to be able to satisfy the requirements, especially when it comes to liability and legal issues in the state of California.

The **Chair** redirected and stated that depending on the type of entity, the table identifies the type of training or responsibilities for garment element inspection cleaning and repair.

Proposed new subsections (d) and (d)(1)

This is a requirement to provide the employees with manufacturers' instruction within 10 business days upon request. The 10-day timeline was discussed in the June meeting.

Outcome

No comments.

Proposed new subsections (e) and (e)(1)

This is a requirement to notify the manufacturer within 20 days upon discovery. The 20 days was discussed during the June meeting.

Outcome

The Chair will consult with the Board's attorney regarding the use of the term "organization" vs "employer."

Discussion

Hannah Billows (CAL FIRE) commented that the term "organization" should be replaced by the term "employer." NFPA references organizations, but regulations are geared towards employers.

Jeff. Knobbe (Alameda County Fire) stated that in the entire NFPA 1851 document it references organization a massive amount of times. Changing that one word changes what that definition means. The Chair will have to do massive changes to change "organization" to "employer." There is an understanding of what an organization is, and that is the fire department which by default is the employer.

The **Chair** replied, this is only affecting 4.6.1 because we are calling out 4.6.1. The Chair suggested the employer (organization), if that makes it clearer for people.

Jeff Knobbe (Alameda County Fire Department) stated that the effect of amending “organization” to “employer (organization)” is that definition from that paragraph out of NFPA. Changing that particular word—there are a lot of times that “organization” is referenced in the NFPA document as a whole. Changing that one in one paragraph sets precedence to change them all. So you have a clear definition of who's who?

NFPA 3.3.64 defines organization as the entity that provides the direct management and supervision of the emergency services personnel.

The **Chair** stated that given that NFPA standards are incorporated by reference, she changed the text back to organization.

Jeremy Lawson (CAL FIRE) stated that is important that we need to remember that we are not adopting an NFPA standard through this process. The NFPA standard is being used as a reference document to create regulation for Cal/OSHA. In his opinion, he thinks that if the terms are not current terms that are already in regulation related to all employees in California regardless of whether they are fire service or construction, then it may not make any sense. He said in his job, he spends a tremendous amount of time dealing with OSHA citations, perhaps more than others just based on the size of CAL FIRE. The term employer is found throughout and so he thinks that through this process we need to take what is an NFPA reference document and turn it into wording and a regulation that is consistent with everything else that Cal/OSHA has regarding employee safety.

The **Chair** placed a note to provide clarifying language to examine employer vs organization. The Board has a staff attorney to consult. Title 8 are regulations apply to employers.

Title 1, California Code of Regulations

Section 20. Incorporation By Reference

(e) Where a regulation which incorporates a document by reference is approved by OAL and filed with the Secretary of State, the document so incorporated shall be deemed to be a regulation subject to all provisions of the APA.

Jeremy Lawson (CAL FIRE) stated that he understands the context and why his group in large part is going to decide with the NFPA terminology versus the Cal/OSHA terminology, because this NFPA document is what the people on this committee are familiar with. This group is not familiar with by and large the regulations of Cal/OSHA and the terms that we use. That is why that is one area that he has a different perspective. He stated he is probably less familiar with NFPA documents than he is with Cal/OSHA regulations, and so that is where his comments coming from.

Jerome Hathaway (Oakland Fire Department) asked if employers include volunteer organizations as well.

The **Chair** replied, yes volunteer firefighters are considered as employees. She does not know exactly the name of the ruling, but volunteer firefighters are employees. There is an employer-employee relationship there.

Subsection (f)

The proposal names A.5.1.5 instead of listing what is on A.5.1.5. If there is value in listing everything, the proposal can be amended.

Hannah Billows (CAL FIRE) asked why the proposal is specifically in this section referring to the annex instead of just referring to Chapter 5 section 5.1 which talks about the risk assessment and what that should include.

The **Chair** replied that the annex has explanatory materials in it regarding that specific named sections. The committee felt that those criteria listed in annex A.5.1.5 were important to be part of the regulatory requirement because most of the annex is not going to be part of the regulation—only this particular portion.

Hanna Billows (CAL FIRE) stated that the annex requires essentially a separate risk assessment for each individual garment and does not consider the ensemble as a whole, so it considers each individual element and how that works. How the hood works, how the helmet works but does not include how those work together as an ensemble.

The **Chair** replied that the criteria in the annex does not negate the previous requirements for compatibility and all other criteria. These are just criteria that need to be considered. The person in the organization who is doing the selecting has to consider all the criteria.

Jeff Knobbe (Alameda County Fire Department) stated there is no system level testing for how a hood interacts with a jacket, how a helmet interacts with the hood and a jacket. There is no system-level testing. There are recommendations in 1971 and 1970 to have those in the future. But you would have to do a risk assessment on each individual ensemble element to make sure that you are meeting the 1971 or 1851 standards.

Subsection (g)

This subsection was intended to establish guidelines for soiling. NFPA Chapter 6.1.3 states that the organization shall establish guidelines.

Outcome

No guidelines were established.

Discussion

The **Chair** stated she thought about this but believes that the committee may not be able to move forward and resolve the issue that would define the level of soiling that would warrant advance cleaning. She believes the requirement for advance cleaning every six months or twice a year and gross decontamination may mitigate the issue of soiling. Maybe it is not necessary to be very specific in requiring what guidelines the employer or organization shall establish with regards to soiling.

Personal protective equipment is expensive. The soiling of the equipment affects its performance, the total heat loss, the breathability of the garment. If it is soiled and does not get cleaned, then it is not going to perform how it was intended to perform. Departments spend a lot of time doing the risk assessment figuring out what your TPP and THL are to specify. If it is not washed when it is heavily soiled, that does not make any sense. The Chair thinks that is going to be up to the program administrator to determine what kind of guidelines they want to set.

The problem is we do not know what kind of guidelines are going to be set by departments. That may be a clarity issue, but unless the review process deems it a problem, the proposal will not address this. The Chair does not believe that the committee will reach a consensus on this issue. NFPA requires gross decontamination, advanced cleaning twice a year and cleaning after active fire response depending on the situation.

The **Chair** asked members of the committee if subsection (g) should be deleted or specify some kind of guidelines regarding soiling because employees would need to know these guidelines to decide if it is soiled enough to warrant washing.

If you wash dirty rags, the water gets really dirty and it is hard to get it clean if they are heavily soiled. If the garment is really soiled, then it may affect all the other garments in that machine. Hopefully with the twice a year requirement, the ensembles would not get heavily soiled. Since the Chair is not a firefighter, she is seeking comments from members regarding soiling.

Robert Sestito (Sacramento Fire Department) stated that his understanding is soiling and contamination are outlined within NFPA 1851. He asked if the Chair was asking the committee if they do not want to put that NFPA wording in subsection (g) or further define it.

The **Chair** replied that the committee is not going to further clarify NFPA text, which states that guidelines must be established by the employer for soiling. The NFPA standard states that the employers are required to establish guidelines for soiling. However, when she asked this committee for these guidelines, nobody provided them. When is something soiled badly enough that needs to go to the wash?

Robert Sestito (Sac Metro Fire Department) stated that, obviously each department is going to establish their own guidelines. However, he thinks that will lead to a slippery slope when we get into enforcing it. Realistically, it would behoove a department to

make it as lenient as possible. Therefore, from an enforcement aspect, you would have as much leeway.

The issue is probably not the idea of where this document should be. The idea of the document is to move the fire department and the fire service in California closer to where the nation or other states address occupational safety and cancer issues. He understands the difficult aspect of it, but realistically the job of this group and the job of organizations are to protect their employees. If the committee does not define that, then we are just going to leave it open to interpretation. Most likely it is going to be interpreted on a lenient side and therefore give wiggle room moving forward.

Jeff Knobbe (Alameda County Fire Department) stated soiling is the accumulation of sweat, dust, dirt debris and other nonhazardous material on or in an ensemble or ensemble element that could degrade performance or cause hygiene issues.

The **Chair** replied that the problem is there is no objective criteria to say that this is soiled enough, that there's enough buildup in this that this needs a wash.

Jeff Knobbe (Alameda County Fire Department) replied that is correct but said definitions are from NFPA 1851 Chapter 3. In Chapter 7, it states ensemble and ensemble elements that are soiled or contaminated shall receive advanced cleaning.

Hannah Billows (CAL FIRE) stated subsection (g) is referring to 6.1.3, which says that the organization shall establish guidelines for its members to follow to determine if that element is soiled to an extent that cleaning is necessary. So while Chapter 7 says advanced cleaning shall be performed as needed, she asks when is that needed and is that something that is written into regulation—or is that something that they as employers write into their standard operating procedures.

The **Chair** replied right now, we will just leave it up to the individual departments to determine that. However, the Chair asked to hear from the other fire departments if they object to that.

TKO noted that there are 20 participants online at this time and there were no hands raised.

The **Chair** stated if the fire service decides to get together and create guidelines that they can agree upon, it can be part of the proposal. The Chair thinks that the committee finds it difficult to agree on how soiled is soiled to where it needs to be washed.

Jeff Knobbe (Alameda County Fire Department) referred to inspections NFPA 6.3.5.1. Item number one is inspection for soiling. If a department puts their own definition, then there will be multiple definitions of what soiling is. Therefore, if the organization is doing their own in-house inspections, the garment should be cleaned because it's soiled.

The **Chair** stated that entire NFPA document is incorporated by reference, so the definition of soiled under NFPA 1851 does not change. What we are saying is we cannot be more specific in determining how soiled is soiled that it requires cleaning. The Chair cannot determine that unilaterally. Therefore, instead of us amending NFPA 1851 to state the criteria for soiling, we are leaving it up to the departments to determine their own criteria.

Last time there was somebody that mentioned using a piece of white paper. You rubbed it on the clothing. If it comes out dark, then it needs to be washed. So, if a department wants to do that, she guesses that is what is going to be in their guidelines.

Jeff Knobbe (Alameda County Fire Department) added that the rubbing of the clean white paper against an ensemble element is referred to as a soil transfer test.

The **Chair** stated it will be up to the departments to determine how soiled is soiled because ultimately the employers are required to train their employees and establish their guidelines. Employers are required to tell their employees something regarding soiling, that this item is soiled bad enough that it needs a wash. The Chair does not know how the departments are going to accomplish this. The employers are required to set guidelines per NFPA standard, so that they can tell their employees when it is dirty enough that it requires cleaning.

Maybe the next time the NFPA 1851 committee meets, it could provide more clarity on that and hopefully it will be in the next cycle that gets incorporated when the NFPA standard has more information. For now, there is no objective criteria to tell a person when an item needs to be washed due to soiling.

The primary concern from soiling is the buildup of sweat and dirt and debris, and really it starts affecting the performance of your garment. If you have a dirty soiled ensemble, the more contaminants will probably stick to it. The Chair believes that the best way to handle that is probably training employees on the importance of cleaning and maybe on their own they would decide. She thinks maybe we just give the firefighter personal responsibility to judge for themselves, and maybe for coworkers to remind their coworkers when they are looking a little grungy. Hopefully the culture is changing that clean PPE is the way to go and dirty PPE is synonymous to getting sick. The Chair hopes that the culture is changing towards that kind of mentality.

Subsection (h)

The proposal clarifies how soon preliminary exposure reduction and advance cleaning has to occur.

Outcome

No comments.

§ 3401. Application

Subsection (b)(2)

Subsection (b)(2) was just a relocation from existing subsection (b)(6) for reorganization.

Outcome

No comments.

Subsection (b)(2)(A)

Subsection (b)(2)(A) requires coordination to ensure compatibility for the full body protection that is afforded by the ensemble. The requirement was relocated from 3407(b), which was under body protection. The requirement should apply to the entire ensemble element, so we put it into the general section.

This means whoever is selecting the PPE should consider the ~~garment~~ *ensemble* in its entirety to ensure that it is compatible. The interface, jackets and pants cannot be mixed and matched unless the employer or organization has deemed it to be compatible with the same properties the same overlap requirements.

Outcome

No comments.

New subsection (b)(2)(B)

Protective ensemble shall be properly sized and fitted to the user.

Outcome

No comments.

New subsection (b)(2)(C)

Employers shall designate areas for cleaning their protective ensembles.

Outcome

No comments.

Subsection (b)(3)(A)

Protective ensembles shall be maintained in a location of readiness for immediate response to fires and like emergencies were relocated from 3403(a) but should apply to the entire ensemble.

New subsection (b)(6)(A)

Employers shall provide training on bonding and nothing of protective ensembles to minimize exposure to contaminants.

Outcome

No comments.

New subsection (b)(8)

If the employer purchases personal protective equipment containing perfluoroalkyl and perfluoroalkyl substances (PFAS), the employer shall retain a copy of written notice provided by the seller or manufacturer for three years from the date of the transaction. The written notice would indicate that the personal protective equipment contains PFAS chemicals and the reason PFAS chemicals were added to the equipment. The requirement is from the Health and Safety Code that just recently passed. The employer shall provide a copy of the written notice to the firefighter using the personal protective equipment upon issuance.

Outcome

No changes to the proposal.

Discussion

Hannah Billows (CAL FIRE) asked a question why the requirement is being written into a different regulation when it is required under the Health and Safety Code. She asked, is it not enough to just reference the Health and Safety Code or does it need to be in there?

The **Chair** replied that the requirement relates to the employees' right to know. General Industry, section 5194 (Hazard Communication) covers this, but instead of putting it in that section, the Chair believes that it is better placed in this article because it only applies to turn out gear of the firefighters.

Cal/OSHA does not enforce the Labor Code or the Health and Safety Code. Cal/OSHA enforces title 8 regulations. Under each title 8 section, there is a Note with authority cited. Sections in Article 10.1 typically cite Labor Code 142.3, which gives the Board authority. For this subsection it will be the Health and Safety Code. Another example is steel erection regulations listed in both the regulation and Labor Code.

Tim Vanderlip (LA County Fire Department) asked a question regarding the use of the term “employer” is everyone okay with the use of “interim employer.” The committee already talked about it: should the term be “organization,” or did he misunderstand the previous comment regarding “employer” versus “organization”?

The **Chair** replied that she was going to defer to the Board’s attorney for guidance.

Section 3403. Protective Ensembles for Structural and Proximity Firefighters

In version one, the individual sections for each element were kept. In version two, the proposal consolidates the individual elements into one section.

New subsection (a)

The edition of the document incorporated by reference was updated to the 2013 edition, not the 2018 edition. The reason that it is 2013 edition and not 2018 is subsection (a) is for in-service PPE. PPE that is manufactured in 2017 could still be manufactured under the 2013 edition. Add 10 years to 2017, and theoretically an element could be in service until 2027.

Outcome

No change.

New subsections (b) and (b)(1)

Subsection (b) is redundant because of subsection (a), but the reason for that language related to Hannah Billows’s prior comment regarding firefighting helmets. The Chair wanted input from stakeholders to decide if they are going to completely disallow construction helmets. She also asked if the committee agrees with the consolidation.

TKO stated that there were no comments online.

Outcome

To be discussed during the April 2023 meeting.

Discussion

Hannah Billows (CAL FIRE) asked if the language from subsection (b)(1) was relevant in light of subsection (a).

The **Chair** replied that it was a placeholder if members disagreed with the consolidation in subsection (a). Subsection (b) is displayed in case members want to continue the use of construction helmets, because of what was already purchased. The attendees of the 2015 and 2016 advisory committees knew about the upcoming requirement to purchase

the NFPA 1971 and NFPA 1977 helmets, not the construction helmets. The idea was to retire those construction helmets and move towards the NFPA 1971 helmets.

The **Chair** compared criteria for helmets that met the ANSI standard vs NFPA 1971 standard, and the biggest difference was the thermal protection criteria. The NFPA 1971 helmets are rated for higher temperatures.

The **Chair** is of the opinion that firefighters need better thermal protection. The Chair displayed side by side comparisons.

NFPA 1971, 2013 edition

8.3 Flame Resistance Test 2.

8.3.5 Procedure A.

8.3.5.1 The helmet shall be positioned on the ISO size J headform specified in Figure 8.16.4.1 according to the HPI.

8.3.5.2 The flame of the Bunsen burner shall be adjusted to produce a 50 mm ± 1.5 mm (2 in. ± 1/16 in.) blue flame with an inner cone of 25 mm ± 1.5 mm (1 in. ± 1/16 in.). The temperature of the flame at the tip of the inner cone shall be measured with a K-type thermocouple and shall be 1200°C ± 100°C (2192°F ± 180°F).

ANSI Z89.1-2014

10. Test Methods

10.1 Flammability

10.1.3 Calibration

Use a temperature measurement device to verify the temperature of the Bunsen burner flame. With the Bunsen burner in a vertical position, adjust it to produce a 50 mm (2.0 in.) blue flame with an inner cone of 25 mm (1.0 in.). Using the temperature probe, measure the temperature of the flame at the tip of the inner cone. It shall be 800 – 900°C (1472 – 1652°F).

The impact testing is practically the same. The electrical testing is practically the same or close enough. *Correction, they are not the same as displayed in the side-by-side and the NFPA standard has more details on how the testing is done.*

Jeremy Lawson (Cal-Fire) commented that the Chair was only discussing design. He said that there are other differences between what would make something an NFPA helmet versus not an NFPA helmet.

He directed the Chair to the standard that there is a list of specific components that have to be purchased with the helmet to get that sticker that does not have anything to do with the construction of the actual helmet. CAL FIRE already submitted some public comments to the NFPA 1971 committee to make some changes specifically with ear covers goggles, etc., which are items that when you purchase a helmet from a vendor those items have to come with the helmet to make it an NFPA compliant helmet. He stated that you cannot buy a helmet without goggles, ear straps or flaps and still have all the retention system within it and have it get an NFPA sticker.

He thinks that is one of the reasons—or could be a reason why—what the Chair is calling a good construction helmet or the need for a helmet that is “not NFPA compliant” is only because of the way the individual agency went about purchasing the components for that helmet. So that is one thing that they as an organization are working to fix and remedy through that NFPA committee.

CAL FIRE already reached out to the NFPA committee chair, and they are in total agreement with our perspective on that. However, that is hamstringing us a little bit in California right now. He said he is sure that, based on the folks that we have in this room and on this call, our organizations are large enough where we don't need to buy a pair of goggles every time we purchase a helmet. We may just need the helmet. We are spending money unnecessarily to meet an NFPA rule to get a sticker inside of a helmet just because we must buy all of these components at one time. If the agency does not need another pair of goggles, we just wasted money on a pair of goggles we do not need.

The **Chair** asked Jeremy Lawson for the contact information for the NFPA chair, so that the Chair can speak to the NFPA chair about helmets and its components.

Redirecting, helmets have to be designed a certain way and pass certain tests. What the Chair displayed on the side by side relates to the performance of the helmet. The main difference between them is temperature on the flame resistance test. NFPA provides more thermal protection than the construction helmets.

The Chair tabled subsection (b)(1) based on Chief Lawson's comment. It is possible that we can develop language specifically on helmets. The rest of the elements would comply with subsection (a).

The proposal would flow better if it was consolidated as being required to meet NFPA 1971.

Jeff Knobbe (Alameda Fire County Department) stated that you can get the exact same helmet from a manufacturer without goggles, but it will not come with an NFPA compliant sticker.

The only way to order that helmet with the sticker is to get it with NFPA approved goggles or ear flaps. That shows that the element has met the minimum standard. It

would not melt, drip or droop under the subjected heat of the testing temperatures. The fear is that if you allow a department to purchase helmets without goggles there is someone in a department who would go to Home Depot and buy a pair of goggles that will literally melt at 200 degrees and put them on that helmet. He did not even know about construction helmets. If they need to buy a helmet, they need to buy it with goggles to get the sticker.

Joe Buchmeier (CAL FIRE) added that when they buy a helmet with the goggles to meet that NFPA—to get that NFPA sticker—the goggles are going out of service before the helmet does normally by being scratched up, burned or destroyed, and then we replaced the goggles with the same set of goggles. It is really no different than purchasing a helmet shell by itself and purchasing a box of NFPA approved goggles and putting them together at a warehouse. So we are changing some of those components so it does not make a lot of sense that we have to purchase them all together.

Jeff Knobbe (Alameda County Fire Dept) the requirement for NFPA 1971 only requires you to buy the helmet with the goggles. There is a provision that allows the end user or the department to remove those goggles as long as the end user has the goggles or a set of eye protections on their person for immediate deployment. He does not know anyone that would wear a pair of goggles in any condition, especially in Immediately Dangerous to Life and Health (IDLH), and then put them on their face with all the contaminants that have gotten on there from the last 6, 5, 10, 25 fires. Goggles are not required to be left in place together with the helmet. You just have to have eye protection on your person to be able to be deployed.

The **Chair** stated that she believes that Mr. Lawson's comment was if his goggles get scratched up then you need new parent goggles. They do not want to buy another helmet with goggles. They just want to buy a new set of goggles.

Jeff Knobbe (Alameda County Fire Department) replied yes, can you buy new goggles separately that are NFPA 1971 certified.

Hannah Billows (CAL FIRE) responded to Mr. Knobbe regarding helmets coming with eye protection. CAL FIRE is not requesting to change the requirement that employees are provided with eye and face protection that meets NFPA because that is already covered in section (a). It is just not having to buy that helmet that comes with that eye protection.

The **Chair** stated that she will try to get more clarity on this issue. She will speak with the NFPA chair regarding this helmet issue and report to the committee the next time there is a meeting.

New subsection (c)(1)

The subsection regarding eye and face protection was relocated from subsection (b)(1).

Outcome

No comments.

Existing (b)(2)

Subsection (b)(2) regarding eye protection was deleted because of the new subsection(a), which consolidated the requirements for ensemble elements.

Outcome

No comments.

New subsection (c)(2)

Subsection (c)(2) was relocated from subsection (b)(3) due to renumbering.

Outcome

No comments.

New subsection (c)(3)

Subsection (b)(4) was relocated from subsection (b)(4) due to renumbering.

Outcome

No comments.

New Subsection (d)

Subsection (d) regarding ear and neck protection and protective hood interface was relocated from section 3404(a).

Outcome

No comments.

New subsection (e)

Subsection (e) regarding body protection was relocated from 3405(a).

Outcome

No comments.

New subsection (f)

Subsection (f) regarding hand and wrist protection was relocated from section 3406(a).

Outcome

No comments.

Subsection (g)

Subsection (g) regarding foot protection was relocated from section 3407(a).

Outcome

No comments.

Sections 3408 and 3409

Cal/OSHA is working on the updates to the personal alert safety system and respiratory protection. Cal/OSHA may use the sections numbers that we are repealing or reserving.

Outcome

No comments.

PFAS Presentation

The proposal talked about earlier, section 3401(b)(8), contains a right-to-know provision about the chemicals that are in firefighting gear. The chemical PFAS is related to cleaning of garments and the proper storage of garments.

What is PFAS?

Per and fluoroalkyl substances, often referred to as PFAS, have been used in industry and consumer products since the 1940s. These are forever chemicals that are widely used. It is in cosmetics, food packaging, firefighting foam, carpets and military coatings. Perfluorooctanoic acid (PFOA) and perfluorooctane sulfonic acid (PFOS) were widely used and were replaced by other types of PFAS.

PFAS breaks down slowly and can build up in people, animals and the environment. How slow is slow? The serum half-life of perfluorohexa sulfonic acid is 5.3 years, meaning it takes 5.3 years for that half of that stuff that was originally in your blood to leave your system. The serum half-life for PFOS is 3.4 years; serum half-life for PFOA is 2.7 years. The chemical bioaccumulates if you are continually exposed. It takes a while for it to break down, and that is a health hazard.

PFAS is associated with cardiovascular disease, immune suppression, kidney disease and endocrine disruption. International Agency for Research on Cancer (IARC) classified PFOA as a possible human carcinogen for kidney and testicular cancer.

California has a biomonitoring program, and they have been monitoring this chemical, not just for firefighters, but there are monitoring projects from different population groups.

- Asian/Pacific Islander Community (ACE) monitoring of PFAS in the Asian population in San Francisco
- Biomonitoring Exposure Study (BEST) people in central California
- Firefighters (FOX) Project
- California Teachers Study (CTS) big pool of participants

PFAS is in everybody now, my blood, your blood. It is a global problem.

Firefighter Occupational Exposure (FOX) Project

In 2010 -2011, 101 firefighters from Southern California just happen to be getting their physical check-up and researchers took their blood samples and created a study. The study compared the PFAS blood levels of firefighters with the National Health and Nutrition Examination Survey (NHANES) group, which is a representative survey of the population in the United States.

Dobraca D, Israel L, McNeel S, Voss R, Wang M, Gajek R, Park JS, Harwani S, Barley F, She J, Das R. Biomonitoring in California firefighters: metals and perfluorinated chemicals. *J Occup Environ Med.* 2015 Jan;57(1):88-97. doi: 10.1097/JOM.0000000000000307. PMID: 25563545; PMCID: PMC4274322

The conclusion of the study was perfluorodecanoic acid concentration was three times higher in the firefighter group than the NHANES adult males. Firefighters may have unidentified sources of occupational exposure to fluorinated chemicals.

National Health and Nutrition Examination Survey is a major program of the National Center for Health Statistics (NCHS). NCHS is part of the Centers for Disease Control and Prevention (CDC) and has the responsibility for producing vital and health statistics for the Nation. The survey includes 5,000 people. For this study, they selected from a group with the criteria of males over the age of 20 to correlate with the fire department.

Showed Table 4

For this type of PFAS, it was three times higher in firefighters compared to the general public. For the other PFAS, firefighter's blood levels were on par with the general population. It was not that notable. It is interesting to see the prevalence rate of these chemicals in the firefighters. Detection frequency (DF) percent means how frequently do they detect these chemicals in the blood. For perfluoroheptanoic acid, the DF percent for firefighters was 75.2 percent compared to 16.3 percent from the NHANES group. The study is just a reading of blood levels; it does not study the source of the exposure.

It was interesting to note, when the results from that FOX project report PFOS to the monitoring different subpopulations like for the Asian community and central California for the teachers, the firefighter's blood levels were twice that of Californians that have been tested.

The information regarding PFAS adds to the importance of the NFPA 1851, 2020 edition, properly so that we reduce exposures to the firefighters.

- Proper storage of turnouts (not in living quarters)
NFPA 1851 (2020), Section 4.5.2, 9.1.6
- Transporting gear in a sealed container or bag
NFPA 1851 (2020), Section 9.1.5
- Wear turnouts only when needed
- After firefighting activities: remove gear, change to clean clothes and shower
- Professionally cleaning of turnout gear was associated with lower levels of perfluorononanoic acid (PFNA) and PFOA
- Reduce PFAS in drinking water by using point of use filtration system. Cal/OSHA does not have jurisdiction over drinking water. The Environmental Protection Agency (EPA) has jurisdiction over drinking water. California has started testing the drinking water for PFAS.

The EPA issued an advisory level for it. The idea is to consider lowering the overall exposure from anywhere you may get exposed to PFAS. It is not just from your gear it is also from drinking water. California has a Geo Tracker app. It is a map. You type in the chemical, such as PFAS, and then click on it to get the sampling results of the water.

If a fire station is near a military installation where they have PFAS contamination of drinking water consider installing a water filtering system if the levels as shown by the Geo Tracker are too high in that area.

Our legislature is working hard to try to control PFAS or better manage it. The Chair is of the opinion that the chemical is overused, but there are definitely applications where this chemical is needed. PFAS is widespread, and the bills below have passed and were signed by the governor.

Senate Bill 1044 (2020)

- An act to add Section 13029 (PPE), 13061 and 13062 (Firefighting Foam) to the Health and Safety Code, relating to fire protection.

- Approved by Governor September 29, 2020. Filed with Secretary of State September 29, 2020.

Assembly Bill 1817 (2022)

- Product safety: textile articles: perfluoroalkyl substance (PFAS)
- An act to add Chapter 13.5 (commencing with section 108970) to Part 3 of Division 104 of the Health and Safety Code, relating to public health.
- Approved by Governor September 29, 2022. Filed with Secretary of State September 29, 2022.

Assembly Bill 2771

- Cosmetic products: safety
- An act to add sections 108981, 108981.5, and 108982 to the Health and Safety Code, relating to public health.
- Approved by Governor September 29, 2022. Filed with Secretary of State September 29, 2022.

The alternative that the industry is trying to do is to shorten chain for these types of chemicals, but the problem with that is the chemicals are then more mobile, so the pollution spreads faster. The shorter chain supposedly breaks down faster in the body. But if a person is constantly getting exposed to it, even if it has a shorter half-life, that person is still getting exposed.

4. Closing Remarks

At the next meeting, the advisory committee will talk about wildland firefighting in addition to recapping what was already discussed including the helmet issue. The Chair will speak with the NFPA chair and report back to the committee. The Chair will send everyone links related to the information regarding PFAS. The next meeting will be in April 2023.