First Revision No. 27-NFPA 801-2022 [Global Input] [Change instances of 'glove box' to 'glovebox' and 'glove boxes' to 'gloveboxes'.] 3.3.22* Glove BoxGlovebox. A sealed enclosure in which items inside the box are handled exclusively using long gloves sealed to ports in the walls of the enclosure. 7.1.6 Hot Cells, Caves, Hoods, and Glove Boxes Gloveboxes. 7.1.6.1 Hot cells, caves, hoods, and glove boxes gloveboxes shall be provided with fire detection unless the fire hazards analysis in Section 4.3 dictates otherwise. 7.1.6.3* Fire suppression shall be provided in hot cells, caves, hoods, and glove boxes gloveboxes unless the fire hazards analysis in Section 4.3 dictates otherwise. 7.1.6.5* Glove Boxes Gloveboxes and Glove BoxGlovebox Features. 7.1.6.5.1 The glove boxesgloveboxes and glove boxglovebox windows shall be of noncombustible construction. 7.1.6.5.8 If fixed extinguishing systems are utilized, the effects of system discharge on the integrity of the glove boxglovebox integrity shall be considered in evaluating the design of the system. 7.1.6.5.9* A means shall be provided to restrict the passage of flame between glove boxes gloveboxes that are connected. 7.4.2 Laboratory enclosures shall comply with the requirements for hot cells, glove boxes gloveboxes, and hoods unless the fire hazards analysis in Section 4.3 dictates otherwise. A.3.3.22 Glove BoxGlovebox. The operator places his or her hands and forearms into the gloves from the room outside of the box in order to maintain physical separation from the glove boxglovebox environment. This allows enables the operator to retain the ability to manipulate items inside the box with relative freedom while viewing the operation through a window. A.3.3.23 Hood. The airflow is typically from the least contaminated area to the more contaminated area. Hoods are sometimes referred to as sashhoods when used as a means of

introducing materials or items to a hood or glove boxglovebox.

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11/22/2022, 9:19 AM

A.7.1.3.3

Enclosed spaces refers to any enclosure within a building, including glove boxes gloveboxes, hot cells, caves, plenums, and so forth.

A.7.1.6.5

The external radiation hazard present during fabrication of uranium 235 fuel elements is of a low order. Uranium 233 and plutonium 239 present severe inhalation hazards to personnel; therefore, an enclosed protection system should be required. These systems are called glove boxesgloveboxes. They <u>Gloveboxes</u> can be extensive, with an appreciable amount of glass, and can present unique fire protection problems. Under normal conditions, substantial protection can be provided against the existing radiation hazard. On the other hand, if a criticality incident should occur, the type and quantity of radiation emitted can create grave hazards to personnel. Even a small fire within a glove boxglovebox can produce serious consequences if not controlled properly. Fire control systems and procedures for glove boxesgloveboxes should be carefully developed and implemented before the boxes are used. Generally, such protective systems are custom-designed for the specific application.

A.7.1.4.5.3

Securing of the gloves outside the box positions them such that fixed fire suppression in the room can be more effective and the gloves do not contribute to the fuel loading in the glove boxglovebox or provide a source of ignition to other fuels in the glove boxglovebox. Positioning them outside also reduces the potential for gloves contributing to contribute to fires inside the glove boxglovebox.

A.7.1.4.5.4

Gloves should be removed if work has been completed and no additional work requiring access to the <u>glove boxglovebox</u> through the use of the specific gloves is identified, the <u>glove boxglovebox</u> will not remain in service, or fire hazards remaining in the <u>glove boxglovebox</u> dictate that the gloves be removed. Gloves should not be removed strictly because immediate or short term use is unnecessary. Unnecessary removal of gloves creates unnecessary generation of radioactive wastes as well as potential exposures to radioactive materials during change-out activities.

A.7.1.4.5.7

Fire suppression should be considered in addition to fixed inerting systems to address potential concerns during glove boxglovebox maintenance or failure of inerting systems.

Supplemental Information

File Name

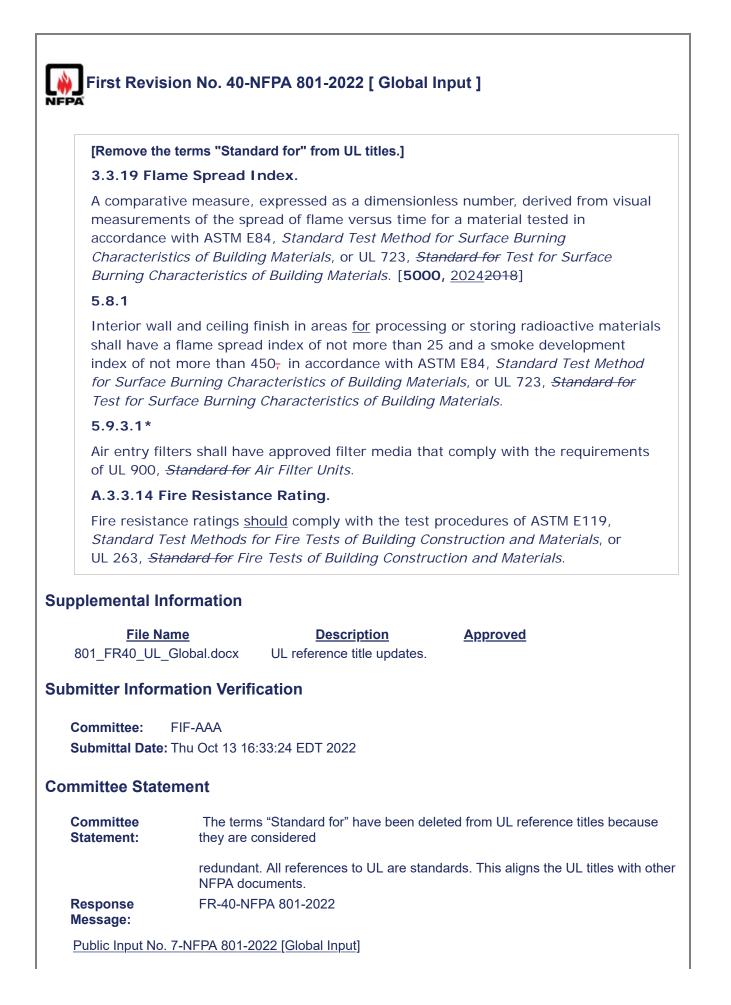
801_FR27_glovebox_Global.docx

Description Update 'glove box' to 'glovebox' and 'glove boxes' to 'gloveboxes'. **Approved**

Submitter Information Verification

Committee: FIF-AAA

Submittal Date	Submittal Date: Wed Sep 28 13:27:30 EDT 2022			
Committee Statement				
Committee Statement:	The American Glovebox Society, DOE-STD-1066-2016, and Factory Mutual Data Sheet 7-61 all use "glovebox" as one word. This will ensure that this term in NFPA 801 is consistent with the industry.			
Response Message:	FR-27-NFPA 801-2022			



[Revision	s and additions to existing	Chapter 7. See attached Word document.]	
upplemental	Information		
801_FR41_0	<u>File Name</u> Chapter_7_Global.docx	Description Revisions and additions to existing Chapter 7	<u>Approve</u>
801_Global_ 41_Ch_7_rev	FR- visions_for_ballot.pdf	for ballot	
ubmitter Info	ormation Verification		
Committee: Submittal Da	FIF-AAA Ite: Thu Oct 13 16:38:12 EDT	2022	
ommittee St	atement		
Committee Statement:	These revisions provide the user with clarification with the expansion of Chapter 7 requirements in regards to applications of the fire hazards analysis and appropriate applications of both fire detection and fire suppression requirements for specific facilities, processes, and special hazards.		
Response Message:	FR-41-NFPA 801-2022		

7.1.3.4*

FlammableIn enclosed spaces in which flammable and combustible liquids in enclosed spaces in which vapors have the potential tocould accumulate outside of the storage vessels, piping, and utilization equipment shall be installed with combustible-vapor analyzers designed for the vapors generated unless the fire hazards analysis in Section 4.3 dictates otherwise.

7.1.3.9*

The production, storage, transfer, and use of hydrogen shall be done in accordance with NFPA 2 and NFPA 55.

A.7.1.3.9

NFPA 804 contains additional information pertaining to hydrogen systems.

7.1.5 Special Materials.

7.1.5.1

Combustible metals shall be stored and handled in accordance with NFPA 484.

7.1.5.2*

Operating controls and limits for the handling of pyrophoric materials shall be established to the satisfaction of the AHJ.

<u>7.1.5.3</u>

Pyrophoric material shall be stored and handled in an inert atmosphere.

7.1.5.4

A supply of an appropriate extinguishing medium shall be available in all areas where fines and cuttings of pyrophoric materials are present.

7.1.5.5

Solid and liquid oxidizing agents shall be stored and handled in accordance with NFPA 400.

7.1.6.5* Glove Boxes and Glove Box Features.

7.1.6.5.1

The glove boxes and glove box windows shall be of noncombustible construction.

7.1.6.5.2

The number of glovebox windows shall be limited to that required to provide acceptable visibility to ensure safe operations, cleanup, and maintenance activities can be performed.

7.1.6.5.3

Where combustible shielding is necessary for the radiation hazard, fire protection features shall be installed to compensate for the additional combustible loading unless the fire hazards analysis in Section 4.3 dictates otherwise.

7.1.6.5.4*

When the gloves are not being used, they shall be withdrawn and secured outside the box if fire hazards are present inside the box.

7.1.6.5.5*

When the gloves are no longer needed for operations, they shall be removed.

7.1.6.5.5.1

<u>Where gloves have been removed</u>, and noncombustible glove port covers shall be installed if fire hazards are present inside the box.

7.1.6.5.5.2

The glove port covers shall be held in place by a latch or other device constructed of noncombustible material suitable for the application.

7.1.6.5.6

Doors shall remain closed when not in use.

7.1.6.5.7

The concentration of combustibles shall be limited to the quantity necessary to perform the immediate task.

<u>7.1.6.5.8</u>

Radioactive contaminated combustible waste shall not be stored or allowed to accumulate in gloveboxes.

<u>7.1.6.5.9</u>

<u>Gloveboxes used for handling the materials described in 7.1.5 shall be evaluated and comply with the fire hazards analysis in Section 4.3.</u>

7.1.6.5.10*

Fixed inerting systems shall not be utilized in lieu of a fire suppression system.

7.1.6.5.11

If fixed extinguishing systems are utilized, the effects of system discharge on glove box integrity shall be considered in evaluating the design of the system.

7.1.6.5.12*

A means shall be provided to restrict the passage of flame between glove boxes that are connected.

7.1.8* Special Facilities.

Special facilities shall comply with the requirements of 7.1.8 unless the fire hazards analysis in Section 4.3 dictates otherwise.

<u>A.7.1.8</u>

Special facilities have unique characteristics that require the evaluation of the engineering and administrative controls via the fire hazards analysis.

7.1.8.1* Control Room Complex.

<u>A.7.1.8.1</u>

<u>NFPA 804 contains additional information pertaining to the control room complex, which</u> includes the kitchen area, office spaces, etc.

<u>7.1.8.1.1</u>

Automatic fire suppression systems shall be provided for the control room complex.

7.1.8.1.2

The control room complex shall be provided with fire detection.

7.1.8.1.3

The control room complex shall be isolated from areas of use by a fire barrier with a minimum 3-hour fire resistance rating.

7.1.8.2* Cable Concentrations.

A.7.1.8.2

NFPA 804 contains additional information pertaining to cable concentrations (cable spreading rooms, cable tunnels, and cable shafts and risers).

7.1.8.2.1

Automatic fire suppression systems shall be provided for cable spreading rooms, cable tunnels, and cable shafts and risers.

<u>7.1.8.2.2</u>

<u>Cable spreading rooms, cable tunnels, and cable shafts and risers shall be provided with fire detection.</u>

7.1.8.3 Plant Computer and Communications Rooms.

<u>7.1.8.3.1</u>

Automatic fire suppression systems shall be provided for plant computer and communications rooms.

<u>7.1.8.3.2</u>

Plant computer and communications rooms shall be provided with fire detection.

7.1.8.4 Switchgear and Relay Rooms.

<u>7.1.8.4.1</u>

Switchgear and relay rooms shall be provided with fire detection.

<u>7.1.8.4.2</u>

Automatic fire suppression systems shall be provided for switchgear and relay rooms.

7.1.8.5* Battery Rooms.

<u>A.7.1.8.5</u>

NFPA 804 contains additional information pertaining to battery rooms.

<u>7.1.8.5.1</u>

Battery rooms shall be protected as required by NFPA 855.

<u>7.1.8.5.2</u>

Automatic fire suppression systems shall be provided for battery rooms.

<u>7.1.8.5.3</u>

Battery rooms shall be provided with fire detection.

<u>7.1.8.5.4</u>

Battery rooms shall be isolated from areas of use by a fire barrier with a minimum 1-hour fire resistance rating.

7.1.8.6 Hydraulic Control Systems.

7.1.8.6.1*

Large hydraulic oil systems shall be isolated from areas of use by a fire barrier with a minimum 1-hour fire resistance rating.

A.7.1.8.6.1

Large hydraulic oil systems are typically considered to have an aggregate capacity greater than 3785 L (1000 gal) per fire area.

7.1.8.6.2*

The hydraulic control system shall use a listed fire-resistant fluid.

A.7.1.8.6.2

For hydraulic control systems above 379 L (100 gal) not using a listed fire-resistant fluid, see FM Data Sheet 7-32 and 7-98 for additional guidance.

7.1.8.7* Emergency and Standby Generators.

<u>A.7.1.8.7</u>

NFPA 804 contains additional information pertaining to emergency and standby generators.

<u>7.1.8.7.1</u>

The installation and operation of emergency and standby generators shall be in accordance with NFPA 37 or NFPA 110.

<u>7.1.8.7.2</u>

Automatic fire suppression systems shall be provided for emergency and standby generators.

<u>7.1.8.7.3</u>

Emergency and standby generators shall be provided with fire detection.

7.1.8.8* Diesel Fuel Storage and Transfer Areas. (Reserved)

<u>A.7.1.8.8</u>

NFPA 804 contains additional information pertaining to diesel fuel storage and transfer areas.

<u>7.1.8.9*</u>

Spent-fuel pool areas shall be provided with fire detection.

<u>A.7.1.8.9</u>

NFPA 804 contains additional information pertaining to spent-fuel pool areas.

<u>7.1.8.10*</u>

Fire barriers, fire detection, and automatic fire suppression shall be provided for radioactive waste and decontamination areas.

<u>A.7.1.8.10</u>

NFPA 804 contains additional information pertaining to radioactive waste and decontamination areas.

7.1.8.11

Record storage areas shall be located and protected in accordance with NFPA 232.

7.1.8.12*

Cooling towers shall be of noncombustible or limited-combustible construction.

A.7.1.8.12

NFPA 214 contains additional information pertaining to cooling towers.

7.1.8.13

Fire pumps shall meet the requirements of NFPA 20.

7.1.8.13.1

Fire pumps shall be automatic starting.

7.1.8.14*

Protection from exposures for transformers shall be provided.

A.7.1.8.14

NFPA 804, NFPA 850, and FM Data Sheet 5-4 contain additional information pertaining to transformers. Transformer protection methods could include fire barriers, adequate spatial separation, fire detection, or automatic fire suppression.

7.1.8.15*

Auxiliary boilers, their fuel-burning systems, their combustion product removal systems, and their related control equipment shall be installed and operated in accordance with NFPA 85.

A.7.1.8.15

NFPA 804 contains additional information pertaining to auxiliary boilers.

7.2* Hospitals.

7.2.1

Automatic fire suppression systems shall be provided for areas where radioactive materials are stored or used in hospitals unless the fire hazards analysis in Section 4.3 dictates otherwise.

7.2.2 [A.7.2.4-move]

Precautions shall be taken, as required, if the radioactive materials are stored or used in ways that cause them to be more susceptible to release from their containers.

7.2.2

Areas where radioactive materials are stored or used in hospitals shall be provided with fire detection unless the fire hazards analysis in Section 4.3 dictates otherwise.

7.2.3*

Hot labs shall be isolated from areas of use by a fire barrier with a minimum 1-hour fire resistance rating unless the fire hazards analysis in Section 4.3 dictates otherwise.

A.7.2.3

Hot labs are rooms in nuclear medicine hospitals that have been specially designed to deliver, store, and prepare radioactive materials required for diagnostic imaging and radiotherapy. Types of Gamma emitters that could be stored in hot labs are Technetium-99, Iodine-131, β-alanine, Gallium-67, and Indium-111. Typically, the administration of radioactive material to patients is done via syringe, but capsules could also be administered.

7.2.4*

Where combustible shielding is necessary for the radiation hazard, fire protection features shall be installed to compensate for the additional combustible loading unless the fire hazards analysis in Section 4.3 dictates otherwise.

A.7.2.4

Precautions shallshould be taken, as required, if the radioactive materials are stored or used in ways that cause them to be more susceptible to release from their containers.

7.3 Uranium Enrichment, Fuel Fabrication, and Fuel Reprocessing Facilities.

7.3.1* General.

Special hazards related to protection from fire <u>in uranium enrichment</u>, <u>fuel fabrication</u>, <u>and</u> <u>fuel reprocessing facilities</u> shall be controlled by a defense-in-depth strategy that utilizes a combination of the following:<u>meets the applicable requirements of Section 7.1 or any other</u> <u>methods acceptable to the AHJ</u>.

- (1) Location and separation
- (2) Safe operating procedures
- (3) Fixed detection and suppression systems
- (4) Inerting
- (5) Any other methods acceptable to the AHJ

A.7.3.1

Based on the fire hazard analysis, the defense-in-depth strategy should use at least one of the following:

- (1) Location and separation
- (2) Safe operating procedures
- (3) Fixed detection and suppression systems
- (4) Inerting

7.3.2

Uranium enrichment, fuel fabrication, and fuel reprocessing facilities shall meet the applicable requirements of 7.1.8.

7.3.3

Automatic fire suppression systems shall be provided for uranium enrichment, fuel fabrication, and fuel reprocessing facilities unless the fire hazards analysis in Section 4.3 dictates otherwise.

7.3.4

Uranium enrichment, fuel fabrication, and fuel reprocessing facilities shall be provided with fire detection unless the fire hazards analysis in Section 4.3 dictates otherwise.

7.5* Research and Production Reactors.

A.7.5

NFPA 804 contains additional information pertaining to the reactor area and its associated processes and equipment.

7.6 Facilities Handling Waste. (Reserved)

7.6.1

Facilities using compact presses shall meet the requirements of 7.1.8.6.

7.6.2*

Automatic fire suppression systems shall be provided for bituminization process areas unless the fire hazards analysis in Section 4.3 dictates otherwise.

A.7.6.2

Bituminization is the process used for the long-term storage of low and intermediate radioactive wastes.

There are some issues related to this process, as asphalt heats up and becomes liquid when mixed with radioactive wastes (which can cause a fire incident during the process) and selfignition of bitumen compounds can occur while the mixed media is stored inside metallic drums.

Whenever feasible, other solutions, such as cementing and vitrification, are preferable for the long-term storage of low and intermediate radioactive wastes.

7.6.3* Treatment.

A.7.6.3

Treatment methods for radioactive waste to reduce its hazards can include oxidation, melting to reduce volume, etc.

7.6.3.1

Furnaces or ovens used for the treatment of radioactive wastes shall comply with the applicable requirements of NFPA 86.

7.6.4 Incinerators.

7.6.4.1

Incinerators used for the treatment of radioactive waste shall be in accordance with NFPA 82.

7.6.5 Storage.

7.6.5.1

Inside storage facilities for radioactive waste shall be of noncombustible construction.

7.6.5.2

Radioactive waste buildings, storage areas, and decontamination areas shall be isolated from areas of use by a fire barrier with a minimum 3-hour fire resistance rating unless the fire hazards analysis in Section 4.3 dictates otherwise.

7.6.5.3

Outside storage facilities for radioactive waste shall be provided with containment and drainage to an approved location.

7.6.5.4

Radioactive waste shall be stored in noncombustible containers when located outside.

7.6.5.5

Radioactive waste stored outside shall be separated from combustible materials as determined by the fire hazards analysis in Section 4.3.

7.7 Accelerators. (Reserved)

7.7.1

Accelerators and support facilities shall meet the applicable requirements of 7.1.8.

7.7.2

Data collection rooms and office areas shall be provided with fire detection unless the fire hazards analysis in Section 4.3 dictates otherwise.

7.8 Process Facilities. (Reserved)

7.8.1*

Special hazards related to protection from fire in process facilities shall be controlled by a defense-in-depth strategy that meets the applicable requirements of Section 7.1 or any other methods acceptable to the AHJ.

A.7.8.1

Based on the fire hazard analysis, the defense-in-depth strategy should use at least one of the following:

- (1) Location and separation
- (2) Safe operating procedures
- (3) Fixed fire detection and fire suppression systems
- (4) Inerting

7.8.2

Process facilities shall meet the applicable requirements of 7.1.8.

7.8.3

Process facilities shall be provided with fire detection unless the fire hazards analysis in Section 4.3 dictates otherwise.

7.8.4

Automatic fire suppression systems shall be provided for process facilities unless the fire hazards analysis in Section 4.3 dictates otherwise.

7.9 Irradiation Facilities. (Reserved)

7.9.1

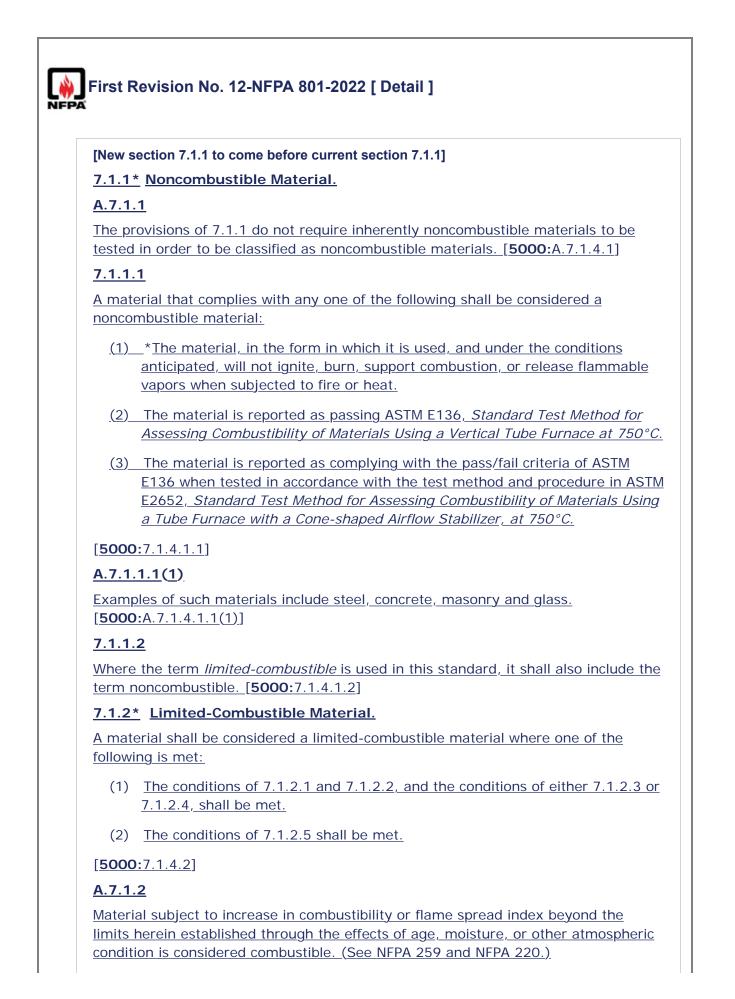
Irradiation facilities shall meet the applicable requirements of 7.1.8.

7.9.2

<u>Irradiation facilities shall be provided with fire detection unless the fire hazards analysis in</u> <u>Section 4.3 dictates otherwise.</u>

7.9.3

Automatic fire suppression systems shall be provided for irradiation facilities unless the fire hazards analysis in Section 4.3 dictates otherwise.



[5000:A.7.1.4.2]

<u>7.1.2.1</u>

The material does not comply with the requirements for a noncombustible material in accordance with 7.1.1. **[5000:**7.1.4.2.1]

7.1.2.2

The material, in the form in which it is used, exhibits a potential heat value not exceeding 8141 kJ/kg (3500 Btu/lb) when tested in accordance with NFPA 259. [5000:7.1.4.2.2]

7.1.2.3

The material shall have a structural base of noncombustible material with a surfacing not exceeding a thickness of 3.2 mm (1/8 in.) where the surfacing exhibits a flame spread index not greater than 50 when tested in accordance with ASTM E84, Standard Test Method for Surface Burning Characteristics of Building Materials, or UL 723, Test for Surface Burning Characteristics of Building Materials. [5000:7.1.4.2.3]

7.1.2.4

The material shall be composed of materials that in the form and thickness used neither exhibit a flame spread index greater than 25 nor exhibit evidence of continued progressive combustion when tested in accordance with ASTM E84 or UL 723 and are of such composition that all surfaces that would be exposed by cutting through the material on any plane would neither exhibit a flame spread index greater than 25 nor exhibit evidence of continued progressive combustion when tested in accordance with ASTM E84 or UL 723. [5000:7.1.4.2.4]

<u>7.1.2.5</u>

Materials shall be considered limited-combustible materials where tested in accordance with ASTM E2965, *Standard Test Method for Determination of Low Levels of Heat Release Rate for Materials and Products Using an Oxygen Consumption Calorimeter*, at an incident heat flux of 75 kW/m² for a 20-minute exposure, and both the following conditions are met:

(1) The peak heat release rate shall not exceed 150 kW/m² for longer than 10 seconds.

(2) The total heat released shall not exceed 8 MJ/m².

[**5000:**7.1.4.2.5]

7.1.2.6

Where the term *limited-combustible* is used in this standard, it shall also include the term *noncombustible*. **[5000:**7.1.4.2.6]

Submitter Information Verification

Committee: FIF-AAA Submittal Date: Tue Sep 27 15:35:18 EDT 2022

Committee Statement

Committee
Statement:This revision extracts the definitions of noncombustible material and limited
combustible material from NFPA 5000 aligning these definitions with other NFPA
documents. See action taken on PI 14 and PI 15.Response
Message:FR-12-NFPA 801-2022
[Section No. A.3.3.26]

Γ

۲۸	dd additional information references to Annex C.2.1.]
-	-
	2.1 NFPA Publications.
	ational Fire Protection Association, 1 Batterymarch Park, Quincy, MA 02169-747
	<u>PA 37, Standard for the Installation and Use of Stationary Combustion Engines</u> and Gas Turbines, 2024 edition.
	PA 68, Standard on explosion protection by deflagration venting, 2023 edition.
	PA 69, Standard on Explosion Prevention Systems, 2024 edition.
NF	FPA 72 [®] , National Fire Alarm and Signaling Code [®] , 2019 edition.
	PA 80A, Recommended Practice for Protection of Buildings from Exterior Fire approximation of the second sec
<u>NF</u>	PA 85, Boiler and Combustion Systems Hazards Code, 2023 edition.
<u>NF</u>	PA 92, Standard for Smoke Control Systems, 2024 edition.
<u>NF</u>	PA 99, Health Care Facilities Code, 2024 edition.
<u>NF</u>	PA 110, Standard for Emergency and Standby Power Systems, 2025 edition.
<u>NF</u>	PA 214, Standard on Water-Cooling Towers, 2021 edition.
NF	PA 252, Standard Methods of Fire Tests of Door Assemblies, 2022 edition.
	PA 259, Standard Test Method for Potential Heat of Building Materials, 2023 lition.
<u>NF</u>	PA 520, Standard on Subterranean Spaces, 2021 edition.
NF	PA 601, Standard for Security Services in Fire Loss Prevention, 2020 edition.
NF	PA 652, Standard on the Fundamentals of Combustible Dust, 2019 edition.
Má	PA 654, Standard for the Prevention of Fire and Dust Explosions from the anufacturing, Processing, and Handling of Combustible Particulate Solids, 2020 lition.
	PA 703, Standard for Fire-Retardant-Treated Wood and Fire-Retardant Coatings r Building Materials, 2024 edition.
	PA 770, Standard on Hybrid (Water and Inert Gas) Fire-Extinguishing Systems, 021 edition.
	PA 855, <i>Standard for the Installation of Stationary Energy Storage Systems</i> , 202 lition.
	<u>FPA 1600[®], Standard on Continuity, Emergency, and Crisis Management, 2019</u> lition.
<u>NF</u>	PA 2010, Standard for Fixed Aerosol Fire-Extinguishing Systems, 2020 edition.

<u>File Na</u> 801_FR22_C_		Description Additional NFPA Information Reference	<u>Approved</u> ces
Submitter Information Verification			
		8 11:38:49 EDT 2022	
Committee Statement:		formational references have been adde ormation that users may otherwise be ι	
Response Message:	FR-22-NF	PA 801-2022	

ΓΑ	dd new informational references to C.2.2 Other Publications.]
-	2.2 Other Publications.
	2.2.1 ASME Publications.
An	<u>merican Society of Mechanical Engineers, Two Park Avenue, New York, NY</u> 1016-5990.
	<u>ME NQA-1, <i>Quality Assurance Program Requirements for Nuclear Facility</i> oplication, 2022.</u>
<u>C.</u>	2.2.2 ASTM Publications.
	GTM International, 100 Barr Harbor Drive, P.O. Box C700, West Conshohocken, PA 1428-2959.
	TM D92, Standard Test Method for Flash and Fire Points by Cleveland Open Cup ester, 2018.
	TM E119, Standard Test Methods for Fire Tests of Building Construction and aterials, 2020.
	<u>STM E136, Standard Test Method for Assessing Combustibility of Materials Using a ertical Tube Furnace at 750°C, 2019.</u>
	STM E2652, Standard Test Method for Assessing Combustibility of Materials Using Tube Furnace with a Cone-Shaped Airflow Stabilizer, at 750°C, 2018.
	TM E2965, Standard Test Method for Determination of Low Levels of Heat Release The for Materials and Products Using an Oxygen Consumption Calorimeter, 2022.
	TM E2690, Standard Practice for Specimen Preparation and Mounting of Caulks and Sealants to Assess Surface Burning Characteristics, 2017.
<u>C.</u>	2.2.3 FM Global Publications.
<u>FN</u>	1 Global, 270 Central Avenue, P.O. Box 7500, Johnston, RI 02919-4949.
<u>FN</u>	1 Data Sheet 1-4, Fire Tests, 2019.
<u>FN</u>	1 Data Sheet 7-61, Facilities Processing Radioactive Materials, 2012.
<u>FN</u>	1 Data Sheet 7-73, Dust Collectors and Collection Systems, 2020.
	<u>1 Data Sheet 7-76, Prevention and Mitigation of Combustible Dust Explosion and re, 2020.</u>
<u>FN</u>	1 Data Sheet 7-78, Industrial Exhaust Systems, 2021.
<u>FN</u>	1 Data Sheet 7-85, Combustible and Reactive Metals, 2022.
C .	2.2.4 FPRF Publications.
Fir	e Protection Research Foundation, 1 Batterymarch Park, Quincy, MA 02169.
	lovebox Fire Protection: A Literature Review," September 2010.

The National Council on Radiation Protection and Measurement has issued a number of reports on specific radiation protection subjects. These reports are available from NCRP, 7910 Woodmont Avenue, Suite 400, Bethesda, MD 20814-3095, or from the U.S. Government Publishing Office, 732 North Capitol Street, NW, Washington, DC 20401-0001. Applicable publications include the following:

NCRP 30, Safe Handling of Radioactive Materials-NBS Handbook 92, 1964.

NCRP 38, Protection Against Neutron Radiation, 1971.

C.2.2.6

Standards of the U.S. Nuclear Regulatory Commission for protection against radiation are published in the Code of Federal Regulations, Part 20, Chapter 1, Title 10, available at most libraries. Revisions are printed in the Federal Register, available at subscribing libraries or by subscription from the U.S. Government Publishing Office.

C.2.2.7

Nuclear Safety, a bimonthly magazine, is available from the U.S. Government Publishing Office. It covers many areas of interest, including general safety, accident analysis, operating experiences, and current events.

C.2.2.8

Specific requirements for facilities handling radioactive materials have been issued by the American Nuclear Insurers, 95 Glastonbury Boulevard, Suite 300, Glastonbury, CT 06033-4453, and the MAERP Reinsurance Association, 1400 Renaissance Dr., Suite 208, Park Ridge, IL 60068.

C.2.2.9 OSHA Publications.

Occupational Safety and Health Administration, 200 Constitution Avenue, NW, Washington, DC 20210.

OSHA 3371-08, Hazard Communication Guidance for Combustible Dusts, 2009.

OSHA Safety and Health Information Bulletin, "Combustible Dust in Industry: Preventing and Mitigating the Effects of Fire and Explosions," 2005.

C.2.2.10 UL Publications.

Underwriters Laboratories Inc., 333 Pfingsten Road, Northbrook, IL 60062-2096.

UL 586, High-Efficiency, Particulate, Air Filter Units, 2009, revised 2022.

<u>UL 2196, Fire Test for Circuit Integrity of Fire-Resistive Power, Instrumentation,</u> <u>Control and Data Cables, 2017, revised 2020.</u>

C.2.2.11 Other Publications.

AGS-G010, Standard of Practice for Glovebox Fire Protection, 2011.

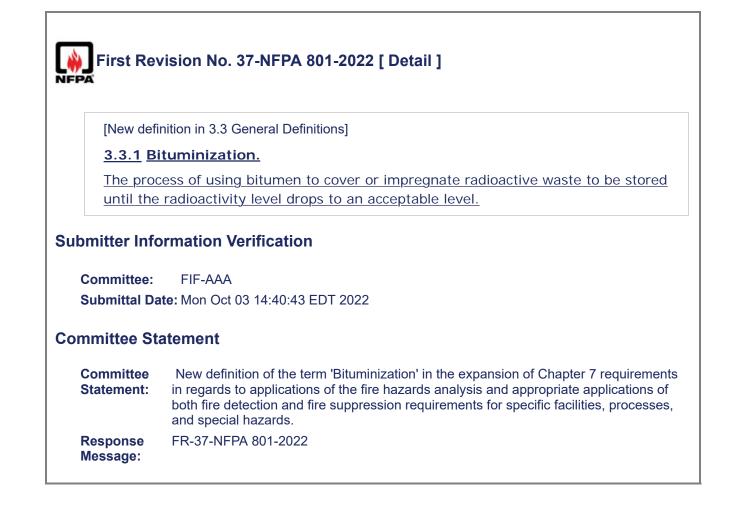
DOE-STD-1066, Fire Protection, 2016.

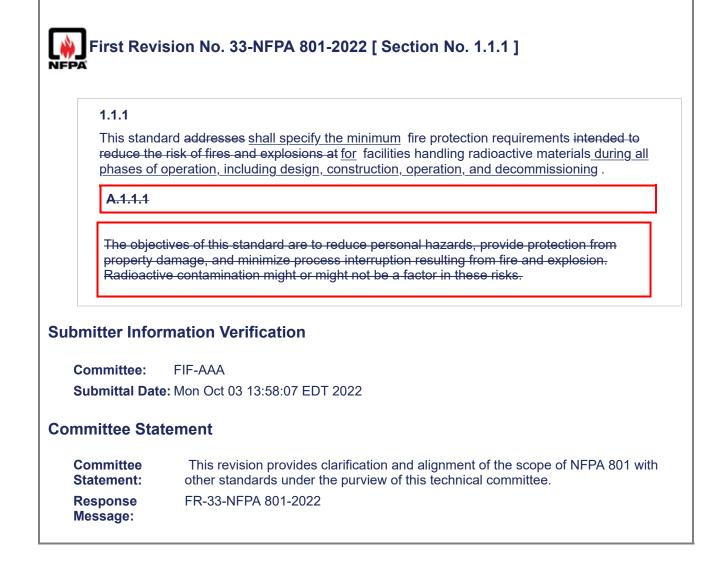
<u>Fire Safety Science, "An Example of the Use of Standard Flammability Criteria for</u> <u>Performance Analysis of Materials: Polycarbonate and PMMA," 2005.</u>

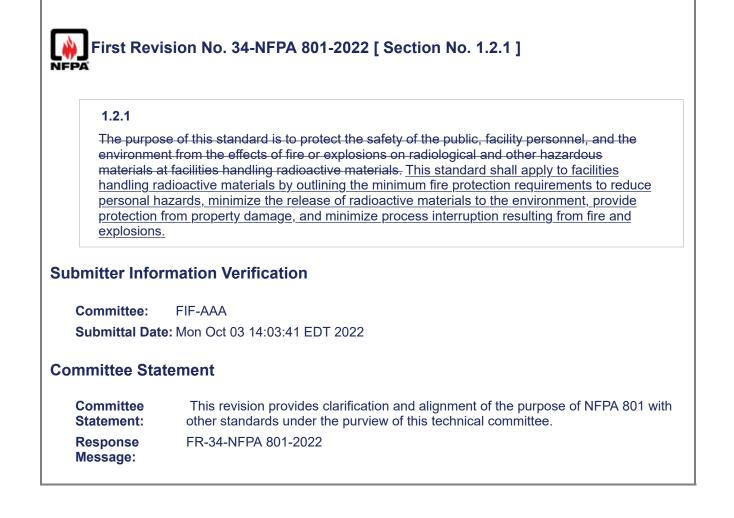
Fire Technology, "Characteristics of Nuclear Facility Waste Bag Fires," 2013.

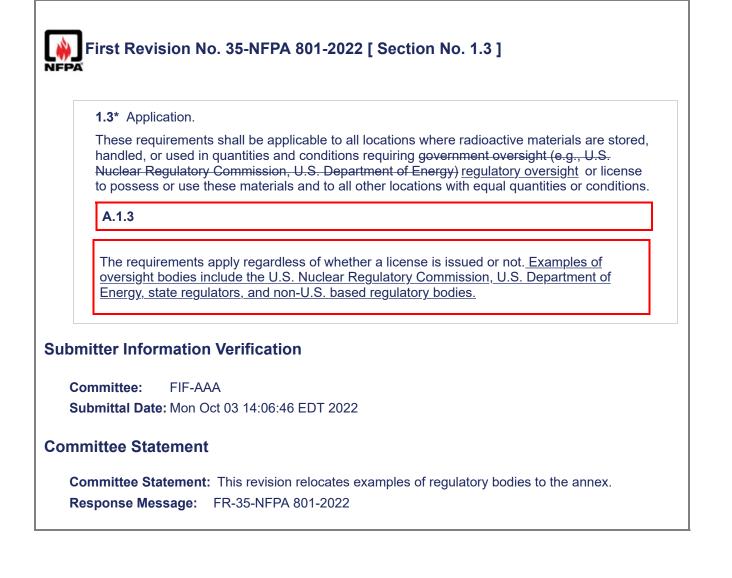
NRC Information Notice No. 92-14, "Uranium Oxide Fires at Fuel Cycle Facilities," 1992.

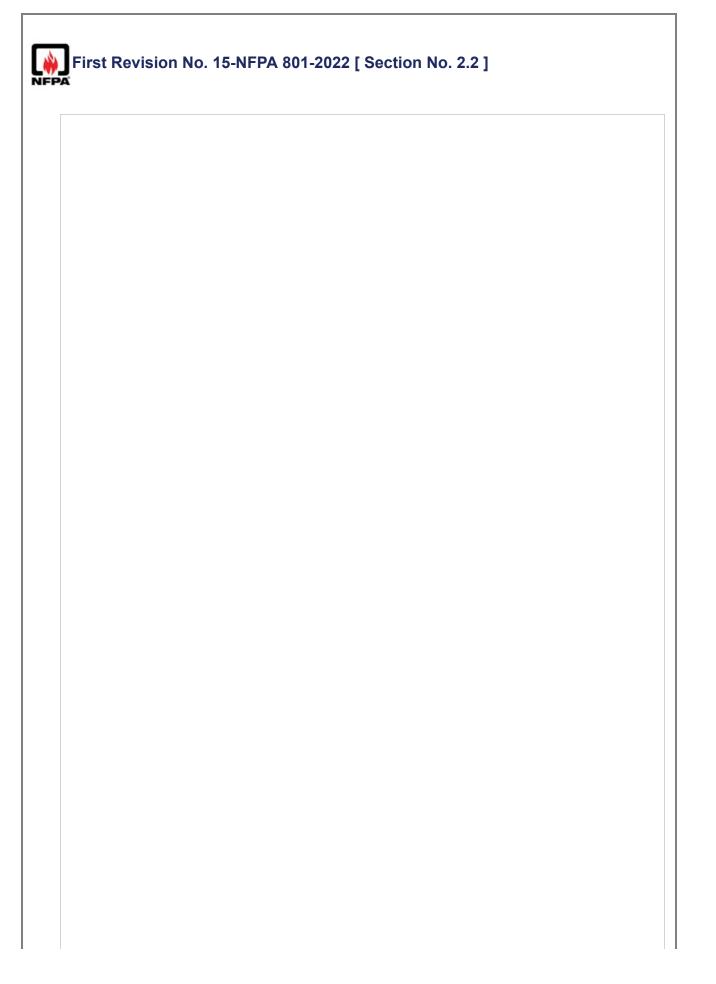
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Committee:	FIF-AAA		
Submittal Date	e: Mon Oct 0	3 14:32:12 EDT 2022	
ommittee Sta	tement		
Committee Statement:		nformational references have been a formation that users may otherwise	added to benefit the user with additional be unaware of.
Response Message:	FR-36-N	FPA 801-2022	









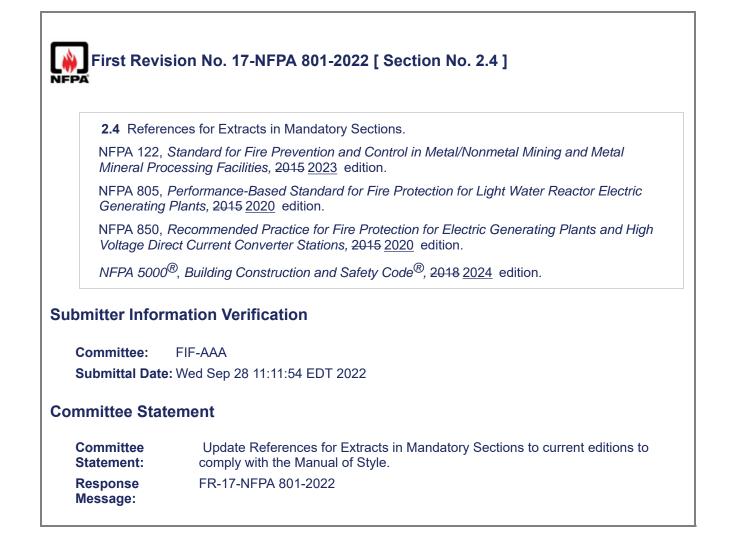


2.2 NFPA Publications.

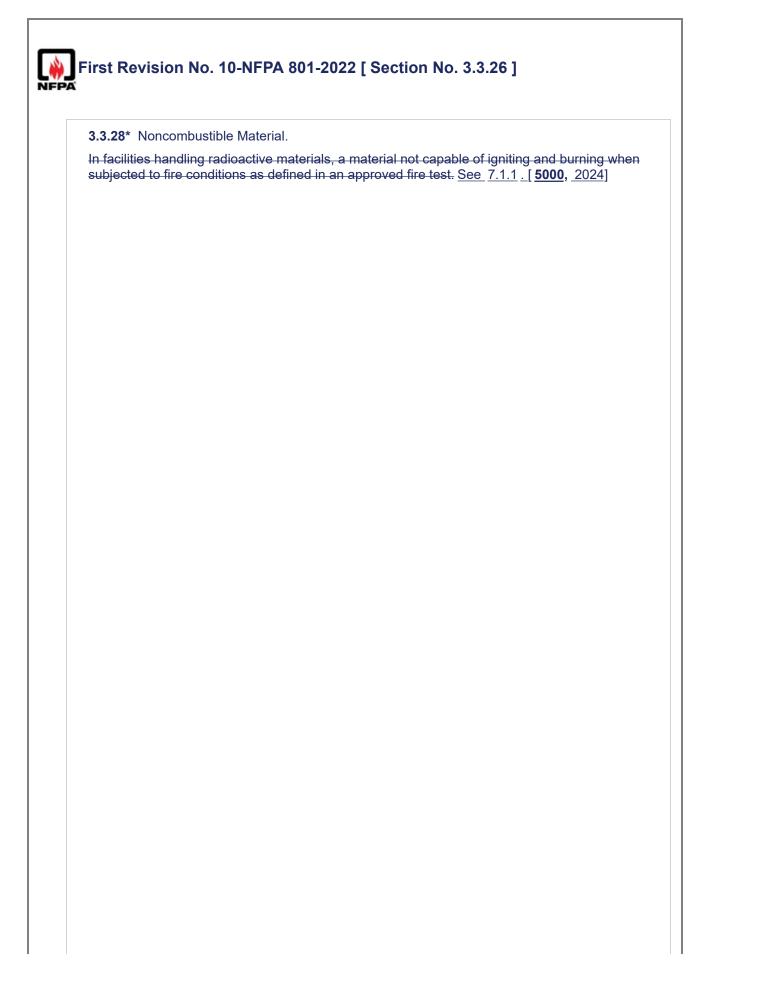
National Fire Protection Association, 1 Batterymarch Park, Quincy, MA 02169-7471. NFPA 2, Hydrogen Technologies Code, 2023 edition. NFPA 10, Standard for Portable Fire Extinguishers, 2018 2022 edition. NFPA 11, Standard for Low-, Medium-, and High-Expansion Foam, 2016 2024 edition. NFPA 12, Standard on Carbon Dioxide Extinguishing Systems, 2018 2022 edition. NFPA 12A, Standard on Halon 1301 Fire Extinguishing Systems, 2018 2022 edition. NFPA 13, Standard for the Installation of Sprinkler Systems, 2019 2025 edition. NFPA 14, Standard for the Installation of Standpipe and Hose Systems, 2019 2023 edition. NFPA 15, Standard for Water Spray Fixed Systems for Fire Protection, 2017 2022 edition. NFPA 16, Standard for the Installation of Foam-Water Sprinkler and Foam-Water Spray Systems, 2019 edition. NFPA 17, Standard for Dry Chemical Extinguishing Systems, 2017 2024 edition. NFPA 17A, Standard for Wet Chemical Extinguishing Systems, 2017 2024 edition. NFPA 20, Standard for the Installation of Stationary Pumps for Fire Protection, 2019 2025 edition. NFPA 22, Standard for Water Tanks for Private Fire Protection, 2018 2023 edition. NFPA 24, Standard for the Installation of Private Fire Service Mains and Their Appurtenances. 2019 2025 edition. NFPA 25, Standard for the Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems, 2017 2023 edition. NFPA 30, Flammable and Combustible Liquids Code, 2018 2024 edition. NFPA 37, Standard for the Installation and Use of Stationary Combustion Engines and Gas Turbines, 2024 edition. NFPA 45, Standard on Fire Protection for Laboratories Using Chemicals, 2019 2023 edition. NFPA 51B, Standard for Fire Prevention During Welding, Cutting, and Other Hot Work, 2019 2024 edition. NFPA 54, National Fuel Gas Code, 2018 2024 edition. NFPA 55, Compressed Gases and Cryogenic Fluids Code, 2016 2023 edition. NFPA 58, Liquefied Petroleum Gas Code, 2017 2023 edition. NFPA 70[®], National Electrical Code[®], 2017 2023 edition. NFPA 72[®], National Fire Alarm and Signaling Code[®], 2019 2025 edition. NFPA 75, Standard for the Fire Protection of Information Technology Equipment, 2017 2024 edition. NFPA 80, Standard for Fire Doors and Other Opening Protectives, 2019 2025 edition. NFPA 82, Standard on Incinerators and Waste and Linen Handling Systems and Equipment, 2019 2024 edition. NFPA 85, Boiler and Combustion Systems Hazards Code, 2023 edition. NFPA 86, Standard for Ovens and Furnaces, 2019 2023 edition. NFPA 90A, Standard for the Installation of Air-Conditioning and Ventilating Systems, 2018 2024 edition. NFPA 90B, Standard for the Installation of Warm Air Heating and Air-Conditioning Systems, 2018 2024 edition. NFPA 91, Standard for Exhaust Systems for Air Conveying of Vapors, Gases, Mists, and

Particulate Solids, 2015 2020 edition.						
NFPA $101^{\mathbb{R}}$, Life Safety Code ^{\mathbb{R}} , 2018 2024 edition.						
NFPA 110, Standard for Emergency and Standby Power Systems, 2025 edition.						
NFPA 115, Standard for Laser Fire Protection, 2016 2020 edition.						
NFPA 204, Standard for Smoke and Heat Venting, 2018 2024 edition.						
NFPA 220, Standard on Types of Building Construction, 2018 2024 edition.						
NFPA 232, Standard for the Protection of Records, 2022 edition.						
NFPA 241, Standard for Safeguarding Construction, Alteration, and Demolition Op 2019 2022 edition.	perations,					
NFPA 253, Standard Method of Test for Critical Radiant Flux of Floor Covering Sy a Radiant Heat Energy Source, 2019 2023 edition.	rstems Using					
NFPA 259, Standard Test Method for Potential Heat of Building Materials, 2023 e	edition.					
NFPA 400, Hazardous Materials Code, 2019 2025 edition.						
NFPA 484, Standard for Combustible Metals, 2019 2022 edition.						
NFPA 600, Standard on Facility Fire Brigades, 2015 2020 edition.						
NFPA 701, Standard Methods of Fire Tests for Flame Propagation of Textiles and 2019 2023 edition.	Films,					
NFPA 750, Standard on Water Mist Fire Protection Systems, 2019 2023 edition.						
NFPA 770, Standard on Hybrid (Water and Inert Gas) Fire-Extinguishing Systems edition.	<u>s, 2021</u>					
NFPA 780, Standard for the Installation of Lightning Protection Systems, 2017 202	23 edition.					
 NFPA 804, Standard for Fire Protection for Advanced Light Water Reactor Electric Generate Plants, 2015 2020 edition. NFPA 805, Performance-Based Standard for Fire Protection for Light Water Reactor Electric Generating Plants, 2015 2020 edition. 						
			NFPA 806, Performance-Based Standard for Fire Protection for Advanced Nuclea Electric Generating Plants Change Process, 2015 2020 edition.	ar Reactor		
NFPA 855, Standard for the Installation of Stationary Energy Storage Systems, 2	023 edition.					
NFPA 1500 [™] , Standard on Fire Department Occupational Safety, Health, and We Program, 2018 <u>2021</u> edition.	ellness					
NFPA 2001, Standard on Clean Agent Fire Extinguishing Systems, 2018 2022 ed	ition.					
Submitter Information Verification						
Committee: FIF-AAA						
Submittal Date: Wed Sep 28 10:53:25 EDT 2022						
Committee Statement						
CommitteeUpdate NFPA reference dates to current edition to comply with theStatement:Style. References added based on action on PI-4 and PI-15.	e Manual of					
Response FR-15-NFPA 801-2022 Message:						
Public Input No. 5-NFPA 801-2022 [Section No. 2.2]						

	2.3 Other Publications.
	2.3.1 ASTM Publications.
	ASTM International, 100 Barr Harbor Drive, P.O. Box C700, West Conshohocken, PA 19428-2959.
	ASTM E84, Standard Test Method for Surface Burning Characteristics of Building Materials, 2016 2022 .
	ASTM E136, Standard Test Method for Assessing Combustibility of Materials Using a Vertical
	<u>Tube Furnace at 750°C, 2019a.</u>
	ASTM E648, Standard Test Method for Critical Radiant Flux of Floor-Covering Systems Using a Radiant Heat Energy Source, 2017 2019ae1.
	ASTM E814, Standard Test Method for Fire Tests of Penetration Firestop Systems, 2013a (2017).
	ASTM E2652, <u>Standard Test Method for Assessing Combustibility of Materials Using a Tube</u> Furnace with a Cone-shaped Airflow Stabilizer, at 750°C , 2018.
	ASTM E2965, <u>Standard Test Method for Determination of Low Levels of Heat Release Rate</u> for Materials and Products Using an Oxygen Consumption Calorimeter, 2022.
	ASTM E2690, <u>Standard Practice for Specimen Preparation and Mounting of Caulks and</u> Sealants to Assess Surface Burning Characteristics, 2017b.
	2.3.2 UL Publications.
	Underwriters Laboratories Inc., 333 Pfingsten Road, Northbrook, IL 60062-2096.
	UL 723, Standard for Test for Surface Burning Characteristics of Building Materials, 2008, revised 2013 2018 .
	UL 900, Standard for Air Filter Units, 2015, revised 2022.
	UL 1479, Fire Tests of Through-Penetration Fire Stops, 2015, revised 2021.
	2.3.3 Other Publications.
	<i>Merriam-Webster's Collegiate Dictionary,</i> 11th edition, Merriam-Webster, Inc., Springfield, MA, 2003 2020.
br	mitter Information Verification
С	committee: FIF-AAA
	Submittal Date: Wed Sep 28 11:10:49 EDT 2022
m	mittee Statement
	Committee Update Other Publications references to current editions to comply with the Mar of Style. References added based on action on PI-1 and PI-16.
	lessage: FR-16-NFPA 801-2022
Р	Public Input No. 8-NFPA 801-2022 [Section No. 2.3.2]
-	-



<u>3.3.26</u> Lir	nited-Combustible Material.
<u>See 7.1.2</u>	. [5000 , _2024]
Committee:	
Submittal Date	FIF-AAA e: Tue Sep 27 15:28:09 EDT 2022
•••••	e: Tue Sep 27 15:28:09 EDT 2022



	A.3.3.28	Noncombustible	Material.
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A material that is reported as complying with the pass/fail criteria of ASTM E136 when tested in accordance with the test method and procedure in ASTM E2652, Standard Test Method for Assessing Combustibility of Materials Using a Tube Furnace with a Coneshaped Airflow Stabilizer, at 750°Degrees C, is considered a noncombustible material. See 7.1.1 for additional information on noncombustible material. [5000, 2024] FM Data Sheet 1-4, Fire Tests, states that UL 94, Tests for Flammability of Plastic Materials for Parts in Devices and Appliances, was designed primarily for testing small plastic parts for use in appliances and other products. UL 94 does not cover plastics used as building materials. The ratings resulting from the UL 94 tests are meant to guide the manufacturer and are not meant to be given to the final consumer as an indication of a hazard. The UL 94 rating should not be accepted in lieu of the other fire ratings specified in the codes. The three terms used to describe the combustibility of materials - noncombustible, limited-combustible, and combustible - are based on specific criteria. When attempting to classify the combustibility of a material, ensure that the criteria for classifying a material based on any of the three terms are thoroughly understood. (See NFPA 220.) Materials that do not comply with the criteria for either noncombustible materials or for limited-combustible materials are considered combustible. Materials that are reported as passing ASTM E136, Standard Test Method for Behavior of Materials in a Vertical Tube Furnace at 750°C, are considered noncombustible materials. The following are the criteria used in NEPA 101 and NEPA 220 for a material to be classified as a limited-combustible material. A limited-combustible material is a material not complying with the definition of noncombustible material that, in the form in which it is used, has a potential heat value not exceeding 8141 kJ/kg (3500 Btu/lb) where tested in accordance with NFPA 259 and complies with (1) or (2): Materials having a structural base of noncombustible material, with a surfacing not exceeding a thickness of 3.2 mm (1/2 in.) that have a flame spread index not greater than 50, when tested in accordance with ASTM E84. Standard Test Method for Surface Burning Characteristics of Building Materials. Materials that, in the form and thickness used, other than described in (1), have neither a flame spread index greater than 25, when tested in accordance with ASTM E84, nor exhibit evidence of continued progressive combustion and are of such composition that surfaces that would be exposed by cutting through the material on any plane would have neither a flame spread index greater than 25 nor exhibit evidence of continued progressive combustion, when tested in accordance with ASTM E84 or UL 723, Standard for Test for Surface Burning Characteristics of Building Materials -Materials subject to increase in combustibility or flame spread index beyond the limits established above through the effects of age, moisture, or other atmospheric condition are considered combustible.

Submitter Information Verification

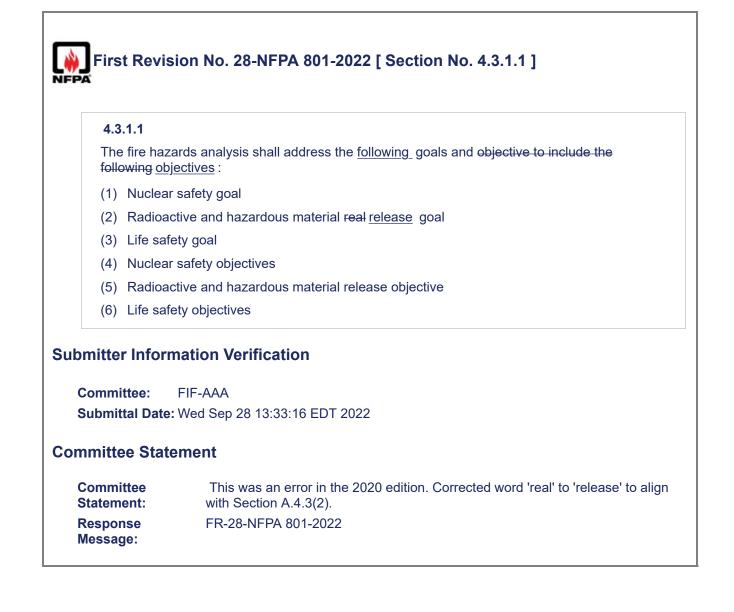
Committee: FIF-AAA Submittal Date: Tue Sep 27 15:13:31 EDT 2022

Committee Statement

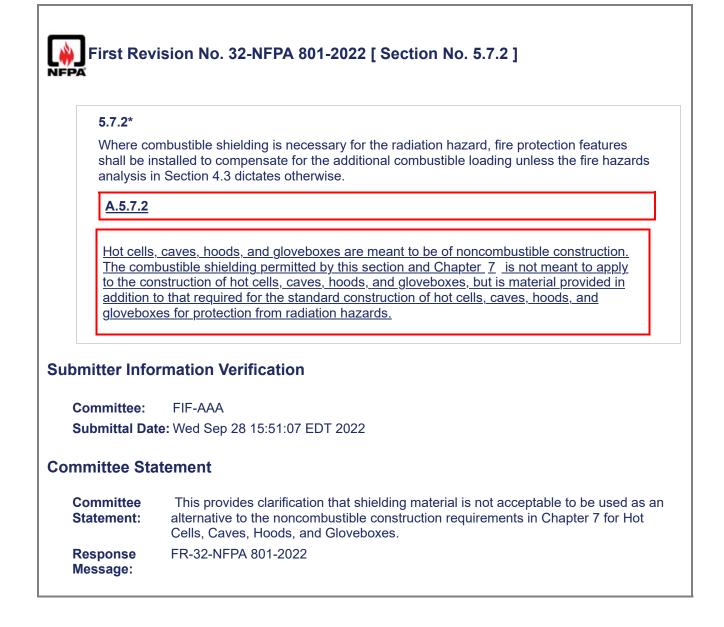
Committee Statement: This revision extracts the definition of noncombustible material from NFPA 5000 aligning this definition with other NFPA documents. Additional annex material has been added and addresses Factory Mutual Data Sheet 1-4, Fire Tests, which discusses how UL 94 has been improperly used by groups other than Underwriters' Laboratories. These tests were designed primarily for testing small plastic parts for use in appliances and other products. The ratings resulting from these tests are meant to guide the manufacturer, and are not meant to be given to the final consumer as an indication of hazard. Building codes do not accept a UL 94 rating in lieu of the other fire ratings specified in the codes. Also, the results of most UL 94 flammability tests are not applicable to materials whose thickness exceeds 0.5 in. (13 mm).

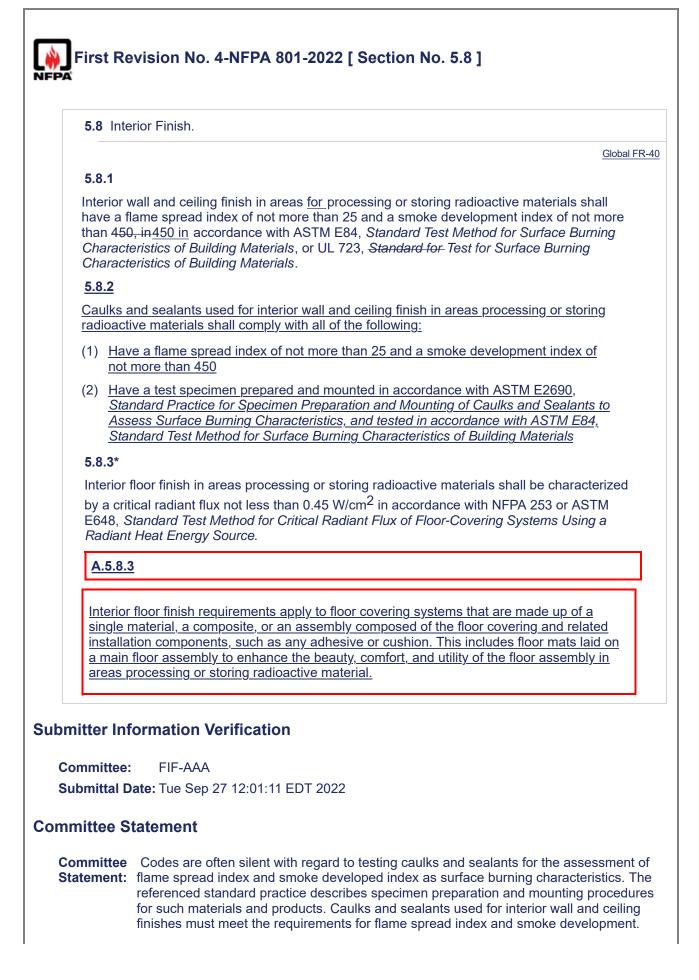
Response FR-10-NFPA 801-2022 Message:

Public Input No. 14-NFPA 801-2022 [Section No. 3.3.26]



5.3.1			
Temporary containment structures shall be <u>constructed</u> of noncombustible material resistant materials described in NFPA 701 limited combustible materials.			
5.3.1.1*	1*		
fabrication meet the	ry interior containment structures such as huts, glove bags, barriers, and other ons <u>that are used</u> for the purpose of maintenance activities or modifications shall requirements of 5.3.1 <u>Test Method 2 of NFPA 701</u> and shall be evaluated for on the facility.		
Committee:			
	ate: Tue Sep 27 11:49:43 EDT 2022		
Submittal D	ate: Tue Sep 27 11:49:43 EDT 2022 tatement This revision removes NFPA 701 for other than interior temporary structures since it does not qualify materials as flame resistant but simply determines whether or not they meet the associated flame propagation criteria. NFPA 701 is intended for textiles, films and decorative materials, which are typically flexible and not suitable for construction purposes and exhibit very poor fire performance. However, for temporary interior structures, material meeting Test Method 2 of NFPA 701 is the most commonly used and currently best available option. In order for section 5.3.1 to be consistent with the fire safety requirements in these		
Submittal D mmittee S Committee	ate: Tue Sep 27 11:49:43 EDT 2022 tatement This revision removes NFPA 701 for other than interior temporary structures since it does not qualify materials as flame resistant but simply determines whether or not they meet the associated flame propagation criteria. NFPA 701 is intended for textiles, films and decorative materials, which are typically flexible and not suitable for construction purposes and exhibit very poor fire performance. However, for temporary interior structures, material meeting Test Method 2 of NFPA 701 is the most commonly used and currently best available option.		

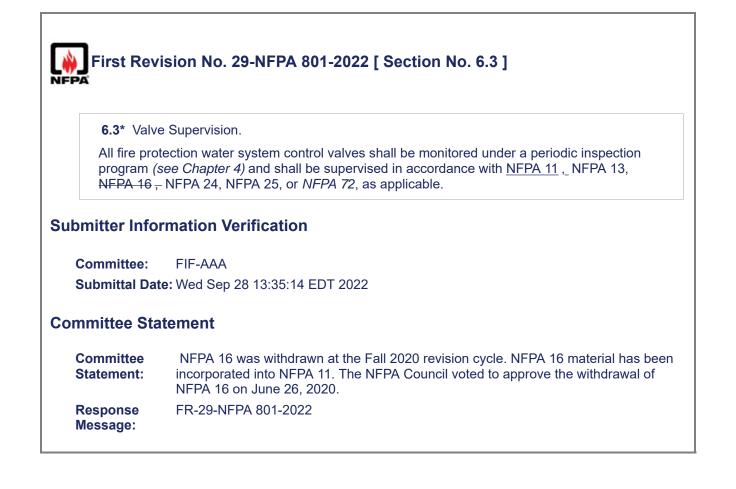


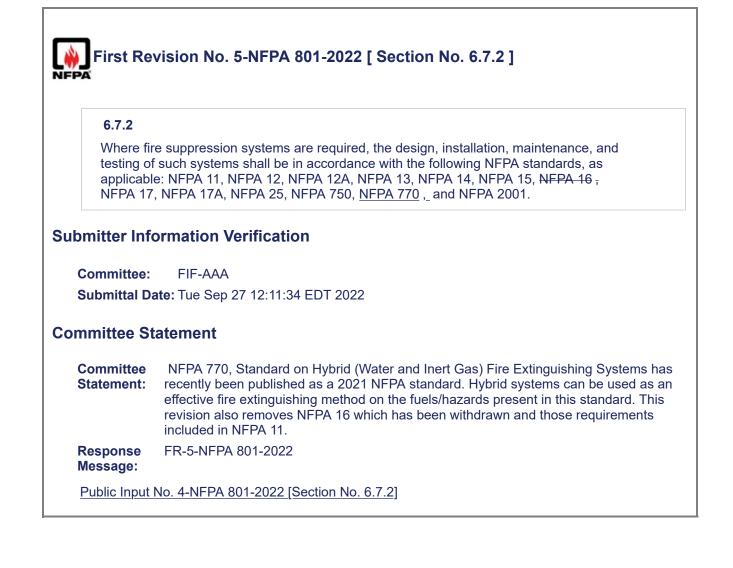


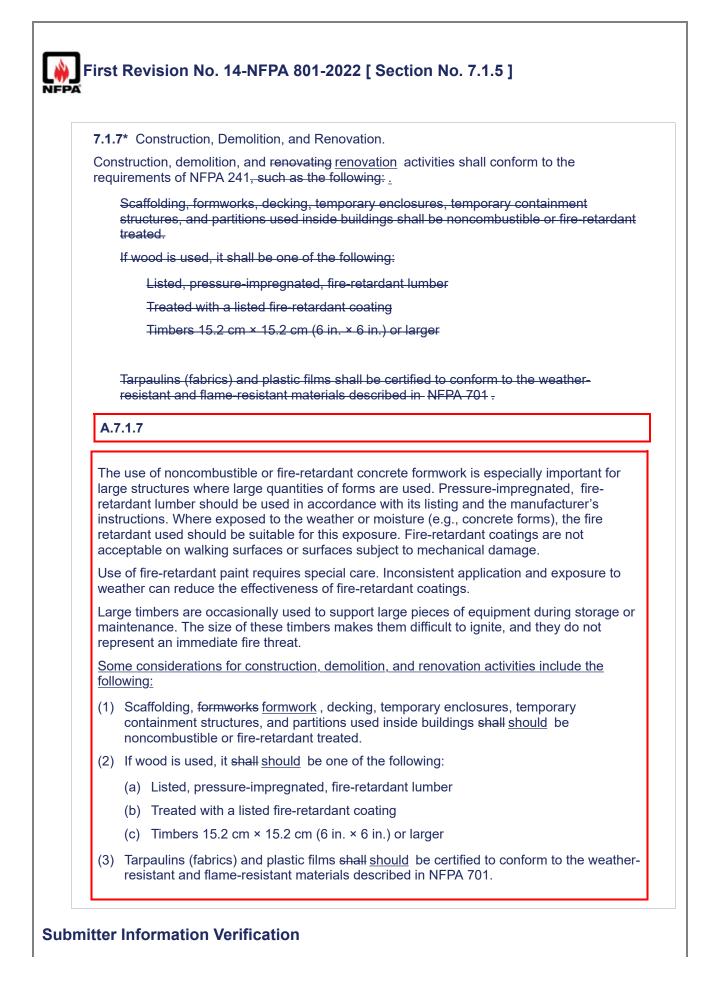
The additional annex material provides clarification that floor coverings (e.g. area rugs, floor mats) that can be used to cover the entire floor are required to comply with the same interior finish requirements. This wording is consistent with NFPA 253, Standard Method of Test for Critical Radiant Flux of Floor Covering Systems Using a Radiant Heat Energy Source.

Response FR-4-NFPA 801-2022 Message:

Public Input No. 1-NFPA 801-2020 [Section No. 5.8]





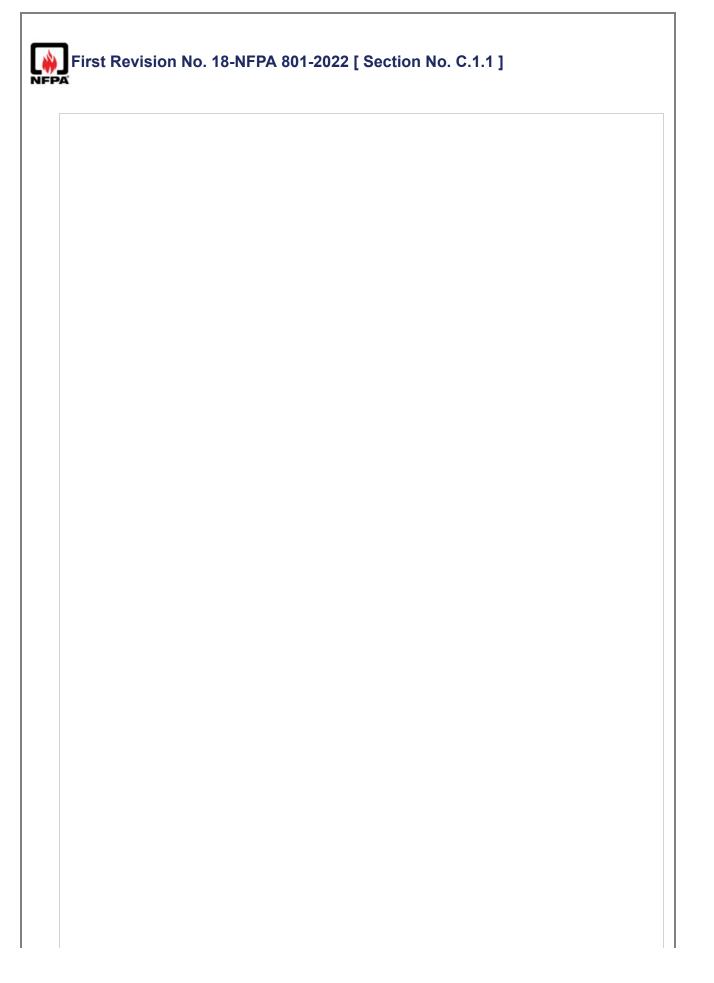


Committee: FIF-AAA Submittal Date: Tue Sep 27 16:35:13 EDT 2022

Committee Statement

Committee
Statement:This revision relocates examples to the annex per the NFPA Manual of Style. NFPA
703 is not referenced in NFPA 241 and has not been included in this section.Response
Message:FR-14-NFPA 801-2022

Public Input No. 2-NFPA 801-2022 [Section No. 7.1.5]



C.1	.1 NFPA Publications.
Nati	ional Fire Protection Association, 1 Batterymarch Park, Quincy, MA 02169-7471.
NFF editi	PA 4, Standard for Integrated Fire Protection and Life Safety System Testing, 2018 2024 ion.
NFF	PA 15, Standard for Water Spray Fixed Systems for Fire Protection, 2017 2022 edition.
NFF editi	PA 20, Standard for the Installation of Stationary Pumps for Fire Protection, 2019 2025 ion.
NFF	PA 22, Standard for Water Tanks for Private Fire Protection, 2018 2023 edition.
NFF	PA 30, <i>Flammable and Combustible Liquids Code</i> , 2018 2024 edition.
NFF	PA 45, Standard on Fire Protection for Laboratories Using Chemicals, 2019 2023 edition.
	PA 51B, Standard for Fire Prevention During Welding, Cutting, and Other Hot Work, 9 <u>2024</u> edition.
NFF	PA 80, Standard for Fire Doors and Other Opening Protectives, 2019 2025 edition.
	PA 80A, <i>Recommended Practice for Protection of Buildings from Exterior Fire Exposures</i> , 7.2022 edition.
NFF	PA 92, <i>Standard for Smoke Control Systems</i> , 2018 2024 edition.
NFF	PA 99, <i>Health Care Facilities Code</i> , 2018 <u>2024</u> edition.
NFF	PA 101 [®] , Life Safety Code [®] , 2018 2024 edition.
NFF	PA 204, <i>Standard for Smoke and Heat Venting</i> , 2018 <u>2024</u> edition.
NFF	PA 214 , <u>Standard on Water-Cooling Towers , 2021 edition.</u>
NFF	PA 220, Standard on Types of Building Construction, 2018 2024 edition.
NFF	PA 252, Standard Methods of Fire Tests of Door Assemblies, 2017 2022 edition.
NFF	PA 259, Standard Test Method for Potential Heat of Building Materials, 2018 2023 edition.
NFF	PA 484, Standard for Combustible Metals, 2019 2022 edition.
NFF	PA 600, <i>Standard on Facility Fire Brigades</i> , 2015 2020 edition.
NFF	PA 601, Standard for Security Services in Fire Loss Prevention, 2015 2020 edition.
	PA 701, <u>Standard Methods of Fire Tests for Flame Propagation of Textiles and Films</u> , 3 edition.
	PA 804, Standard for Fire Protection for Advanced Light Water Reactor Electric Generating nts, 2015 2020 edition.
	PA 805, Performance-Based Standard for Fire Protection for Light Water Reactor Electric nerating Plants, 2015 <u>2020</u> edition.
	PA 806, Performance-Based Standard for Fire Protection for Advanced Nuclear Reactor ctric Generating Plants Change Process, 2015 <u>2020</u> edition.
	PA 850 , <u>Recommended Practice for Fire Protection for Electric Generating Plants and</u> h Voltage Direct Current Converter Stations , 2020 edition.
	PA 901, Standard Classifications for <u>Fire and Emergency Services</u> Incident Reporting and Protection Data, 2016 2021 edition.
	PA 1500™, <i>Standard on Fire Department Occupational Safety, Health, and Wellness</i> gram, 2018 <u>2021</u> edition.
NFF	PA 1600 [®] , Standard on Continuity, Emergency, and Crisis Management, 2019 edition.
NFF	PA 1620, Standard for Pre-Incident Planning, 2015 2020 edition.

Submitter Information Verification

Committee: FIF-AAA Submittal Date: Wed Sep 28 11:15:32 EDT 2022

Committee Statement

Committee Statement:	Update NFPA publications reference dates to the current edition to comply with the Manual of Style.
Response Message:	FR-18-NFPA 801-2022

 C.1.2.1 ASTM Publications. ASTM International, 100 Barr Harbor Drive, P.O. Box C700, West Conshohocken, PA 19428-2959. ASTM-E84, Standard Test Method for Surface Burning Characteristics of Building Materials, 2016. ASTM E119, Standard Test Methods for Fire Tests of Building Construction and Materials, 2046 2020. ASTM E136, Standard Test Method for Behavior <u>Assessing Combustibility</u> of Materials in <u>Using</u> a Vertical Tube Furnace at 750°C,2016a 2019ae1. ASTM E2652, <u>Standard Test Method for Assessing Combustibility of Materials Using a Tube Furnace with a Cone-shaped Airflow Stabilizer, at 750°C , 2018.</u> C.1.2.2 EPA Publications. Environmental Protection Agency, William Jefferson Clinton East- Building, 1200 Pennsylvan Avenue, NW, Washington, DC 20460. EPA 520/1-75-001, Manual of Protective Action Guide and Protective Actions for Nuclear Incidents, 1992. C.1.2.3 FM Publications. EM Global, 270 Central Avenue, P.O. Box 7500, Johnston, RI 02919-4949. EM Data Sheet 1-4, <u>Fire Tests</u> , 2019. FM Data Sheet 7-32, <u>Ignitable Liquid Operations</u> ,2012. FM Data Sheet 7-38, <u>Hydraulic Fluids</u> ,2003. C.1.2.4 IEEE Publications. IEEE, 3 Park Avenue, 17th Floor, New York, NY 10016-5997. IEEE 383, Qualifying Electric Cables and Splices for Nuclear Facilities, 2015. IEEE S1 10, American National Standard for Metric Practice, 2016. C.1.2.5 OSHA Publications. Occupational Safety and Health Administration, 200 Constitution Avenue, NW, Washington, DC 20210. OSHA Title 29, Code of Federal Regulations, Part 1910.38, <u>Emplayee- Emergency Action Plans and Fire Prevention</u>. 	C.1.2 (Other Publications.
 19428-2959. ASTM E84, Standard Test Method for Surface Burning Characteristics of Building Materials , 2016. ASTM E119, Standard Test Methods for Fire Tests of Building Construction and Materials, 2016 2020. ASTM E136, Standard Test Method for Behavior <u>Assessing Combustibility</u> of Materials in Using a Vertical Tube Furnace at 750°C, 2016a 2019ae1. ASTM E2652, Standard Test Method for Assessing Combustibility of Materials Using a Tube Furnace with a Cone-shaped Airflow Stabilizer, at 750°C, 2018. C.1.2.2 EPA Publications. Environmental Protection Agency, William Jefferson Clinton East- Building, 1200 Pennsylvan Avenue, NW, Washington, DC 20460. EPA 520/1-75-001, Manual of Protective Action Guide and Protective Actions for Nuclear Incidents, 1992. C.1.2.3 FM Publications. FM Global, 270 Central Avenue, P.O. Box 7500, Johnston, RI 02919-4949. FM Data Sheet 1-4, <i>Fire Tests</i>, 2019. FM Data Sheet 7-32, <i>Ignitable Liquid Operations</i>, 2012. FM Data Sheet 7-98, <i>Hydraulic Fluids</i>, 2003. C.1.2.4 IEEE Publications. IEEE, 3 Park Avenue, 17th Floor, New York, NY 10016-5997. IEEE 383, <i>Qualifying Electric Cables and Splices for Nuclear Facilities</i>, 2015. IEEE SI 10, American National Standard for Metric Practice, 2016. C.1.2.5 OSHA Publications. Occupational Safety and Health Administration, 200 Constitution Avenue, NW, Washington, DC 20210. OSHA Title 29, Code of Federal Regulations, Part 1910.38, <i>Employee Emergency Action</i> 	C.1.2.1	ASTM Publications.
 Materials , 2016. ASTM E119, Standard Test Methods for Fire Tests of Building Construction and Materials, 2016 2020. ASTM E136, Standard Test Method for Behavior Assessing Combustibility of Materials in Using a Vertical Tube Furnace at 750°C, 2016a 2019ae1. ASTM E2652, Standard Test Method for Assessing Combustibility of Materials Using a Tube Furnace with a Cone-shaped Airflow Stabilizer, at 750°C, 2018. C.1.2.2 EPA Publications. Environmental Protection Agency, William Jefferson Clinton East- Building, 1200 Pennsylvan Avenue, NW, Washington, DC 20460. EPA 520/1-75-001, Manual of Protective Action Guide and Protective Actions for Nuclear Incidents, 1992. C.1.2.3 FM Publications. FM Global, 270 Central Avenue, P.O. Box 7500, Johnston, RI 02919-4949. FM Data Sheet 1-4, Fire Tests , 2019. FM Data Sheet 5-4, Transformers , 2019. FM Data Sheet 7-32, Ignitable Liquid Operations ,2012. FM Data Sheet 7-98, Hydraulic Fluids , 2003. C.1.2.4 IEEE Publications. IEEE, 3 Park Avenue, 17th Floor, New York, NY 10016-5997. IEEE SI 10, American National Standard for Metric Practice, 2016. C.1.2.5 OSHA Publications. Occupational Safety and Health Administration, 200 Constitution Avenue, NW, Washington, DC 20210. OSHA Title 29, Code of Federal Regulations, Part 1910.38, Employee- Emergency Action 		
 2046 <u>2020</u>. ASTM E136, Standard Test Method for Behavier <u>Assessing Combustibility</u> of Materials in <u>Using</u> a Vertical Tube Furnace at 750°C,2016a <u>2019ae1</u>. ASTM E2652, <u>Standard Test Method for Assessing Combustibility of Materials Using a Tube</u> Furnace with a Cone-shaped Airflow Stabilizer, at 750°C, <u>2018</u>. C.1.2.2 EPA Publications. Environmental Protection Agency, William Jefferson Clinton East- Building, 1200 Pennsylvan Avenue, NW, Washington, DC 20460. EPA 520/1-75-001, Manual of Protective Action Guide and Protective Actions for Nuclear Incidents, <u>1992</u>. C.1.2.3 FM Publications. FM Global, 270 Central Avenue, P.O. Box 7500, Johnston, RI 02919-4949. FM Data Sheet 1-4, <u>Fire Tests</u>, <u>2019</u>. FM Data Sheet 5-4, <u>Transformers</u>, <u>2019</u>. FM Data Sheet 7-32, <u>Ignitable Liquid Operations</u>, <u>2012</u>. FM Data Sheet 7-98, <u>Hydraulic Fluids</u>, <u>2003</u>. C.1.2.4 IEEE Publications. IEEE, 3 Park Avenue, 17th Floor, New York, NY 10016-5997. IEEE 383, Qualifying Electric Cables and Splices for Nuclear Facilities, 2015. IEEE SI 10, American National Standard for Metric Practice, 2016. C.1.2.5 OSHA Publications. Occupational Safety and Health Administration, 200 Constitution Avenue, NW, Washington, DC 20210. OSHA Title 29, Code of Federal Regulations, Part 1910.38, Employee- Emergency Action 		· · · · · · · · · · · · · · · · · · ·
 <i>in</i> <u>Using</u> a Vertical Tube Furnace at 750°C,2016a <u>2019ae1</u>. ASTM E2652, <u>Standard Test Method for Assessing Combustibility of Materials Using a Tube</u> <i>Furnace with a Cone-shaped Airflow Stabilizer, at 750°C</i>, 2018. C.1.2.2 EPA Publications. Environmental Protection Agency, William Jefferson Clinton East- Building, 1200 Pennsylvan Avenue, NW, Washington, DC 20460. EPA 520/1-75-001, <i>Manual of Protective Action Guide and Protective Actions for Nuclear</i> <i>Incidents</i>, <u>1992</u>. C.1.2.3 FM Publications. FM Global, 270 Central Avenue, P.O. Box 7500, Johnston, RI 02919-4949. FM Data Sheet 1-4., <i>Fire Tests</i>, 2019. FM Data Sheet 5-4, <i>Transformers</i>, 2019. FM Data Sheet 7-32, <i>Ignitable Liquid Operations</i>, 2012. FM Data Sheet 7-98, <i>Hydraulic Fluids</i>, 2003. C.1.2.4 IEEE Publications. IEEE, 3 Park Avenue, 17th Floor, New York, NY 10016-5997. IEEE 383, <i>Qualifying Electric Cables and Splices for Nuclear Facilities</i>, 2015. IEEE SI 10, <i>American National Standard for Metric Practice</i>, 2016. C.1.2.5 OSHA Publications. Occupational Safety and Health Administration, 200 Constitution Avenue, NW, Washington, DC 20210. OSHA Title 29, Code of Federal Regulations, Part 1910.38, <i>Employee- Emergency Action</i> 		
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DC 20210. OSHA Title 29, Code of Federal Regulations, Part 1910.38, <i>Employee</i> Emergency <u>Action</u>	C.1.2.5	OSHA Publications.
OSHA Title 29, Code of Federal Regulations, Part 1910.156, Fire Brigades.	OSHA 1	Title 29, Code of Federal Regulations, Part 1910.156, Fire Brigades.

C.1.2.6 UL Publications.				
Underwriters Laboratories Inc., 333 Pfingsten Road, Northbrook, IL 60062-2096.				
JL 263, Standard for Fire Tests of Building Construction and Materials, 2011, revised 2015 2022.				
UL 723, Standard for Test for Surface Burning Characteristics of Building Materials , 2008, revised 2013.				
<u>UL 94, Tests for Flammability of Plastic Materials for Parts in Devices and Appliances, 2013, Revised 2022.</u>				
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CommitteeUpdate Other Publications ASTM and UL reference dates to current edition to comply with the Manual of Style. References added with action on PI-14.				
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 Detail FR-22
C.2.1 NFPA Publications.
National Fire Protection Association, 1 Batterymarch Park, Quincy, MA 02169-7471.
NFPA 37, Standard for the Installation and Use of Stationary Combustion Engines and Gas Turbines, 2024 edition.
NFPA 68, Standard on explosion protection by deflagration venting, 2023 edition.
NFPA 69, Standard on Explosion Prevention Systems, 2024 edition.
NFPA 72 [®] , National Fire Alarm and Signaling Code [®] , 20192025 edition.
NFPA 80A, Recommended Practice for Protection of Buildings from Exterior Fire Exposures, 2022 edition.
NFPA 85, Boiler and Combustion Systems Hazards Code, 2023 edition.
NFPA 92, Standard for Smoke Control Systems, 2024 edition.
NFPA 99, Health Care Facilities Code, 2024 edition.
NFPA 110, Standard for Emergency and Standby Power Systems, 2025 edition.
NFPA 214, Standard on Water-Cooling Towers, 2021 edition.
NFPA 252, Standard Methods of Fire Tests of Door Assemblies, 2022 edition.
NFPA 259 , Standard Test Method for Potential Heat of Building Materials, 2023 edition.
NFPA 520, Standard on Subterranean Spaces, 2021 edition.
NFPA 601, Standard for Security Services in Fire Loss Prevention, 2020 edition.
NFPA 652, Standard on the Fundamentals of Combustible Dust, 2019 edition.
NFPA 654, Standard for the Prevention of Fire and Dust Explosions from the Manufacturing, Processing, and Handling of Combustible Particulate Solids, 2020 edition.
NFPA 703, Standard for Fire-Retardant-Treated Wood and Fire-Retardant Coatings for Building Materials, 2024 edition.
NFPA 770, Standard on Hybrid (Water and Inert Gas) Fire-Extinguishing Systems, 2021 edition.
NFPA 855, Standard for the Installation of Stationary Energy Storage Systems, 2023 edition.
NFPA 1600 [®] , Standard on Continuity, Emergency, and Crisis Management, 2019 edition.
NFPA 2010, Standard for Fixed Aerosol Fire-Extinguishing Systems, 2020 edition.
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