

Fire Cause Classifications Removed from NFPA 921, 2021 Edition (Part I)

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1. Introduction¹

The 2021 edition of *NFPA 921 Guide for Fire and Explosion Investigations* (NFPA 921) is almost finished and will be issued in late 2020. In this article we will first briefly recap the steps that have been completed to develop NFPA 921, 2021 ed., which is an open process that encourages involvement of any interested party. We also direct you to the [NFPA 921 Document Information Page, Next Edition tab](#),² where the content of the 2021 edition and underlying information about the revisions are available for free access.

The main purpose of this article is to pique your interest in the 2021 edition by reviewing one of its many changes. Dating back to its first edition in 1992, NFPA 921 has included a four-category system for classifying fire causes. In the current (2017) edition, Chapter 20 "Classification of Fire Cause," states that "the cause of a fire may be classified as accidental, natural, incendiary, or undetermined."³ These classifications, in place since the 1992 edition, have been removed in the 2021 edition. In their place, NFPA 921 points to examples of other national classification systems that are available for incident reporting of fires and explosions. In other words, NFPA 921 will no longer offer fire cause classifications in the 2021 edition.

This article is published in two parts. Part I summarizes the history of this classification system and some of its problems. It explains the distinction between "incident reporting," which includes coding fire cause data for classification purposes, and "investigation reports," which apply the scientific method for determining fire cause. Finally, Part I explains the reasons that NFPA 921 was revised in the 2017 edition to state that the completion of NIFRS incident reports are outside the scope of NFPA 921. This revision, made to accommodate the public sector, became a significant factor in the decision to delete Chapter 20 in the 2021 edition.

Part II of this article provides the background leading up to the decision by the Technical Committee responsible for NFPA 921 (NFPA 921 TC) to remove fire cause classifications from NFPA 921. We also cite revisions in other chapters in the 2021 edition related to the deletion of Chapter 20. Finally, we touch on some of the implications of this change.

2. Overview of Steps in the Development of NFPA 921, 2021 Edition

The 2021 edition of NFPA 921 has followed the NFPA's

Standards Development Process,⁴ which encourages public participation in the revision of all of its standards⁵ including NFPA 921. In a nutshell, the new edition has proceeded through the necessary steps in this process,⁶ as follows:

- The new edition was open for Public Inputs from when the 2017 edition was published until mid-2018 when the Public Input period closed.
- In late 2018 the NFPA 921 TC met twice to consider all Public Inputs, provide a response to each one and prepare First Revisions for the new edition. The TC also composed a TC Statement to substantiate each revision.
- The NFPA 921 TC was balloted on the First Revisions. All First Revisions that received a two-thirds majority vote on the ballot were included as First Revisions in the First Draft Report.
- In June 2019, the First Draft Report was posted publicly on the [www.NFPA.org](#) website, opening the period for review and Public Comments. The First Draft Report is available on the [NFPA 921 Document Information Page \(Next Edition tab\)](#).⁷ It contains the legislative text showing changes each First Revision makes to NFPA 921, 2017 ed. Also available in the report are all of the Public Inputs received from interested persons, the TC Statements responding to Public Inputs and providing substantiation for each revision, ballot results, and any comments submitted by TC members on their ballots.
- After the Second Draft Report was posted, Public Comments were received, addressing revisions in the First Draft. The Public Comment period provided an opportunity for anyone who wanted to raise objections or submit changes to the text of the revisions in the First Draft.
- The NFPA 921 TC met again in October 2019 to review and respond to all Public Comments and prepare Second Revisions for the new edition.
- Following the Second Draft meeting, the TC was balloted on the Second Revisions. Like the procedure in the First Draft stage, all Second Revisions that received a two-thirds majority vote on the ballot were included as Second Revisions in the Second Draft Report.
- The Second Draft Report was then posted on the

[NFPA 921 Document Information Page, Next Edition tab](#).⁸ This report is available online and is comprised of: a) legislative text showing how the Second Revisions change the First Draft of the new edition, b) Public Comments and the TC's actions on each one, c) TC Statements, and; d) ballot results together with any comments submitted by TC members on their ballots.

- After the posting of the Second Draft Report, there is a process called a "Notice of Intent to Make a Motion" (NITMAM) available to anyone not satisfied with the work of the TC and who qualifies pursuant to the NFPA regulations. A NITMAM is notice of a motion a person plans to make in an effort to change the results of the TC's work as published in the Second Draft. The intent is to have the motion heard by the NFPA Membership at the annual NFPA Technical Meeting.
- No NITMAMs were filed by the March 11, 2020 deadline, meaning that none of the changes proposed in the Second Draft were challenged. Thus, according to the NFPA regulations, the new edition will be sent directly to the NFPA Standards Council to be issued as a "Consent Standard" once work by the NFPA editorial staff has been completed later this year.

In summary, after hundreds of contributions from members of the public and years of work by the TC, NFPA 921, 2021 ed. is nearing completion. You can see what the new edition will look like by reviewing the Second Draft available online in the [NFPA 921 Document Information Page, Next Edition tab](#).⁹ To fully understand the evolution of the 2021 edition, including the substantiation for the revisions as well as all of the public's submissions, review both the First Draft Report and the Second Draft Report. To access these reports, you will need to create a free NFPA account and sign in.

The remaining sections of this article will focus on revisions to NFPA 921 relating to the TC's decision to delete Chapter 20 "Classification of Fire Cause."

3. History of Fire Cause Classifications and Related Provisions in NFPA 921

There are three related concepts that help to understand the role of fire cause classifications in NFPA 921. Below we briefly highlight the progression of each of these concepts from their inception to NFPA 921, 2017 edition.

3.1. Fire Cause Determination

The first concept is "fire cause determination." In the 1992 ed. "fire cause" was defined as, "The circumstances or agencies that bring a fuel and an ignition source together with proper air or oxygen."¹⁰ Chapter 12 "Cause Determination" was merely two pages. This chapter contained only four sections directly relating to fire cause including: a) a general section discussing the circumstances and factors that are necessary for a fire to have occurred, b) the source and form of heat of ignition, c) the first material ignited, and; d) the ignition factor (cause).¹¹

By the time the 2017 edition was produced, the scientific understanding of fire cause had evolved, and the cause determination chapter had been revised many times. In NFPA 921, 2017 ed., Chapter 19 "Fire Cause Determination" has grown to five and a half pages and recommends the use of the scientific method for

determining the cause of a fire. Cause determination is now more clearly defined, calling for the investigator to identify factors that include: a) the presence of a competent ignition source, b) the type and form of first material ignited, c) the oxidizing agent, d) the ignition sequence; and, e) the circumstances that allowed these factors to come together and start a fire.¹²

Fire cause determination is to be distinguished from a second concept — classifying the cause of a fire — which we examine next.

3.2. Classification of Fire Cause

In its short two pages, the 1992 ed. "Fire Cause" chapter included section 12-2 "Classification of Fire Cause." That section stated, "The cause of a fire may be classified as accidental, natural, incendiary (arson), or undetermined."¹³ Subsections defined these four classifications, providing brief examples of each.

This four-category classification system has persisted through to the 2017 ed. Revisions were made over time in an effort to clarify the application of each classification. In the 2014 edition "Classification of Fire Cause" was moved into its own chapter, where it remained in later editions, retaining the same four-category classification system that dates back to 1992.¹⁴

The third of the concepts associated with, but distinct from fire cause determination and fire cause classification is known by the heading, "Analyzing the Incident for Cause and Responsibility."

3.3. Analyzing the Incident for Cause and Responsibility

"Analyzing the Incident for Cause and Responsibility" (the subject of Chapter 21 in NFPA 921, 2017 ed.) first appeared in NFPA 921, 1998 ed. It was initially conceived in an effort to remove the four-category fire cause classification system and recognized that an investigator's task might be much broader than determining just the "cause" of an incident. This concept grouped the unwanted outcomes of a fire incident under four headings, or features:

- (1) The cause of the fire or explosion.
- (2) The cause of damage to property resulting from the incident.
- (3) The cause of bodily injury or loss of life.
- (4) The degree to which human fault contributed to any one or more of the causal issues described in (1), (2), or (3), above.¹⁵

The above list of significant causal features of a fire or explosion was the result of a public proposal submitted to the NFPA in 1996 by one of the authors of this column. The proposal was the first challenge to NFPA 921's four-category classification system.¹⁶ It recommended deleting NFPA 921's classification system and to include instead a description of the features of a fire or explosion incident for the purposes of determining responsibility for a fire (its cause, spread, damage, or injuries). Further, rather than incorporating fire cause classifications in NFPA 921, the proposal encouraged fire investigators to employ the classification system in NFPA 901 *Standard Classifications for Incident Reporting and Fire Protection Data* to classify fire incidents.

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This proposal was accepted in principle¹⁷ and implemented in NFPA 921, 1998 ed.¹⁸ While the TC declined to delete NFPA 921's existing classification system, it added new text to the introductory section of the "Cause Determination" chapter to describe the significant features of a particular fire or explosion incident.¹⁹ This revision ultimately gave rise to a new chapter in NFPA 921 2004 ed. entitled "Analyzing the Incident for Cause and Responsibility." This chapter originally included a section on "Classification of the Cause," which as mentioned above, was separated into its own chapter ten years later.

Thus, by the time NFPA 921 2017 ed. was published, the above three interrelated concepts had taken root in NFPA 921 and evolved over time.

4. Overview of Problems with the Classification System

While the NFPA 921 TC has fine-tuned the language of the classification system over the last 20 years, it continues to be problematic. Below are the definitions of the four classifications followed by scenarios that endeavor to apply the first three. As you read these definitions, remember that what Chapter 20 of NFPA 921, 2017 ed. purports to classify is "fire cause."

"Accidental Fire Cause Classification." Accidental fires involve all those for which the proven cause does not involve an intentional human act to ignite or spread fire into an area where the fire should not be.²⁰ *Note that the investigator must decide of whether an intentional human act is involved. Also, this classification goes beyond fire cause and addresses intentional human action to spread the fire.*

"Natural Fire Cause Classification." Natural fire causes involve fires caused without direct human intervention or action, such as fires resulting from lightning, earthquake, wind, and flood.²¹

"Incendiary Fire Cause Classification." An incendiary fire is a fire that is intentionally ignited in an area or under circumstances where and when there should not be a fire.²² *Note that central to the application of this classification are a determination of an intentional ignition by someone and a judgment about where and when there should not be a fire.*

"Undetermined Fire Cause." Whenever the cause cannot be proven to an acceptable level of certainty, the proper classification is undetermined.²³

Studying the first three definitions, several issues are readily apparent. First, the application of the classifications can be ambiguous when applied to particular circumstances. Second, while the classifications purport to apply to "fire cause," they go beyond the definition of fire cause (defined as "the circumstances, conditions, or agencies that bring together a fuel, ignition source, and oxidizer resulting in a fire or combustion explosion")²⁴. The definitions instead contemplate factors such as fire spread and the existence of rules as to when and where there should or should not be a fire. Third, although NFPA 921 describes the scientific methodology for determining fire cause, it does not provide a scientific methodology for determining human intent. Yet, determining the intent of those involved with the fire is an integral part of this classification system.

Following are several scenarios. Imagine each one becomes the subject of civil or criminal litigation. Assume a lawyer is

taking the investigator to task over the classification assigned in each scenario. Can you see where the classification system may cloud the issues, even where the investigator makes a solid case that the fire cause is determined based on other chapters of NFPA 921 such as "Origin Determination" and "Fire Cause Determination"?

The first scenario: what is the classification when a fireplace overloaded with combustibles is ignited and the fire spills out causing damage to the building that housed the fireplace? Assume the cause is determined (a match held to a piece of crumpled newspaper in the presence of sufficient oxygen to allow ignition). But, based on the classifications available, is the *determination* of fire cause enough to *classify* the fire cause using this classification system? Here, the damage causing civil or criminal liability arises from the fire spread, not the fire cause. Notwithstanding its label, "accidental fire cause classification" goes beyond "fire cause" and requires a determination of what was in the mind of those involved, as well as the factors causing the fire to spread.

Next, consider whether the above scenario should be classified as an incendiary fire "cause." There does not appear to be anything inherently wrong with lighting a fire in a fireplace. That is what fireplaces are designed for. However, to classify this example as an "incendiary fire cause classification," the central factor is fire spread, not fire cause — whether the person's intent was to facilitate the spread of the fire beyond the hearth. It is confusing to label a classification using the word "cause" when cause is not the seminal factor.

But what if you could look in the mind of those involved. Assume the person who loaded the fireplace and lit the fire was somehow impaired or ill-informed about the likely consequences? Is this sufficient for an incendiary fire cause classification? What if the person who ignited the fire walked away and another person failed to take action to prevent the fire's spread once it escaped the hearth? Are the circumstances of either situation sufficient to assign an incendiary fire cause classification (after all, the cause of the fire has not changed in any of these scenarios).

These analyses suggest that the classifications of accidental fire cause and incendiary fire cause arguably conflate fire cause with fire spread. Further, an investigator would have to determine the intent of the person who ignited the fire and the person who loaded the fireplace. NFPA 921 provides no scientific methodology to determine human intent.

Consider another scenario. If a person intentionally disables lightning protection equipment and a lightning-caused fire occurs, should this be an accidental, natural, or incendiary fire cause classification? By definition, a "natural fire cause classification" "involve fires caused without direct human intervention or action." In this scenario the fire is "caused" by lightning, so arguably it should be a natural fire cause classification because the fault of the person involved relates to fire prevention, not fire cause (as defined by NFPA 921). Would the classification change if the investigator could prove the person who disabled the lightning rod benefitted from the fire? What if the fire started in a lightning-prone area of the country? In either case the fire cause has not changed so should the classification change?

What if a person strikes a match, lighting a cigarette in a strictly "no-smoking" building, and either the match or the cigarette

causes a fire? The smoker knows the no-smoking rule and deliberately disobeys it. The striking of the match to light a cigarette appears to meet the definition of an incendiary fire cause because the person is "intentionally igniting" a fire "in an area or under circumstances" where there should not be a fire, since there is a strict no-smoking rule. Is the proper classification incendiary or accidental fire cause?

As one of the submitters of a Public Input for the new edition points out, even the example given in Chapter 20 of an accidental fire cause classification is confusing (a wind gust spreading a trash fire beyond its container). Such a situation might better be classified as natural (caused by wind). So, even the simple example provided by NFPA 921, 2017 ed. of an accidental fire cause classification is ambiguous.

While no classification system is perfect, NFPA 921's four-category system is arguably too simplistic. The incendiary and accidental fire cause classifications require the investigator to meld factors such as fire cause, spread, and human intent under a single classification. Other classification systems better reflect the complexity of the factors that contribute to fire cause, property damage, casualties, or human involvement.

5. Classifying Fire Cause Where the Ignition Source is Unknown

Three Public Inputs by Captain Steven Avato identified another problem — an internal inconsistency within Chapter 20 concerning the classification of incendiary vs. accidental fire causes. Subsection 20.1.4 provides that if the fire cause "cannot be proven to an acceptable level of certainty," it should be classified as "undetermined."²⁷ However, an exception is made for the incendiary fire cause classification. Subsection 20.1.4(B) provides:

In the instance in which the investigator fails to identify the ignition source, the fire need not always be classified as undetermined. For example, if the evidence establishes one factor, such as the use of an accelerant, that evidence may be sufficient to establish an incendiary fire cause classification even where other factors, such as ignition source, cannot be identified.²⁸

In recommending additional text be added in Chapter 20 that would permit an investigator to classify the fire cause as accidental if all reasonable fire causes would fall into that category, even if the exact cause was undetermined, Captain Avato provided the following explanation:

Investigators often conflate the process of classification and cause - partly because this [NFPA 921] document also seems to conflate the issues. When all reasonable, potential fire causes would fall into the "Accidental" classification, the investigator should be allowed to classify the fire as "Accidental" even if the exact "Cause" cannot be specifically defined. For example, a fire occurs in a copying machine in an unattended office. There [are] no plausible incendiary scenarios. The investigator cannot reliably describe whether a circuit board failed and ignited surrounding material or the platen caused the ignition; while the cause may be "Undetermined," the classification should clearly be "Accidental". With the current wording many investigators would classify the fire as "Undetermined".²⁹

In noting that the changes he proposed recognize that classification and cause are separate processes, Captain

Avato went on to observe the significance of this proposal for the public sector:

This is especially important for public sector investigators whose agencies may not allow the investigator to "close" an undetermined fire classification. Investigations where all possible causes are accidental would be allowed to be closed with the classification of "Accidental" rather than "Undetermined" if the exact ignition scenario could not be demonstrated. Some agencies even restrict public access to reports of fires classified as "Undetermined" or "Incendiary" — this proposal should reduce the number of improperly classified fires and allow for more information sharing between the public and private sector.³⁰

The broader issue — *i.e.* considering the impact particular revisions will have on the public sector — has been a recurring theme in each revision cycle of NFPA 921. The NFPA 921 TC is sensitive to this issue and the public sector is well-represented in the TC's membership. By way of example, and as described in the next section of this article, a revision to the "Scope" of NFPA 921 in the 2017 edition was a direct response to a plea from the public sector concerning incident reporting, which encompasses classification. This revised NFPA 921 scope statement had a direct bearing on the fate of Chapter 20, so we address it next.

6. Incident Reporting vs. Investigation Reports

Some of the Public Inputs that submitted changes to Chapter 20³¹ noted that "classifying" a fire cause (as compared with "determining" a fire cause) is not necessarily a required responsibility of all fire investigators. The process of cause determination and cause classification may fall to different people.

The distinction between a) classifying a fire for the purposes of incident reporting, and b) preparing an investigation report after investigating or analyzing a fire incident, was the subject of an important change in NFPA 921's 2017 edition. This distinction was drawn in response to concerns raised in Public Inputs and Public Comments received in the 2017 edition revision cycle stemming from a 2014 report prepared by the National Association of State Fire Marshals (NASFM) Fire Research Education Foundation. The main focus of this report is aptly captured in its title, *Conquering the "Unknowns" Research and Recommendations on the Chronic Problem of Undetermined and Missing Data in the Casual Factors Sections of the National Fire Incident Reporting System*.³² The report revealed that fire cause data is being underreported to the National Fire Incident Reporting System (NIFRS).

In the report summary, the authors noted that one of the main factors that had affected whether fire cause data was reported in NIFRS was a "Litigation Cloud" attributed to NFPA 921:

Departments were reluctant to specify causal information in the incident report due to fear of being contradicted by more experienced investigators or challenged in court. We refer to this as the "Litigation Cloud" that seems to hang over fire department decisions about whether to report causal factors.³³

The "Litigation Cloud" arose largely because of concerns that the recommendations in NFPA 921 set a benchmark that fire department members responsible for incident reporting could not reasonably achieve. As a consequence, they enter "undetermined" or "unknown" as a fire cause rather than risk

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being called to court to testify, even when they have enough data to ascertain the causal factors of an incident.³⁴

In response, the NFPA 921 TC revised the guide's "Scope" in Chapter 1. The scope of each of NFPA's standards,³⁵ including the NFPA 921 Guide, is very important and is governed by the *Manual of Style for NFPA Technical Committee Documents* (the MOS).³⁶ The MOS provides that the scope of the document must be within the scope of the TC's work as approved by the NFPA Standards Council. Further, the document's scope "shall describe in general terms what the document covers and shall include sufficient details to indicate the range or limits of what is covered."³⁸ In other words, the content of NFPA 921 is governed by its scope statement.

In revising NFPA 921's scope, two new subsections were added in the 2017 edition in an effort to lift the "litigation cloud" from fire department members classifying fire causes in NIFRS incident reports. Subsection 1.1.1 states, "The completion of reports for . . . NFIRS are outside the scope of this guide."³⁹ Subsection 1.1.2 goes on to say that NFIRS reports are incident reports and distinguishable from fire investigation reports, (inferring that the latter are covered by NFPA 921).⁴⁰

NFIRS is a fire classification system. If completing NFIRS incident reports that classify fire incidents are outside the scope of NFPA 921, what about other incident reports that classify fires, such as those contemplated by Chapter 20? As we will see in the following sections of this article, this becomes a prominent issue in the ultimate decision to remove Chapter 20 from NFPA 921.

Although the NFPA 921 TC has the authority to change the scope as set forth in Chapter 1 of NFPA 921 (subject to the MOS rules outlined above), there were no revisions made to the above provisions in this revision cycle, therefore these subsections will remain in the 2021 edition.

7. Conclusion to Part I

To this point, we have covered the steps in the NFPA Standards Development Process that NFPA 921 has completed, which will bring the 2021 edition to completion later in 2020. We have directed you to the [NFPA 921 Document Information Page, Next Edition tab](#),⁴¹ where the content of the 2021 edition and complete underlying information about all of the revisions are available for free access.

Part I, above, also describes the four-category system for classifying fire causes (accidental, natural, incendiary, or undetermined),⁴² which has been in the document for many years. The history of this system is addressed, as well as some of its problems. At the end of this Part, the important distinction between incident reporting (which involves fire cause classification) and investigation reporting is addressed.

In Part II of this article, we will continue to highlight the considerations that went into the NFPA 921 TC's decision to delete Chapter 20, "Classification of Fire Cause" from the 2021 edition, as well as discuss some of the implications of this change.

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¹ Disclaimer: To the extent that this article contains opinions, they are the opinions of the authors and not of the International Ass'n of Fire Investigators (IAAI), the IAAI Fire Investigation Standards Committee (FISC), or the National Fire Protection Association.

² NFPA Codes & Standards/ All codes & standards/ List of NFPA codes & standards/ NFPA 921, NAT'L FIRE PROT. ASS'N (2020), <https://www.nfpa.org/codes-and-standards/all-codes-and-standards/list-of-codes-and-standards/detail?code=921&tab=nextedition>.

³ Nat'l Fire Prot. Ass'n Technical Comm. on Fire Investigations, NFPA 921 Guide for Fire and Explosion Investigations [hereinafter NFPA 921] (2017 ed.), sec. 20.1. We use the short form, "NFPA 921" when referring generally to this document, in whatever edition is applicable in the context. When referring to a specific edition of NFPA 921, the edition is also cited.

⁴ For more information on the NFPA Standards Development Process, see the webpage: How the NFPA standards development process works, NAT'L FIRE PROT. ASS'N (2020), <https://www.nfpa.org/Codes-and-Standards/Standards-development-process/How-the-process-works>.

⁵ In this context, we are using the term "standards" generically. When used in a generic sense, NFPA 921, 2017 ed., s. 3.2.5 states that the term "standards" includes all NFPA Standards, including Codes, Standards, Recommended Practices, and Guides.

⁶ These steps as taken with respect to NFPA 921, 2021 edition are summarized from the booklet available from NFPA.org: NAT'L FIRE PROT. ASS'N, An Introduction to the NFPA Standards Development Process, (2018) available at https://www.nfpa.org/-/media/Files/Codes-and-standards/Regulations-directory-and-forms/Stds_Dev_Process_Booklet_2018.ashx.

⁷ NFPA 921 Document Information Page, Next Edition tab, supra note 2.

⁸ NFPA 921 Document Information Page, Next Edition tab, supra note 2.

⁹ NFPA 921 Document Information Page, Next Edition

tab, supra note 2.

¹⁰ NFPA 921 (1992 ed.) sec. 1-3.

¹¹ NFPA 921 (1992 ed.) ch. 12, secs. 12-1, 12-3, 12-4, & 12-5.

¹² NFPA 921 (2017 ed.) ch. 19, sec. 19-1.

¹³ NFPA 921 (1992 ed.), sec. 12-2.

¹⁴ NFPA 921 (2014 ed.), ch. 20.

¹⁵ NFPA 921, 2017 ed., subsec. 21.1.1 (1), (2), (3), & (4).

¹⁶ Hewitt, Terry-Dawn, Public Proposal Log # 262, published in Nat'l Fire Prot. Ass'n Technical Comm. on Fire Investigations, Report of the Committee on Fire Investigations, F1997 Report on Proposals (ROP), at pp. 414-415, available at NFPA 921 Document Information Page, Archived Revision Information for NFPA 921 1998 ed. <https://www.nfpa.org/codes-and-standards/all-codes-and-standards/list-of-codes-and-standards/detail?code=921&year=1998>.

¹⁷ Id.

¹⁸ NFPA 921 (1998 ed.), sec. 12-1.

¹⁹ NFPA 921 (1998 ed.), sec. 12-1.

²⁰ NFPA 921, 2017 ed., subsec. 20.1.1.

²¹ NFPA 921, 2017 ed., subsec. 20.1.2.

²² NFPA 921, 2017 ed., subsec. 20.1.3, as revised by TIA 17-1 issued August 17, 2017. The Tentative Interim Amendment (TIA) brings the definition in subsec. 20.1.3 into conformity to the definition in subsec. 3.3.116.

²³ NFPA 921, 2017 ed., subsec. 20.1.4. Levels of certainty are addressed in section 4.5.

²⁴ NFPA 921, 2017 ed., subsec. 3.3.69.

²⁵ William Perdue, ATF, Public Input No. 237-NFPA 921-2017 [Section No. 20.1.1].

²⁶ Steven Avato, Loudoun County (VA) Fire Marshal's Office, Affiliation "Public Sector," Public Input No. 256-NFPA 921-2017 [Section No. 20.1], Public Input No. 257-NFPA 921-2017 [Section No. 20.1.4], and Public Input No. 258-NFPA 921-2017 [Section No. 20.1.4(B)].

²⁷ NFPA 921, 2017 ed., subsec. 20.1.4.

²⁸ NFPA 921, 2017 ed., subsec. 20.1.4(B).

²⁹ Steven Avato, Loudoun County (VA) Fire Marshal's Office, Affiliation "Public Sector," Public Input No. 257-NFPA 921-2017 [Section No. 20.1.4].

³⁰ Steven Avato, Loudoun County (VA) Fire Marshal's Office, Affiliation "Public Sector," Public Input No. 256-NFPA 921-2017 [Section No. 20.1].

³¹ Robert Toth, Iris Fire Investigations Inc., Public Input No. 43-NFPA 921-2017 [New Section after 2.1] and Public Input No. 102-NFPA 921-2017 [Section No. 20.1]; Robert Schaal, Gulf Coast Fire, Public Input No. 532-NFPA 921-2018 [Section No. 20.1].

³² Nat'l Ass'n of State Fire Marshals (NASFM) Fire Res. Ed. Found., "Conquering the 'Unknowns' Research and Recommendations on the Chronic Problem of Undetermined and Missing Data in the Casual Factors Sections of the National Fire Incident Reporting System," (2014) available at <http://www.firemarshals.org/resources/Documents/Fire%20Incident%20Data%20Collectin/NASFM-FoundationFinalReportConqueringtheUnknowns.pdf>.

³³ Id. at 33.

³⁴ See, e.g. Anthony Apfelbeck, Altamonte Springs Building/Fire Safety Division, Public Input No. 4-NFPA 921-2014 [New Section after 1.1]; and JAMES NARVA, NASFM, Public Comment No. 71-NFPA 921-2015 [New Section after 1.1].

³⁵ See the definition of "standard," supra, note 5.

³⁶ Nat'l Fire Prot. Ass'n, *Manual of Style for NFPA Technical Committee Documents*, 4th ed. (2004).

³⁷ Supra, note 33, subpara. 1.6.1.2.1.

³⁸ Supra, note 33, subpara. 1.6.1.2.2.

³⁹ NFPA 921 (2017 ed.), subsec. 1.1.1.1.

⁴⁰ NFPA 921 (2017 ed.), subsec. 1.1.2.

⁴¹ NFPA Codes & Standards/ All codes & standards/ List of NFPA codes & standards/ NFPA 921, NAT'L FIRE PROT. ASS'N (2020), <https://www.nfpa.org/codes-and-standards/all-codes-and-standards/list-of-codes-and-standards/detail?code=921&tab=nextedition>.

⁴² NFPA 921 (2017 ed.), sec. 20.1.