



**Jeffrey O. and Grace G. Stull**

PPE Update

## **Firefighter PPE rule change in the works**

**The NFPA 1851 committee is opening the rule for revision; here's what we want to see change, and how you can make your voice heard**

Dec 19, 2016

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Properly cleaning fire service clothing is moving more and more to the forefront of issues facing fire departments trying to provide their members appropriate levels of health and safety.

**We have frequently written** how clothing should be clean and the lack of consistent industry practices for how firefighters clean and decontaminate turnout clothing. These practices certainly need to be defined in as much detail as possible.

However, the industry is moving toward a decision point in the next year when it will begin to revise **NFPA 1851, Standard on Selection, Care, and Maintenance of Protective Ensembles for Structural Fire Fighting and Proximity Fire Fighting**, which is expected to renew in 2018.

NFPA 1851 is the standard for all matters pertaining to how fire departments and firefighters choose, clean, inspect, store and retire their PPE including coats, pants, helmets, gloves, footwear and hoods. The standard has been the center of controversy in several respects, most notably the mandatory requirement for retiring ensemble elements 10 years after the date of manufacture.

That particular subject has embroiled an ongoing debate over keeping helmets and raised questions for either the legitimacy or justification of the 10-year rule. The current focus of the standard has mainly shifted to cleaning given the appropriately placed concerns about the persistence of contamination on clothing leading to serious health issues.

These matters are timely because the technical committee responsible for NFPA 1851 is beginning its process for revising the standard. That process starts with identifying problems and gaps in the existing edition and determining what changes can be implemented to correct those shortcomings.

A pivotal point is arising since the standard is also open for public input until Jan. 5, 2017 for submitting any proposed changes to the standard. This is an opportunity for the fire service to voice its views on NFPA 1851.

## **WHAT'S BROKEN**

NFPA 1851 was first produced in 2001 at a time when the fire service was just starting to realize that they needed to clean their clothing regularly. Contamination was a concern, but mainly from the standpoint of it contributing to lower insulation or creating flammability in the field.

A number of specific practices were established for how to care for and maintain clothing but, given its newness, implementing mandatory requirements were somewhat tempered. For example, the three types of cleaning were specified: routine, advanced and specialized.

Routine cleaning was to be done by the firefighter or the fire department as clothing became soiled and performed in a way that kept PPE in service. Routine cleaning requirements were based on handwashing gear because many departments simply lacked access to washer/extractor machines or the resources to send their gear out to cleaning companies.

Advanced cleaning is a machine-based cleaning process to be done by those who are clearly trained to be more diligent in how the cleaning is performed. Originally, advanced cleaning was specified for twice a year. In the latest edition, it is specified in a minimum of once a year but it is also required whenever gear is soiled.

Soiling is defined as the accumulation of substances that could degrade the performance of gear, but excludes hazardous materials or body fluids. Specialized cleaning was relegated to removing either hazardous materials or body fluids.

The problem is that this scheme does not properly address removing contamination. It is true that gear can be worn and simply be subjected to ordinary soils such as dirt and sweat. However, any exposure to smoke will create potential harmful contamination whether hazardous materials are present or not, which they are at nearly all fires.

## **WHAT'S CLEAN?**

While NFPA 1851 defines contamination, decontamination and disinfection, it never addresses how cleaning removes contamination whether it be chemical or biological in nature.

The process of cleaning as predicated on removing soiling is clearly defined to be devoid of eliminating chemicals or body fluids — or any other forms of hazardous contamination.

In addition, the standard does a poor job of describing procedures for cleaning at the fire scene as part of a process of gross decontamination. Fire departments now recognize the need for some form of gross decontamination after any working fire.

These practices create challenges since many departments are not set up to carry out any preliminary cleaning in difficult ambient conditions such as freezing temperatures.

NFPA 1851 truly needs to be updated. **We have indicated** work by the **Fire Protection Research Foundation**, which is engaged in developing methods to validate whether cleaning works for removing a variety of contaminants and in creating a process to verify fire gear cleaning agents, machines and processes.

This is certainly a step in the right direction and will go a long way toward creating confidence that cleaning does the job it is intended to accomplish. Nevertheless, the entire chapter on cleaning needs an overhaul.

Paramount among this significant change is to introduce the concept that contamination is present almost all the time. Structural fires are also hazardous material incidents; that philosophy and properly reacting to it must be instilled in the revised NFPA 1851 standard.

The revamped cleaning requirements, although having provided a good foundation for appropriate hygiene, do not go far enough to promote improved health and wellness for firefighters.

## **GET INVOLVED**

We and various members of the committee and industry would like to see a reorganization for how the cleaning process is carried out for fire clothing. Many more details are needed, beginning with the initial assessment of the gear condition following the event and what exposures have occurred that then dictate the type of cleaning process appropriate for the situation.

The committee hopes to develop a simple decision tree that allows departments, depending on their available resources, to carry out appropriate cleaning processes.

The standard must recognize that more frequent gear cleaning will be taking place. While it is certainly appropriate to advocate an advanced style of cleaning every year, requirements for cleaning clothing after any significant exposure to persistent contamination should be more clearly communicated.

Moreover, the committee must dig in and address the other items of clothing and equipment that are not usually adequately cleaned such as helmets, hoods, gloves and footwear. These items can still create significant unwarranted exposure to persistent contaminants.

While NFPA 1851 is a voluntary standard, more and more fire departments attempt to comply with its requirements. In Texas, nearly all provisions of NFPA 1851 are mandatory for career fire departments.

The standard has long-reaching consequences on fire department operations regarding its PPE. As such, it is very important for the committee to hear from the fire service and other interested individuals on what they would like to see the standard address or what problems they see with the current standard that should also be rectified.

The process of providing public inputs is one way for voicing concerns or promoting changes to the standard. Unfortunately, is not always easy and intuitive to submit public input directly to NFPA despite the existence of a relatively robust, [online electronic submission procedure](#).

However, we will gladly help anyone who needs assistance with this process, no matter what the issue might be. Simply contact us through this forum and we will give you our advice on how to undertake the public input process.


## About the author

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Jeffrey and Grace Stull are president and vice president, respectively, of International Personnel Protection, Inc. They are members of several NFPA committees on PPE as well as the ASTM International committee on protective clothing. Mr. Stull was formerly the convener for international work groups on heat/thermal protection and hazardous materials PPE as well as the lead U.S. delegate for International Standards Organization Technical Committee 94/Subcommittees on Protective Clothing and Firefighter PPE. They participate in the Interagency Board for Equipment Standardization and Interoperability and have authored the book, "[PPE Made Easy](#)." Send questions or feedback to the Stulls via [email](#).

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