



First Revision No. 18-NFPA 804-2023 [Detail]

[Add new annex section to 10.7 for Battery Rooms.]

10.7* Battery Rooms.

A.10.7

Batteries containing reactive metals present a unique hazard and should be considered as part of the FHA.

Submitter Information Verification

Committee: FIF-AAA

Submittal Date: Mon Jun 05 15:40:37 EDT 2023

Committee Statement

Committee Statement: NFPA 855 was not adopted as recommended since it is not applicable to the use of this section. However, it is important to highlight in the annex that batteries containing reactive metals should be considered in the FHA to avoid any unforeseen hazards not already accounted for.

Response Message: FR-18-NFPA 804-2023

Public Input No. 7-NFPA 804-2020 [New Section after 10.7.2]



First Revision No. 24-NFPA 804-2023 [Section No. 2.2]

2.2 NFPA Publications.

National Fire Protection Association, 1 Batterymarch Park, Quincy, MA 02169-7471.

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 2025 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 2024 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 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 30, *Flammable and Combustible Liquids Code*, 2018 2024 edition.

NFPA 30A, *Code for Motor Fuel Dispensing Facilities and Repair Garages*, 2018 2024 edition.

NFPA 31, *Standard for the Installation of Oil-Burning Equipment*, 2020 2024 edition.

NFPA 37, *Standard for the Installation and Use of Stationary Combustion Engines and Gas Turbines*, 2018 2024 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*, 2020 2023 edition.

NFPA 58, *Liquefied Petroleum Gas Code*, 2020 2024 edition.

NFPA 70[®], *National Electrical Code*[®], 2020 2023 edition.

NFPA 72[®], *National Fire Alarm and Signaling Code*[®], 2019 2025 edition.

NFPA 75, *Standard for the Fire Protection of Information Technology Equipment*, 2020 2024 edition.

NFPA 80, *Standard for Fire Doors and Other Opening Protectives*, 2019 2025 edition.

NFPA 85, *Boiler and Combustion Systems Hazards Code*, 2019 2023 edition.

NFPA 90A, *Standard for the Installation of Air-Conditioning and Ventilating Systems*, 2018 2024 edition.

NFPA 101[®], *Life Safety Code*[®], 2018 2024 edition.

NFPA 211, *Standard for Chimneys, Fireplaces, Vents, and Solid Fuel-Burning Appliances*, 2019 2024 edition.

NFPA 214, *Standard on Water-Cooling Towers*, 2016 2021 edition.

NFPA 220, *Standard on Types of Building Construction*, 2018 2024 edition.

NFPA 232, *Standard for the Protection of Records*, 2017 2022 edition.

NFPA 241, *Standard for Safeguarding Construction, Alteration, and Demolition Operations*, 2019 2022 edition.

NFPA 252, *Standard Methods of Fire Tests of Door Assemblies*, 2017 2022 edition.

~~NFPA 253, *Standard Method of Test for Critical Radiant Flux of Floor Covering Systems Using a Radiant Heat Energy Source*, 2019 edition.~~

NFPA 259, *Standard Test Method for Potential Heat of Building Materials*, 2018 2023 edition.

NFPA 600, *Standard on Facility Fire Brigades*, 2020 2025 edition.

NFPA 601, *Standard for Security Services in Fire Loss Prevention*, 2020 2025 edition.

NFPA 701, *Standard Methods of Fire Tests for Flame Propagation of Textiles and Films*, 2019 2023 edition.

NFPA 750, *Standard on Water Mist Fire Protection Systems*, 2019 2023 edition.

NFPA 770, *Standard on Hybrid (Water and Inert Gas) Fire-Extinguishing Systems*, 2021 edition.

NFPA 780, *Standard for the Installation of Lightning Protection Systems*, 2020 2023 edition.

NFPA 806, *Performance-Based Standard for Fire Protection for Advanced Nuclear Reactor Electric Generating Plants Change Process*, 2020 2025 edition.

NFPA 1140, *Standard for Wildland Fire Protection*, 2022 edition.

~~NFPA 1143, *Standard for Wildland Fire Management*, 2018 edition.~~

~~NFPA 1500™, *Standard on Fire Department Occupational Safety, Health, and Wellness Program*, 2020 edition.~~

NFPA 1550, *Standard for Emergency Responder Health and Safety*, 2024 edition.

NFPA 2001, *Standard on Clean Agent Fire Extinguishing Systems*, 2018 2025 edition.

NFPA 2010, *Standard for Fixed Aerosol Fire-Extinguishing Systems*, 2020 2025 edition.

Supplemental Information

<u>File Name</u>	<u>Description</u>	<u>Approved</u>
804_FR24_2.2-NFPA_References.docx	For Staff Use Only - Attached as reference to committee discussion	

Submitter Information Verification

Committee: FIF-AAA

Submittal Date: Tue Jun 06 13:37:26 EDT 2023

Committee Statement

Committee Statement: Update publication to most current editions. NFPA 16 was removed since it has been withdrawn and incorporated into NFPA 11. NFPA 1143 has been removed since it was consolidated into NFPA 1140. NFPA 1500 has been removed since it was consolidated into NFPA 1550.

Response Message: FR-24-NFPA 804-2023

Public Input No. 29-NFPA 804-2023 [Section No. 2.2]

**First Revision No. 23-NFPA 804-2023 [Sections 2.3.1, 2.3.2, 2.3.3, 2.3.4, 2.3.5]****2.3.1 ASME Publications.**

American Society of Mechanical Engineers, Two Park Avenue, New York, NY 10016-5990.

ASME Boiler and Pressure Vessel Code, Section III, 2017 2021 .

ASME B31.1, *Power Piping*, 2016 2020 .

ASME NQA-1, *Quality Assurance Program Requirements for Nuclear Facilities Facility Applications* , 2017 2019 .

2.3.2 ASTM Publications.

ASTM International, 100 Barr Harbor Drive, P.O. Box C700, West Conshohocken, PA 19428-2959.

ASTM D92, *Standard Test Method for Flash and Fire Points by Cleveland Open Cup Tester* , 2016 2018 .

ASTM E84, *Standard Test Method for Surface Burning Characteristics of Building Materials*, 2018 2023 .

ASTM E119, *Standard Test Methods for Fire Tests of Building Construction and Materials*, 2018 2022 .

ASTM E136, *Standard Test Method for Behavior Assessing Combustibility of Materials in Using a Vertical Tube Furnace at 750°C*, 2016 2022 .

ASTM E814, *Standard Test Method for Fire Tests of Penetration Firestop Systems*, 2013a (2017).

ASTM E2652, *Standard Test Method for Behavior Assessing Combustibility of Materials in Using a Tube Furnace with a Cone-Shaped Airflow Stabilizer, at 750°C*, 2016 2022 .

ASTM E2965, *Standard Test Method for Determination of Low Levels of Heat Release Rate for Materials and Products Using an Oxygen Consumption Calorimeter*, 2016 2022a .

2.3.3 IEEE Publications.

IEEE, ~~Three Park Avenue~~, 17th Floor, New York, NY 10016-5997 Operations Center, 445 Hoes Lane, Piscataway, NJ 08854-4141 .

ANSI/IEEE C2, *National Electrical Safety Code*®, 2017 2023 .

IEEE 383, *Standard for Type Test of Class IE Electric Cables, Field Splices and Connections for Nuclear Power Generating Stations*, 1974 (rev. 2015).

IEEE 1202, *Standard for Flame Testing of Cables for Use in Cable Tray in Industrial and Commercial Occupancies*, 2006.

IEEE 1682, Standard for Qualifying Fiber Optic Cables, Connections, and Optical Fiber Splices for Use in Safety Systems in Nuclear Power Generating Stations , 2011.

IEEE/ASTM SI 10, *American National Standard for Metric Practice*, 2017.

2.3.4 NEI Publications.

Nuclear Energy Institute, 1201 F Street, NW, Suite 1100, Washington, DC 20004-1218.

NEI 00-01, *Guidance for Post-Fire Safe Shutdown Circuit Analysis*, prepared by NEI Circuit Failure Issues Task Force, October 2011.

2.3.5 UL Publications.

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

UL 586, ~~Standard for Test Performance of High-Efficiency, Particulate, Air Filter Units~~, 2009, revised 2014 2022 .

UL 723, ~~Standard for Test for Surface Burning Characteristics of Building Materials~~, 2008, revised 2013 2018 .

UL 1479, ~~Standard for Safety Fire Tests of Through- Penetration Firestops~~, 2015, revised 2021 .

UL 2196, ~~Standard Fire Test for Tests Circuitry of Fire- Resistive Power, Instrumental, Control and Data Cables~~, 2017, revised 2020 .

Supplemental Information

<u>File Name</u>	<u>Description</u>	<u>Approved</u>
804_FR23_2.3-Other_References.docx	Staff Use Only - Attached as reference for the changes made by the committee	

Submitter Information Verification

Committee: FIF-AAA

Submittal Date: Tue Jun 06 13:34:41 EDT 2023

Committee Statement

Committee Statement: Update the publication references to the most current editions.

Response Message: FR-23-NFPA 804-2023

Public Input No. 24-NFPA 804-2022 [Section No. 2.3.5]

Public Input No. 27-NFPA 804-2022 [Section No. 2.3.2]

Public Input No. 17-NFPA 804-2022 [Section No. 2.3.2]



First Revision No. 8-NFPA 804-2023 [Section No. 2.4]

2.4 References for Extracts in Mandatory Sections.

NFPA 101[®], *Life Safety Code*[®], 2018 2024 edition.

NFPA 801, *Standard for Fire Protection for Facilities Handling Radioactive Materials*, 2020 2025 edition.

NFPA 805, *Performance-Based Standard for Fire Protection for Light Water Reactor Electric Generating Plants*, 2020 edition.

~~NFPA 1144, *Standard for Reducing Structure Ignition Hazards from Wildland Fire*, 2018 edition.~~

NFPA 5000[®], *Building Construction and Safety Code*[®], 2024 edition.

Submitter Information Verification

Committee: FIF-AAA

Submittal Date: Mon Jun 05 09:02:13 EDT 2023

Committee Statement

Committee Statement: NFPA references updated to their current editions. Reference to NFPA 1144 has been removed due to the action taken on section 3.3.6 for the term "combustible". NFPA 5000 has been added to this section due to the actions taken on sections 3.3.6, 3.3.30, 3.3.31, and 8.3.4 which are related to "combustible", "limited-combustible", and "non-combustible" materials.

Response Message: FR-8-NFPA 804-2023



First Revision No. 5-NFPA 804-2023 [Section No. 3.3.6]

3.3.6 Combustible (Material) .

A ~~combustible~~ material is ~~any material~~ that, in the form in which it is used and under the conditions anticipated, will ignite and burn ~~or will add appreciable heat to an ambient fire.~~ [~~1144, 2018~~] ; a material that does not meet the definition of noncombustible or limited-combustible. [5000, 2024]

Submitter Information Verification

Committee: FIF-AAA

Submittal Date: Mon Jun 05 08:35:21 EDT 2023

Committee Statement

Committee Statement: Updated the definition for "combustible" to match the extracted definition in NFPA 5000 which is the source document for the definition in NFPA 1144. Also see action taken on the definitions for "limited-combustible", "noncombustible", and section 8.3.4 on Materials.

Response Message: FR-5-NFPA 804-2023



First Revision No. 6-NFPA 804-2023 [Sections 3.3.30, 3.3.31]

3.3.30 Limited-Combustible (Material).

See 8.3.4 8.3.4.2 . [[5000](#), [2024](#)]

3.3.31 Noncombustible (Material).

See 8.3.4 8.3.4.1 . [[5000](#), [2024](#)]

Submitter Information Verification

Committee: FIF-AAA

Submittal Date: Mon Jun 05 08:41:18 EDT 2023

Committee Statement

Committee Statement: Updated the cross references of the defined terms better direct the user to the applicable section in the document and to align with NFPA 5000. Also see action taken on section 3.3.6 for the term "combustible" and section 8.3.4 which have also been updated to NFPA 5000 extracts.

Response Message: FR-6-NFPA 804-2023



First Revision No. 19-NFPA 804-2023 [Section No. 5.3.3.4]

5.3.3.4

~~Only noncombustible panels~~ Panels, plastic films, or flame-retardant fabrics, including tarpaulins, or approved shall be certified as being constructed of materials of equivalent fire-retardant characteristics shall be used that comply with 8.3.4 .

A.5.3.3.4

~~Particular attention should be given to the control of halogenated plastics.~~

Submitter Information Verification

Committee: FIF-AAA

Submission Date: Mon Jun 05 17:42:58 EDT 2023

Committee Statement

Committee Statement: This change provides flexibility for manufacturers and users to follow section 8.3.4 for noncombustible and limited-combustible material. The reference to ASTM E1354 was not adopted since it is a small scale test that is not typically representative of fire risk of materials of this nature in the use of nuclear facilities. The annex section A.5.3.3.4 has been removed since it is redundant to section A.8.3.2.

Response Message: FR-19-NFPA 804-2023

[Public Input No. 19-NFPA 804-2022 \[Sections 5.3.3.4, 5.3.3.5\]](#)

[Public Input No. 20-NFPA 804-2022 \[Section No. A.5.3.3.4\]](#)



First Revision No. 11-NFPA 804-2023 [Section No. 8.2]

8.2 Life Safety.

8.2.1*

NFPA 101, in conjunction with the fire hazards analysis (FHA), shall be the standard for life safety ~~from fire in and occupancy determination regarding~~ the design and operation of the ALWR, except where modified by this standard.

A.8.2.1

Conformance with NFPA 101 satisfies Occupational Safety and Health Administration (OSHA) requirements for means of egress.

The operation and maintenance of an ALWR plant involves unique operations and materials in process and should be addressed in the FHA.

The majority of the areas involved in the transfer of nuclear energy to electrical energy ~~shall~~ should be considered as special-purpose industrial occupancies and ~~special-structure windowless buildings~~ limited access structures, as defined in NFPA 101.

Cafeterias, lunchrooms, conference rooms, and assembly rooms having an occupant load greater than 50 ~~shall~~ should conform to the new assembly occupancy requirements in NFPA 101.

General office areas, office buildings, and training facilities ~~shall~~ should conform to the business occupancy requirements in NFPA 101.

Warehouses and storage areas ~~shall~~ should conform to the storage occupancy requirements in NFPA 101.

8.2.2*

~~The majority of the areas involved in the transfer of nuclear energy to electrical energy shall be considered as special-purpose industrial occupancies and special-structure windowless buildings, as defined in NFPA 101.~~

A.8.2.2

~~The operation and maintenance of an ALWR plant involves unique operations and materials in process.~~

8.2.2

In determining the exits for an ALWR plant, the actual number of personnel and occupancy hazards during maintenance, refueling, and testing shall determine the exit requirements and occupant load based on NFPA 101.

8.2.4

~~Cafeterias, lunchrooms, conference rooms, and assembly rooms having an occupant load greater than 50 shall conform to the new assembly occupancy requirements in NFPA 101.~~

8.2.5

~~General office areas, office buildings, and training facilities shall conform to the business occupancy requirements in NFPA 101.~~

8.2.6

~~Warehouses and storage areas shall conform to the storage occupancy requirements in NFPA 101.~~

Submitter Information Verification

Committee: FIF-AAA

Submittal Date: Mon Jun 05 12:39:40 EDT 2023

Committee Statement

Committee Statement: The language has been revised to provide more clarity to the user and better align with NFPA 101 as it applies to special-purpose industrial occupancy, which is a defined term in NFPA 101. The FHA has been introduced as a method to evaluate unique facility considerations. Sections 8.2.2, 8.2.4, 8.2.5 and 8.2.6 have been moved to the annex to focus on the FHA for occupancy identification. Additionally the sections moved to the annex were redundant to requirements in NFPA 101 and potentially more restrictive due to the mandatory language that existed in NFPA 804.

Response Message: FR-11-NFPA 804-2023

[Public Input No. 16-NFPA 804-2022 \[Section No. 8.2.2\]](#)



First Revision No. 12-NFPA 804-2023 [Section No. 8.3.1]

8.3.1

Construction materials for the ALWR plant The power block shall be classified by at least one of the following test methods appropriate to the end-use configuration of the material: of Type I or Type II construction in accordance with NFPA 220 .

~~NFPA 220 , Standard on Types of Building Construction~~

~~ASTM E136, Standard Test Method for Behavior of Materials in a Vertical Tube Furnace at 750°C~~

~~ASTM E119 , Standard Test Methods for Fire Tests of Building Construction and Materials~~

~~NFPA 253 , Standard Method of Test for Critical Radiant Flux of Floor Covering Systems Using a Radiant Heat Energy Source~~

~~NFPA 259 , Standard Test Method for Potential Heat of Building Materials~~

~~UL 723, Standard for Test for Surface Burning Characteristics of Building Materials~~

8.3.1.1*

Limited-combustible construction shall not be permitted unless the use is evaluated in the fire hazards analysis and approved by the AHJ.

A.8.3.1.1

It is not the intent of this standard to prohibit the use of common materials such as, but not limited to, gypsum wallboard, approved roof assemblies, or approved fire-rated assemblies. The objective is to prohibit the use of unnecessary limited-combustible materials, such as wood platforms and other similar structural elements.

Submitter Information Verification

Committee: FIF-AAA

Submittal Date: Mon Jun 05 13:07:06 EDT 2023

Committee Statement

Committee Statement: This section has been revised to clarify the original intent that construction types are to be Type I or Type II. Though previously listed, this change makes clear that NFPA 220 is the document that needs to be followed to determine where Type I or Type II construction is required. The other references have been removed since they are already incorporated in NFPA 220 and section 8.3.4 which covers limited-combustible construction.

Response Message: FR-12-NFPA 804-2023

Public Input No. 25-NFPA 804-2022 [Section No. 8.3.1]



First Revision No. 7-NFPA 804-2023 [Section No. 8.3.4]

8.3.4 Materials

8.3.4.1* Noncombustible Material. [~~101~~ :4.6.13]

A.8.3.4.1

The provisions of 8.3.4.1 do not require inherently noncombustible materials to be tested in order to be classified as noncombustible materials. [~~101~~ : A.4.6.13] [**5000**: A.7.1.4.1]

8.3.4.1.1

A material that complies with any one of the following shall be considered a noncombustible material:

- (1)* A The material ~~that~~, in the form in which it is used, and under the conditions anticipated, will not ignite, burn, support combustion, or release flammable vapors when subjected to fire or heat.

A.8.3.4.1.1(1)

Examples of such materials include steel, concrete, masonry, and glass.
[~~101~~ : A.4.6.13.1(1)] [**5000**: A.7.1.4.1.1(1)]

- (2) A The material ~~that~~ is reported as passing ASTM E136, *Standard Test Method for Behavior Assessing Combustibility of Materials in Using a Vertical Tube Furnace at 750°C*.
- (3) A The 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 Behavior Assessing Combustibility of Materials in Using a Tube Furnace with a Cone-Shaped Airflow Stabilizer, at 750°C*.

[~~101~~ : 4.6.13.1] [**5000**: 7.1.4.1.1]

8.3.4.1.2

Where the term *limited-combustible* is used in this document, it shall also include the term *noncombustible*. [~~101~~ : 4.6.13.2] [**5000**: 7.1.4.1.2]

8.3.4.2* Limited-Combustible Material.

A material shall be considered a limited-combustible material where one of the following is met:

- (1) The conditions of 8.3.4.2.1 and 8.3.4.2.2, and the conditions of either 8.3.4.2.3 or ~~8.3.4.2.2~~ 8.3.4.2.4, shall be met.
- (2) The conditions of 8.3.4.2.5 shall be met. [~~101~~ : 4.6.14] [**5000**: 7.1.4.2]

A.8.3.4.2

Materials subject to increase in combustibility or flame spread index beyond the limits herein established through the effects of age, moisture, or other atmospheric condition are ~~is~~ considered combustible. (See NFPA 259 and NFPA 220.) [~~101~~ : A.4.6.14] [**5000**: A.7.1.4.2]

8.3.4.2.1

The material shall ~~does~~ not comply with the requirements for noncombustible material in accordance with 8.3.4.1. [~~101~~ : 4.6.14.1] [**5000**: 7.1.4.2.1]

8.3.4.2.2

The material, in the form in which it is used, shall exhibit a potential heat value not exceeding 3500 Btu/lb (8141 kJ/kg) where tested in accordance with NFPA 259. [~~101~~ : 4.6.14.2] [**5000**: 7.1.4.2.2]

8.3.4.2.3

The material shall have ~~the a~~ structural base of a noncombustible material with a surfacing not exceeding a thickness of 1/8 in. (3.2 mm) 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 ANSI/ UL 723, *Standard for Test for Surface Burning Characteristics of Building Materials*. [~~101~~ : 4.6.14.3] [**5000**: 7.1.4.2.3]

8.3.4.2.4

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, *Standard Test Method for Surface Burning Characteristics of Building Materials*, or ANSI/ ~~or~~ UL 723, *Standard for Test for Surface Burning Characteristics of Building Materials*, and shall be ~~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 ANSI/ UL 723. [~~101~~ : 4.6.14.4] [**5000**: 7.1.4.2.4]

8.3.4.2.5

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 20-minute exposure, and both of 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. [~~101~~: 4.6.14.5] [**5000**: 7.1.4.2.5]

8.3.4.2.6

Where the term *limited-combustible* is used in this document standard, it shall also include the term *noncombustible*. [~~101~~ : 4.6.14.6] [**5000**: 7.1.4.2.6]

Supplemental Information

<u>File Name</u>	<u>Description</u>	<u>Approved</u>
804_FR7_NFPA5000_2024-Extracts.docx	For Staff Use Only - This is a word document that can be used to clarify formatting or committee intent. This contains the changes used on section 3.3.6, 3.3.30, 3.3.31 as well.	

Submitter Information Verification

Committee: FIF-AAA

Submittal Date: Mon Jun 05 08:47:22 EDT 2023

Committee Statement

Committee Statement: Updated all of 8.3.4 to extract from NFPA 5000 since that is the source document for NFPA 101. This change aligns with other NFPA documents which discuss Noncombustible and limited-combustible materials. Also see committee action taken on the defined terms "combustible", "limited-combustible", and "noncombustible" in Chapter 3 which have been updated to NFPA 5000 extracts.

Response Message: FR-7-NFPA 804-2023



First Revision No. 13-NFPA 804-2023 [Section No. 8.3.6]

8.3.6*

Roof coverings shall be Class A as determined by tests.

A.8.3.6

Adequate test standards that can be used to determine Class A ratings are ASTM E108, Standard Test Methods for Fire Tests of Roof Coverings ; FM Approval 4470, Single-Ply, Polymer-Modified Bitumen Sheet, Built-Up Roof (BUR) and Liquid Applied Roof Assemblies for Use in Class 1 and Noncombustible Roof Deck Construction ; and UL 790, Test Methods for Fire Tests of Roof Coverings .

Submitter Information Verification

Committee: FIF-AAA

Submittal Date: Mon Jun 05 14:20:40 EDT 2023

Committee Statement

Committee Statement: The recommendations were adopted as annex material so that the requirement would not be overly limiting.

Response Message: FR-13-NFPA 804-2023

[Public Input No. 26-NFPA 804-2022 \[Section No. 8.3.6\]](#)

[Public Input No. 23-NFPA 804-2022 \[Section No. 8.3.6\]](#)



First Revision No. 14-NFPA 804-2023 [Sections 8.8.2, 8.8.3]

8.8.2

~~Meeting the~~ Fiber-optic cable shall meet the flame test requirements of IEEE 383, *Standard for Type Test of Class IE Electric Cables, Field Splices and Connections for Nuclear Power Generating Stations*, ~~shall not eliminate the need for protection as specified in this standard and the fire hazards analysis~~ and IEEE 1682, *Standard for Qualifying Fiber Optic Cables, Connections, and Optical Fiber Splices for Use in Safety Systems in Nuclear Power Generating Stations*.

8.8.3

~~Fiber optic cable insulation and jacketing material shall meet the fire and flame test~~ Meeting the requirements of IEEE 383, *Standard for Type Test of Class IE Electric Cables, Field Splices and Connections for Nuclear Power Generating Stations*, and IEEE 1682, Standard for Qualifying Fiber Optic Cables, Connections, and Optical Fiber Splices for Use in Safety Systems in Nuclear Power Generating Stations, ~~shall not eliminate the need for protection as specified in this standard and the fire hazards analysis~~.

Submitter Information Verification

Committee: FIF-AAA

Submittal Date: Mon Jun 05 14:51:52 EDT 2023

Committee Statement

Committee Statement: The requirements of 8.8.2 and 8.8.3 has been switched for better clarity for the user. IEEE 1682 has been added to the requirements since it specifically address fiber optic cable which was not addressed by IEEE 383.

Response Message: FR-14-NFPA 804-2023



First Revision No. 15-NFPA 804-2023 [Section No. 9.6.2]

9.6.2

Except as modified in this chapter, the following NFPA standards shall be used:

- (1) NFPA 11
- (2) NFPA 12
- (3) NFPA 13
- (4) NFPA 14
- (5) NFPA 15
- ~~NFPA 16~~
- (6) NFPA 17
- (7) NFPA 750
- (8) NFPA 770
- (9) NFPA 2001
- (10) ~~NFPA 2010~~ NFPA 2010

Submitter Information Verification

Committee: FIF-AAA

Submittal Date: Mon Jun 05 15:15:29 EDT 2023

Committee Statement

Committee Statement: NFPA 770, Standard on Hybrid (Water and Inert Gas) Fire-Extinguishing Systems is a new standard that was published by NFPA in 2021. Hybrid fire-extinguishing systems can be used to protect the hazards defined in this standard.

Removing the duplicated NFPA 2010.

NFPA 16 has also been removed since it has been incorporated into NFPA 11.

Response Message: FR-15-NFPA 804-2023

Public Input No. 28-NFPA 804-2023 [Section No. 9.6.2]



First Revision No. 16-NFPA 804-2023 [Section No. 10.4.1.4]

10.4.1.4

Cable spreading rooms shall be provided with all of the following:

- (1) At least two remote and separate entrances for access by the fire brigade personnel
- (2) Aisle separation between tray stacks at least 3 ft (0.9 m) wide and 8 ft (24 2.4 m) high
- (3) Hose stations and portable fire extinguishers installed outside the room
- (4)* Area smoke detection

Submitter Information Verification

Committee: FIF-AAA

Submittal Date: Mon Jun 05 15:23:06 EDT 2023

Committee Statement

Committee Statement: Corrects an error in conversion of 8 ft to 2.4 m.

Response Message: FR-16-NFPA 804-2023

Public Input No. 15-NFPA 804-2021 [Section No. 10.4.1.4]



First Revision No. 17-NFPA 804-2023 [Section No. 10.7.1]

10.7.1*

Battery rooms shall be provided with ventilation to limit the concentration of hydrogen to 2 1 percent by volume, and loss of ventilation shall alarm in the control room.

Submitter Information Verification

Committee: FIF-AAA

Submittal Date: Mon Jun 05 15:26:01 EDT 2023

Committee Statement

Committee Statement: This change is to be consistent with NFPA 850, NFPA 69, and NFPA 497.

It is good practice to have a limitation at 25% of the LEL (i.e., 1% for hydrogen as the LEL is at 4%).

Response Message: FR-17-NFPA 804-2023

[Public Input No. 1-NFPA 804-2020 \[Section No. 10.7.1\]](#)



First Revision No. 28-NFPA 804-2023 [Section No. 10.8.2.2]

10.8.2.2

Foam-water sprinkler systems installed in place of automatic sprinklers described in 10.8.2.1 shall be designed in accordance with ~~NFPA 16~~ NFPA 11 and the design densities specified in 10.8.2.1.

Submitter Information Verification

Committee: FIF-AAA

Submittal Date: Tue Jun 06 21:24:45 EDT 2023

Committee Statement

Committee Statement: The reference to NFPA 16 has been changed to NFPA 11 since NFPA 16 was withdrawn at the Fall 2020 revision cycle and its material were incorporated into NFPA 11.

Response Message: FR-28-NFPA 804-2023

**First Revision No. 20-NFPA 804-2023 [Section No. 10.8.3.2]****10.8.3.2***

If closed-head water spray systems utilizing directional nozzles in accordance with NFPA 15 are provided, bearing protection shall be provided for a minimum density of 0.30 gpm/ft² (12.2 L/min·m²) over the protected area.

A.10.8.3.2

The 0.30 gpm/ft² value comes from EPRI NP-4144, *Turbine Generator Fire Protection by Sprinkler System*. The value provides a conservative approach to that as referenced in NFPA 850.

Submitter Information Verification

Committee: FIF-AAA

Submittal Date: Tue Jun 06 11:13:21 EDT 2023

Committee Statement

Committee Statement: Provides a reference for where the sprinkler density comes from to clarify the requirement.

Response Message: FR-20-NFPA 804-2023



First Revision No. 33-NFPA 804-2023 [Section No. 10.22]

10.22 Fire Pump Room/House.

Rooms housing ~~diesel-driven~~ fire pumps shall be protected by ~~automatic sprinkler, water spray, or foam-water sprinkler systems~~ in accordance with NFPA 20 .

10.22.1

~~Rooms housing diesel-driven fire pumps shall be protected by automatic sprinkler, water spray, or foam-water sprinkler systems.~~

10.22.2

~~If sprinkler and water spray systems are provided for fire pump houses, they shall be designed for a minimum density of 0.25 gpm/ft² (10.19 L/min·m²) over the entire fire area.~~

Submitter Information Verification

Committee: FIF-AAA

Submittal Date: Fri Jun 09 21:27:13 EDT 2023

Committee Statement

Committee Statement: NFPA 20 provides requirements on protection for fire pump(s) rooms and/or buildings and is the appropriate document to use for these requirements. Also see FR-21 & FR-22 for NFPA 805. With 10.22 now directing users to NFPA 20 for fire pump room or building fire protection, the minimum density of 10.22.2 is no longer needed and the section has been deleted.

Response Message: FR-33-NFPA 804-2023

[Public Input No. 12-NFPA 804-2020 \[New Section after 10.22.2\]](#)

[Public Input No. 14-NFPA 804-2021 \[Section No. 10.22.2\]](#)

[Public Input No. 11-NFPA 804-2020 \[Section No. 10.22.2\]](#)

[Public Input No. 13-NFPA 804-2020 \[Section No. 10.22.1\]](#)



First Revision No. 29-NFPA 804-2023 [Section No. 10.23.2]

10.23.2

Oil-filled main, station service, and startup transformers shall be protected with automatic water spray systems in accordance with NFPA 15 or foam-water spray systems in accordance with ~~NFPA 16~~ NFPA 11 .

Submitter Information Verification

Committee: FIF-AAA

Submittal Date: Tue Jun 06 21:27:08 EDT 2023

Committee Statement

Committee Statement: The reference to NFPA 16 has been changed to NFPA 11 since NFPA 16 was withdrawn at the Fall 2020 revision cycle and its material were incorporated into NFPA 11.

Response Message: FR-29-NFPA 804-2023



First Revision No. 32-NFPA 804-2023 [Section No. 11.3.1.1]

11.3.1.1

Prior to clearing forest and brush-covered areas, the following actions shall be taken:

- (1) The owner shall ensure that a written fire control plan is prepared and that ~~fire-~~
~~fighting~~ firefighting tools and equipment are made available as required by
NFPA 1143 NFPA 1140 .
- (2) Contact shall be made with local fire and forest agencies for current data on restrictions
and fire potential and to arrange for necessary permits.

Submitter Information Verification

Committee: FIF-AAA

Submittal Date: Tue Jun 06 21:48:53 EDT 2023

Committee Statement

Committee Statement: Reference to NFPA 1143 has been changed to NFPA 1140 since, as part of the Emergency Response and Responder Safety Document Consolidation Plan as approved by the NFPA Standards Council, NFPA 1143 has been combined into new consolidated Standard NFPA 1140.

Response Message: FR-32-NFPA 804-2023

**First Revision No. 27-NFPA 804-2023 [Section No. A.5.7.3]****A.5.7.3**

Normally NFPA standards are used to determine the frequency and type of inspection, testing, and maintenance performed on systems installed for fire protection. Table A.5.7.3 is provided as a reference for this purpose. However, there are considerations and configurations at nuclear power plants that might make it difficult or impracticable to follow the exact requirements of the NFPA standard. In such situations, those responsible for fire protection at the plant need to establish the appropriate inspection, testing, and maintenance frequency and type. For example, fire protection systems installed in containment or high-radiation areas might be accessible only during outages. Water disposal considerations might limit certain sprinkler system tests within radioactive controlled areas.

Table A.5.7.3 Reference Guide for Fire Equipment Inspection, Testing, and Maintenance

<u>Item</u>	<u>NFPA Document</u>
Supervisory and fire alarm circuits	72
Fire detectors	72
Manual fire alarms	72
Sprinkler water flow alarms	25, 72
Sprinkler and water spray systems	15, 25
Foam systems	11, 16
Halogenated agent, chemical, and CO ₂ systems	12, 12A, 17
Fire pumps and booster pumps	20
Water tanks and alarms	22, 25, 72
PIVs and OS&Y valves	25, 72
Fire hose and standpipes	14, 1962
Portable fire extinguishers and hose nozzles	10, 1962
Fire doors	80
Smoke vents	204
Emergency lighting	70
Radio communication equipment	1224 1225
Audible and visual signals	72

Submitter Information Verification

Committee: FIF-AAA

Submittal Date: Tue Jun 06 21:18:53 EDT 2023

Committee Statement

Committee Statement: Since NFPA 16 was withdrawn at the Fall 2020 revision cycle and its material was incorporated into NFPA 11, reference to NFPA 16 has been removed.

Response Message: FR-27-NFPA 804-2023



First Revision No. 30-NFPA 804-2023 [Section No. B.8.2.2]

B.8.2.2

Foam-water sprinkler systems installed in place of automatic sprinklers described in B.8.2.1 should be designed in accordance with ~~NFPA 16~~ NFPA 11 and the design densities specified in B.8.2.1.

Submitter Information Verification

Committee: FIF-AAA

Submittal Date: Tue Jun 06 21:28:35 EDT 2023

Committee Statement

Committee Statement: The reference to NFPA 16 has been changed to NFPA 11 since NFPA 16 was withdrawn at the Fall 2020 revision cycle and its material were incorporated into NFPA 11.

Response Message: FR-30-NFPA 804-2023



First Revision No. 31-NFPA 804-2023 [Section No. B.23.2]

B.23.2

Oil-filled main, station service, and start-up transformers should be protected with automatic water spray systems in accordance with NFPA 15 or foam-water spray systems in accordance with ~~NFPA 16~~ NFPA 11 .

Submitter Information Verification

Committee: FIF-AAA

Submittal Date: Tue Jun 06 21:29:37 EDT 2023

Committee Statement

Committee Statement: The reference to NFPA 16 has been changed to NFPA 11 since NFPA 16 was withdrawn at the Fall 2020 revision cycle and its material were incorporated into NFPA 11.

Response Message: FR-31-NFPA 804-2023



First Revision No. 26-NFPA 804-2023 [Section No. C.1.1]

C.1.1 NFPA Publications.

National Fire Protection Association, 1 Batterymarch Park, Quincy, MA 02169-7471.

NFPA *Fire Protection Handbook*, 20th ~~21st~~ edition, 2008 2023 .

NFPA 4, *Standard for Integrated Fire Protection and Life Safety System Testing*, 2018 2024 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 14, *Standard for the Installation of Standpipe and Hose Systems*, 2019 2024 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 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*, 2020 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*, 2018 2024 edition.

NFPA 55, *Compressed Gases and Cryogenic Fluids Code*, 2020 2023 edition.

NFPA 70[®], *National Electrical Code*[®], 2020 2023 edition.

NFPA 72[®], *National Fire Alarm and Signaling Code*[®], 2019 2025 edition.

NFPA 75, *Standard for the Fire Protection of Information Technology Equipment*, 2020 2024 edition.

NFPA 80, *Standard for Fire Doors and Other Opening Protectives*, 2019 2025 edition.

NFPA 80A, *Recommended Practice for Protection of Buildings from Exterior Fire Exposures*, 2017 2022 edition.

NFPA 85, *Boiler and Combustion Systems Hazards Code*, 2019 2023 edition.

NFPA 92, *Standard for Smoke Control Systems*, 2018 2024 edition.

NFPA 101[®], *Life Safety Code*[®], 2018 2024 edition.

NFPA 204, *Standard for Smoke and Heat Venting*, 2018 2024 edition.

NFPA 214, *Standard on Water-Cooling Towers*, 2016 2021 edition.

NFPA 220, *Standard on Types of Building Construction*, 2018 2024 edition.

NFPA 232, *Standard for the Protection of Records*, 2017 2022 edition.

NFPA 241, *Standard for Safeguarding Construction, Alteration, and Demolition Operations*, 2019 2022 edition.

NFPA 259, *Standard Test Method for Potential Heat of Building Materials*, 2018 2023 edition.

NFPA 601, *Standard for Security Services in Fire Loss Prevention*, 2020 edition.

NFPA 801, *Standard for Fire Protection for Facilities Handling Radioactive Materials*, 2020 2025 edition.

NFPA 806, *Performance-Based Standard for Fire Protection for Advanced Nuclear Reactor Electric Generating Plants Change Process*, 2020 2025 edition.

NFPA 850 , *Recommended Practice for Fire Protection for Electric Generating Plants and High Voltage Direct Current Converter Stations* , 2025 edition.

~~NFPA 1221 , *Standard for the Installation, Maintenance, and Use of Emergency Services Communications Systems* , 2019 edition.~~

NFPA 1225 , *Standard for Emergency Services Communications* , 2022 edition.

NFPA 1962, *Standard for the Care, Use, Inspection, Service Testing, and Replacement of Fire Hose, Couplings, Nozzles, and Fire Hose Appliances*, 2018 edition.

Submitter Information Verification

Committee: FIF-AAA

Submittal Date: Tue Jun 06 13:42:32 EDT 2023

Committee Statement

Committee Statement: Update references to latest current publications. NFPA 16 has been removed since it was consolidated into NFPA 11 (which was also added). NFPA 16 and NFPA 1221 have been removed since they were consolidated into NFPA 11 and NFPA 1225 (which were added to the list), respectively.

Response Message: FR-26-NFPA 804-2023



First Revision No. 25-NFPA 804-2023 [Section No. C.1.2]

C.1.2 Other Publications.

C.1.2.1 ANS Publications.

American Nuclear Society, 555 North Kensington Avenue, La Grange Park, IL 60526.

ANS 59.4, *Generic Requirements for Light Water Nuclear Power Plant Fire Protection*, 1979 edition.

C.1.2.2 ASTM Publications.

ASTM International, 100 Barr Harbor Drive, P.O. Box C700, West Conshohocken, PA 19428-2959.

ASTM E108, *Standard Test Methods for Fire Tests of Roof Coverings*, 2020a.

ASTM E119, *Standard Test Methods for Fire Tests of Building Construction and Materials*, 2012 2022.

C.1.2.3 EPRI Publications.

Electric Power Research Institute, 3420 Hillview Avenue, Palo Alto, CA 94304.

EPRI Research Report 1843-2 NP-4144, "Turbine Generator Fire Protection by Sprinkler System," July 1985.

C.1.2.4 FM Publications.

FM Global, 270 Central Avenue, P.O. Box 7500, Johnston, RI 02919-4949.

FM Approval 4470, *Single-Ply, Polymer-Modified Bitumen Sheet, Built-Up Roof (BUR) and Liquid Applied Roof Assemblies for Use in Class 1 and Noncombustible Roof Deck Construction*, 2016.

C.1.2.5 IEEE Publications.

IEEE, ~~Three Park Avenue~~, 17th Floor, New York, NY 10016-5997 Operations Center, 445 Hoes Lane, Piscataway, NJ 08854-4141.

ANSI/IEEE C2, *National Electrical Safety Code*®, 2012 2023 edition.

IEEE 484, *Recommended Practice for Installation Design and Installation of Large Lead Batteries for Generating Stations and Substations*, 2002 edition.

C.1.2.6 UL Publications.

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

UL 790, *Test Methods for Fire Tests of Roof Coverings*, 2022.

C.1.2.7 US Government Publications.

US Government Publishing Office, 732 North Capitol Street, NW, Washington, DC 20401-0001.

Title 10, Code of Federal Regulations, Part 100, "Reactor Site Criteria."

NRC Generic Letter 88-20, Supplement 4, "Sandia Risk Scoping Items."

Submitter Information Verification

Committee: FIF-AAA

Submission Date: Tue Jun 06 13:40:36 EDT 2023

Committee Statement

Committee Statement: Update to most current publication references. FM Approval 4470 and UL 790 have been added due to action taken by the committee with FR-13.

Response Message: FR-25-NFPA 804-2023

[Public Input No. 18-NFPA 804-2022 \[Section No. C.1.2.2\]](#)



First Revision No. 9-NFPA 804-2023 [Section No. C.3]

C.3 References for Extracts in Informational Sections.

~~NFPA 101[®], Life Safety Code[®], 2018 edition.~~

NFPA 805, Performance-Based Standard for Fire Protection for Light Water Reactor Electric Generating Plants, 2020 edition.

NFPA 5000[®], Building Construction and Safety Code[®], 2024 edition.

Submitter Information Verification

Committee: FIF-AAA

Submittal Date: Mon Jun 05 09:13:00 EDT 2023

Committee Statement

Committee Statement: See action taken on section 8.3.4, where the committee updated NFPA 101 extracts to NFPA 5000 which is the source document for the language.

Response Message: FR-9-NFPA 804-2023