

**DELETED****First Revision No. 1-NFPA 551-2025 [Section No. 4.4.1.1]****4.4.1.1**

The purpose of conducting the FRA should be identified and documented. The purpose might be to identify the level of risk present in an existing building or facility, ~~to identify methods of lowering the risk in an existing building or facility, or to identify methods of providing a level of risk deemed acceptable in a new or renovated building or facility.~~ The objectives of the FRA might be associated with the risk to life (~~occupants or fire fighters~~ e.g., occupants, general public, emergency responders, and firefighters), ~~the risk to property, the risk to operations ; property; operations~~ (e.g., cost of business interruption), ~~the risk to ; the environment, or the risk of loss of cultural resources.~~ Fire safety objectives and the appropriate performance, which are generally based on the building's characteristics and functions as well as the owner's fire safety expectations over a specific period of time or throughout the design life of the building, should be clearly stated for new and existing construction.

Submitter Information Verification**Committee:** FIR-AAA**Submittal Date:** Tue Mar 18 11:40:21 EDT 2025**Committee Statement**

Committee Statement: Occupants and firefighters is too limiting, the change helps include others that may be affected by an incident. The "e.g." was added to clarify that the list is not exhaustive. The "or" was changed to "and", these different types of people could be in or near the building at the same time. Employees would be a part of occupants.

Response Message: FR-1-NFPA 551-2025

[Public Input No. 1-NFPA 551-2023 \[Section No. 4.4.1.1\]](#)



First Revision No. 6-NFPA 551-2025 [Section No. 4.4.2.1]

4.4.2.1

The exposed target at risk should be identified. This may include any or all of the following:

- (1) People (occupants, ~~employees,~~ general public, emergency responders, firefighters)
- (2) Property (structures, systems, components of the built environment)
- (3) Environment (national parks, monuments, hazardous materials)
- (4) Mission (heritage, business continuity, information/communication)

Submitter Information Verification

Committee: FIR-AAA

Submittal Date: Tue Mar 18 12:38:13 EDT 2025

Committee Statement

Committee Statement: The changes made create consistency with other changes made. See FR-1 and FR-3.

Response Message: FR-6-NFPA 551-2025



First Revision No. 2-NFPA 551-2025 [Section No. 5.1.3.4]

5.1.3.4 Regulatory Considerations.

Government regulations may require certain FRA methods. For example, there are regulations with maximum allowable risks for certain types of special hazard facilities, such as nuclear power plants, liquefied natural gas (LNG) import terminals facilities , and processing facilities with combustible dust hazards or more than a threshold amount of certain flammable gases and vapors. These regulations delineate the types of risk measures to be evaluated and often describe the type of method to be used for the evaluation.

Submitter Information Verification

Committee: FIR-AAA

Submittal Date: Tue Mar 18 11:53:25 EDT 2025

Committee Statement

Committee Statement: NFPA standards and regulatory requirements are not limited to just LNG import terminals, but encompass all types of LNG facilities, including LNG import terminals, LNG export terminals, LNG peak-shaving plants, LNG storage facilities, LNG satellite facilities, etc.

Response Message: FR-2-NFPA 551-2025

[Public Input No. 2-NFPA 551-2023 \[Section No. 5.1.3.4\]](#)



First Revision No. 9-NFPA 551-2025 [Section No. 5.2.5]

5.2.5 Risk Matrix.

A risk matrix utilizes probability levels and severity categories to represent the axis of a two-dimensional risk matrix. The matrix indicates that improbable hazards with negligible consequences represent a low risk and that frequently occurring hazards with greater consequences represent high-risk levels.

A.5.2.5

The risk matrix method was developed in the 1960s as a systems safety technique for military systems and is presently documented as MIL-STD-882E. In this approach, each hazard is assigned a probability level and a severity category. Table A.5.2.5(a) and Table A.5.2.5(b) are adapted from corresponding tables in MIL-STD-882E.

A risk matrix utilizes the probability levels and severity categories to represent the axis of a two-dimensional risk matrix such as shown in Figure A.5.2.5.

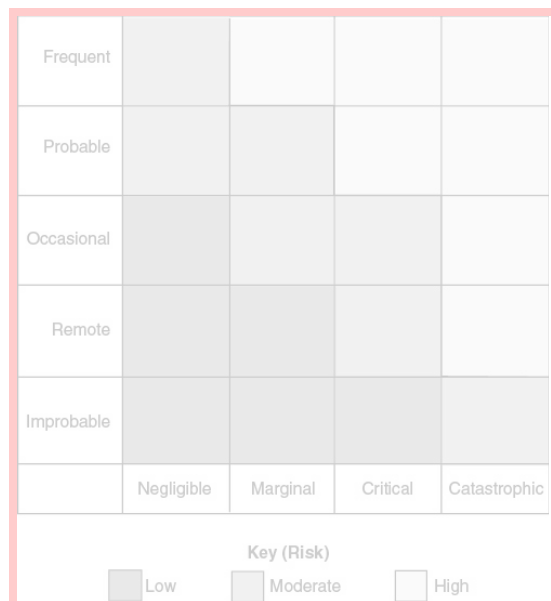
Table A.5.2.5(a) Probability Levels

Probability	Description
Frequent	Likely to occur frequently, experienced ($p > 0.1$)
Probable	Will occur several times during system life ($p > 0.001$)
Occasional	Unlikely to occur in a given system operation ($p > 10^{-6}$)
Remote	So improbable, may be assumed this hazard will not be experienced ($p < 10^{-6}$)
Improbable	Probability of occurrence not distinguishable from zero ($p \sim 0.0$)

Table A.5.2.5(b) Severity Categories

Severity	Impact
Negligible	The impact of loss will be so minor that it would have no discernible effect on the facility, its operations, or the environment.
Marginal	The loss will have an impact on the facility, which may have to suspend some operations briefly. Some monetary investments may be necessary to restore the facility to full operations. Minor personal injury may be involved. The fire could cause localized environmental damage.
Critical	The loss will have a high impact on the facility, which may have to suspend operations. Significant monetary investments may be necessary to restore to full operations. Personal injury and possibly deaths may be involved. The fire could cause significant reversible environmental damage.
Catastrophic	The fire will produce death or multiple deaths or injuries, or the impact on operations will be disastrous, resulting in long-term or permanent closing. The facility would cease to operate immediately after the fire occurred. The fire could cause significant irreversible environmental damage.

Figure A.5.2.5 Risk Matrix.



Submitter Information Verification

Committee: FIR-AAA

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Committee Statement

Committee Statement: Having a specific matrix that is provided in the annex may present a bias. Industries have specific risk matrices that are specific to that industry and a general example here may not provide clarifying information. The Military specification that is referenced has changed and it did not maintain consistency with evolving industry specific changes.

Response Message: FR-9-NFPA 551-2025

[Public Input No. 5-NFPA 551-2023 \[Section No. A.5.2.5\]](#)



First Revision No. 3-NFPA 551-2025 [Section No. 7.2.2.3]

7.2.2.3* Project Goals.

Fire safety goals should be clearly stated. The goals of the FRA may be associated with the risk to life (~~occupants or fire fighters~~ e.g., those of occupants, the general public, emergency responders, and firefighters), ~~the risk to property, the risk to operations, or the risk to the~~ ; property; operations; or the environment. (See 4.4.2.)

Submitter Information Verification

Committee: FIR-AAA

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Committee Statement

Committee Statement: This change creates consistency with existing text in other provisions of the guide. See FR-1.

Response Message: FR-3-NFPA 551-2025

[Public Input No. 3-NFPA 551-2023 \[Section No. 7.2.2.3\]](#)



First Revision No. 4-NFPA 551-2025 [Section No. A.4.4.3.4]

A.4.4.3.4

Depending on the stakeholder, one or more of the following items may receive focus in the acceptance criteria:

- (1) ~~Human losses~~ Injuries or loss of human life
- (2) Environmental damage
- (3) Property damage
- (4) Business interruption
- (5) Risk control program implementation costs
- (6) Loss of image
- (7) Loss of community confidence
- (8) Loss of structures and objects with heritage significance

Submitter Information Verification

Committee: FIR-AAA

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Committee Statement

Committee Statement: Criteria for human impacts can span from fatalities to various specified levels of injury. Adjusted the statement for better clarity and removed the examples as the examples were not needed. The other items did not have examples, removing the proposed examples creates consistency within the list.

Response Message: FR-4-NFPA 551-2025

Public Input No. 4-NFPA 551-2023 [Section No. A.4.4.3.4]



First Revision No. 8-NFPA 551-2025 [Section No. B.1]

B.1 Referenced Publications.

The documents or portions thereof listed in this annex are referenced within the informational sections of this guide and are not advisory in nature unless also listed in Chapter 2 for other reasons.

B.1.1 NFPA Publications.

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

NFPA Fire Incident Data Organization (FIDO).

NFPA Survey of Fire Departments.

B.1.2 FEMA/USFA Database.

~~U.S.~~ US Fire Administration, 16825 South Seton Avenue, Emmitsburg, MD 21727.

FEMA/USFA National Fire Incident Reporting System (NFIRS).

B.1.3 SFPE Publications.

Society of Fire Protection Engineers, 9711 Washingtonian Blvd., Suite 380, Gaithersburg, MD 20878.

"Guidelines for Peer Review in the Fire Protection Design Process," ~~2002, revised October 2009~~ 2020.

"Guidelines for Substantiating a Fire Model for a Given Application," 2011.

SFPE Engineering Guide to Fire Risk Assessment, 2006.

SFPE Engineering Guide to Performance-Based Fire Protection, 2nd edition, ~~2007~~ 2020.

SFPE Guide to Predicting Room of Origin Fire Hazards, 2007.

SFPE Handbook of Fire Protection Engineering, 5th edition, 2016.

B.1.4 ~~US Government Publications.~~

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

~~MIL-STD-882E, *Standard Practice for System Safety*, US Department of Defense, 11 May 2012.~~

B.1.4 Other Publications.

www.firemodelsurvey.com. Combustion Science & Engineering, Inc., 8940 Old Annapolis Road, Suite L, Columbia, MD 21045.

Kaplan, S., and B. J. Garrick. 1981. "On the Qualitative Definition of Risk." *Risk Analysis*, 28(1), 11-27.

M. and Hall, J. R. Jr., "Data for Engineering Analysis," *SFPE Handbook of Fire Protection Engineering*, 5th edition, Chapter 78.

Supplemental Information

<u>File Name</u>	<u>Description</u>	<u>Approved</u>
551_FR-8_Section_B.1.docx		

Submitter Information Verification

Committee: FIR-AAA

Submittal Date: Thu Mar 20 10:21:19 EDT 2025

Committee Statement

Committee Statement: Updated edition years and removed the Military Standard as the annex material has been deleted.

Response Message: FR-8-NFPA 551-2025