

City of Santa Fe, New Mexico

memo

DATE: September 16, 2015

TO: Public Safety Committee

CC: Brian Snyder, City Manager *BKS*

FROM: Erik Litzenberg, Fire Chief

SUBJECT: Santa Fe Fire Department Standards of Cover

Summary: The Santa Fe Fire Department makes every effort to follow those standards for covering emergency preparedness, mitigation, and response that are published and proven. Our ultimate goal is to provide high quality fire response, technical response, and emergency medical services (EMS) to all parts of the City of Santa Fe, for all citizens and visitors. While the organization strives to meet all of the standards of the National Fire Protection Agency (NFPA) and other federal and state partners, the following two are worthy of specific citation.

NFPA 1710 – Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Career Fire Departments

The fire department shall establish the following objectives:

- 80 seconds for turnout time for fire and special operations response and 60 seconds turnout time for EMS response
- 240 seconds or less travel time for the arrival of the first arriving engine company at a fire suppression incident, and 480 seconds or less travel time for the deployment of an initial full alarm assignment at a fire suppression incident
- 240 seconds or less travel time for the arrival of a unit with first responder with AED or higher level capacity at an emergency medical incident
- 480 seconds or less travel time for the arrival of an advanced life support unit at an emergency medical incident

Code of Federal Regulations, Title 14, Chapter 1, Subchapter G, Part 139 – Aircraft rescue and firefighting: Operational requirements.

The response... must achieve the following performance criteria: Within 3 minutes from the time of the alarm, at least one required aircraft rescue and firefighting vehicle must reach the midpoint of the farthest runway serving air carrier aircraft from its assigned post or reach any other specified point of comparable distance on the movement area that is available to air carriers, and begin application of extinguishing agent.

Requested Action: The Santa Fe Fire Department would like the Public Safety Committee to re-establish and confirm the referenced standards of cover to ensure safe and appropriate response throughout the City of Santa Fe.

NFPA 1710



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Over the coming months, fire chiefs and fire fighters—and the government officials who oversee local fire and EMS departments—have an unprecedented opportunity to implement meaningful changes to improve the efficiency, effectiveness, and delivery of emergency services to the citizens they serve.

The new NFPA 1710 Standard on Fire Department Deployment and Operations, passed last year after years of research and deliberations, was a watershed event for the fire service and for citizens across North America. NFPA 1710 is the result of the same time-proven consensus process used to develop other NFPA fire safety standards, and the National Electrical Code, the National Sprinkler Code, and the National Building Code.

The International Association of Fire Fighters and the International Association of Fire Chiefs jointly developed this NFPA 1710 Implementation Guide to assist labor and management in working together to take fire and emergency services to a higher level in their communities.

NFPA 1710 establishes a quantifiable method of measuring the quality of your fire department—and in our business quality is defined by our ability to save lives and property. It sets adequate and appropriate guidelines for staffing, response times, and other factors vital to the performance of a fire and EMS department's duties. And in those communities that implement this new international standard, NFPA 1710 will surely save lives of citizens and fire fighters.

There are fire departments across our two nations that already meet or exceed the performance requirements set by NFPA 1710, but many fall short. For many departments, the road to compliance will be a long one. In some cases, it will require increases in budget over time; in others, it will require a change in philosophy. Nonetheless, it is the responsibility of every career fire department to strive to reach the goals outlined in NFPA 1710.

Every fire service leader and every local government official should enthusiastically support implementation of NFPA 1710. The benefits of NFPA 1710 compliance, including reduced property loss, far outweigh the arguments of those critics who suggest that the benchmarks in NFPA 1710 are unattainable or too costly for their community.

The goal of this implementation guide is to give fire chiefs, fire fighter locals, and city officials the knowledge, the data, the tools, and a step-by-step process to evaluate their fire and EMS departments and work toward compliance with NFPA 1710.

It is our hope that this guide will help fire departments, large and small, across North America to grow with their communities and provide the level of fire and EMS protection that our citizens expect and deserve.

Harold A. Schmitzberger

John M. Buckman III

DEFINING THE NFPA 1710 STANDARD

In this section we explain details about the standards-setting process, and offer details about the 1710 standard.

Standards and the NFPA

The National Fire Protection Association (NFPA) is an international organization of more than 75,000 individuals and more than 80 national trade and professional organizations. NFPA's mission is to reduce the worldwide burden of fire and other hazards on the quality of life by developing and advocating scientifically based consensus codes and standards, research, training and education.

NFPA develops, publishes and disseminates timely consensus codes and standards intended to minimize the possibility and effects of fire and other risks. More than 300 NFPA codes and standards are used around the world. NFPA documents are developed by more than 225 NFPA Technical Committees, each representing a balance of affected interests.

NFPA codes and standards, developed under the approved process of the American National Standards Institute (ANSI), are widely used as a basis of legislation and regulation at all levels of government. In some way, virtually every building, process, service, design and installation is affected by codes and standards developed through NFPA's process.

The Difference between a Standard and a Code

NFPA defines a standard as follows: A document, the main text of which contains only mandatory provisions using the word "shall" to indicate requirements and which is in a form generally suitable for mandatory reference by another standard or code or for adoption into law.

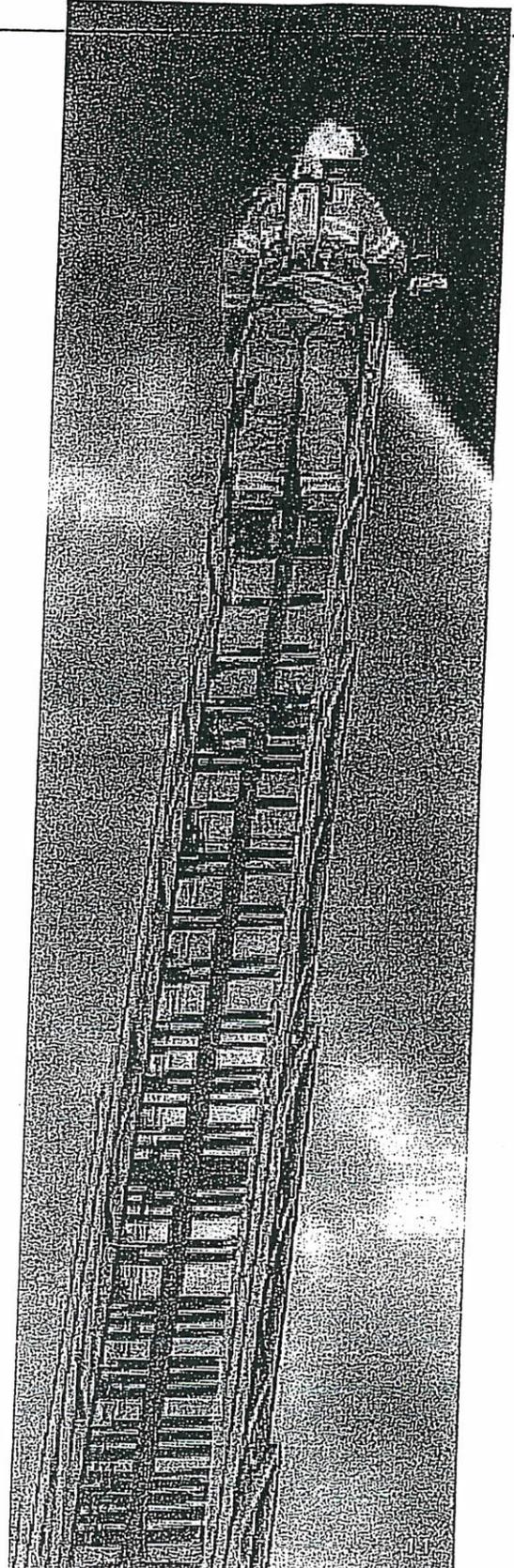
Nonmandatory provisions shall be located in an appendix, footnote or fine print, and are not to be considered a part of the requirements of a standard.

NFPA defines a code as follows: An extensive compilation of provisions covering broad subject matter or that is suitable for adoption into law independently of other codes and standards.

The decision whether to designate a standard as a code is based on such factors as the size and scope of the document, its intended use and form of adoption and the presence of substantial enforcement and administrative provisions.

How Standards Are Established

Proposals for new standards or revisions to existing ones involve a review of the proposed project through a consensus-based public review process. It begins with assignment of the proposed standard to a technical committee. NFPA requires that the committee's membership reflect "a balanced representation of affected interests." To avoid conflict or



duplication of effort, a single interest may not be represented by more than one-third of the committee.

Next, the committee develops a draft document that is distributed for comment through NFPA News, the U.S. Federal Register, ANSI and relevant national and international trade journals—asking interested persons to submit specific proposals to be included in the document. Interested parties have approximately 24 weeks to respond to this Call for Proposals.

After reviewing and acting on all comments, the committee issues a Report on Proposals (ROP), which is published only if two-thirds of all committee members approve the report for publication. Interested parties have 60 days to comment on it. The committee considers and acts on these comments and produces its next document, a Report on Comments (ROC), if it receives the same two-thirds vote by committee members.

At the next NFPA meeting, the proposal is debated. In the meeting the amendment process has strict limitations. The membership may vote to recommend approval, amendment, return a portion of the report to the committee or return the entire report to the committee. Appeals may be considered on any unresolved issues (a process that may take two years). If there are no appeals, the final code or standard may be issued within 20 days of the meeting at which the membership votes to approve the proposal.

Who Is Involved

At the time of the final vote on NFPA 1710, the Technical Committee contained representatives from seven different classes of NFPA members, including Consumers, Enforcers, Labor, Manufacturers, Research/Testing, Special Experts and Users. No more than one-third of the voting members of the Committee represented one of these interests, as explicitly required by NFPA rules. The following is a breakdown of the membership:

- Consumers (City Managers), 2, 6%
- Enforcers (Fire Chiefs, including 3 representatives from the International Association of Fire Chiefs, or IAFC), 10, 32%
- Labor (Union representatives, including 3 from the IAFF), 7, 23%
- Manufacturers (Trade Group organizations), 2, 6%

- Research/Testing, 1, 3%

- Special Experts, 4, 13%

- Users, 5, 16%

Why We Need Standards

Fire growth and behavior are scientifically measurable, as are the expected outcomes associated with untreated cardiac arrest, and the specific resource requirements to control fires and to prevent deaths. Despite these facts, many communities approach fire/rescue organization and deployment as if it were all art and no science—and abstract art, at that.

Why NFPA Created 1710

NFPA members encouraged passage of 1710 to improve public safety. More specifically, this standard responds to NFPA's goal of improving the methods of fire protection and prevention and establishing "proper safeguards against loss of life and property due to fire."

Although the organization and deployment of fire and rescue services are potentially the most important factors in safeguarding against the loss of life and property due to fire, this is the first time that NFPA has issued a standard establishing comprehensive minimum criteria to ensure safe and effective fire and emergency medical response by career fire departments. It represents the culmination of more than a decade of work by the NFPA Standards Council, its technical committees and its membership. The result is a comprehensive, uniform and practical standard governing fire and rescue service deployment by career fire departments throughout North America.

NFPA 1710 Standard is important because it applies the documented and proven science of fire behavior and emergency medicine to the basic resource requirements for effective fire and emergency service deployment. This application allows a community to determine if the resources allocated for the different types of fires, emergencies, medical calls and other incidents are sufficient to effectively control the incident and protect lives and property.

NFPA 1710 Standard sets forth in concise terms the recommended resource requirements for fires, emergencies and other incidents. It requires the emergency response organization to evaluate its performance and report it to the authority having jurisdiction. This common sense, science-based formula categorically disproves the fallacy of

the “something is better than nothing” model, which results in unnecessary risk for the public and for responders. The approach embodied in NFPA 1710 will make communities and fire fighters safer and responders more effective and efficient.

The standard defines the minimum acceptable requirements for how fire, EMS and special operations are organized and deployed in departments that are substantially career. If there are no volunteers, the organization is obviously career. Even if there are volunteers present to supplement the career staff, the department is still substantially career.

The minimum requirements address these organizations’ objectives as well as their functions. Not surprisingly, the standard emphasizes three key areas of a successful operation:

- Service delivery
- Capabilities
- Resources

The standard sets forth the minimum criteria related to the effectiveness and the efficiency of public entities that provide fire suppression, emergency medical service and special operations. Both efficiency and effectiveness are specifically related to protecting two groups: the public and fire department employees.

NFPA 1710 Standard creates a common template for evaluating performance. The Organizational Statement of the Standard specifies the minimum information required concerning what the organization does, how it is structured and what staffing is required to achieve its

objectives.

Unfortunately, many emergency response organizations assume responsibility to provide additional services without ensuring that they have the resources to accomplish the additional objectives. The chapter in the standard that covers this topic requires the authority having jurisdiction to specify the level of service, the number of personnel required to provide that level of service and the duties these members are expected to perform in order to succeed.

Service delivery objectives found in the standard are specific requirements for deployment, staffing, response times and necessary support systems. These support systems include safety and health, communications, incident command, pre-incident planning and training.

Standard 1720

The organization, operations, communications, dispatch, deployment, response time and training of career fire fighters are substantively and substantially different from those of volunteer fire fighters. Not only are the frequency and severity of fire incidents higher in career fire departments, but the majority of career fire departments are involved with emergency medical response as well as specialized operations, including hazardous material and special operations responses. The expectations of performance for career fire departments differ from volunteer fire departments, and the evaluation of that performance also differs. More is expected of the career fire department today and the standards of performance are higher.

In addition, volunteer fire departments traditionally rely on substantively different methods of deployment from career departments—namely, volunteer fire departments often rely on their members to deploy from home while career departments deploy from station houses.

Unlike NFPA 1710, NFPA 1720 recognizes the differences in expected delivery of services between career and volunteer fire departments. Accordingly, the nature of volunteer fire services and of the different services they provide make the deployment and response a community decision. The differences between NFPA 1710 & 1720 are detailed in a comparison chart contained on the CD that you received with this guidebook.

What the Standard Says

The standard addresses fire operations in these six specific areas:

- Fire operations
- EMS operations
- Special operations
- Wildland operations
- Airport operations
- Marine operations

Fire Operations

Fire departments must be capable of establishing the following functions at each structural fire:

- Incident command
- Water supply
- Attack lines
- Backup lines
- Search and rescue teams

- Ventilation teams
- Rapid intervention crews

These benchmark requirements are based on a fire involving a 2,000-square-foot detached single-family occupancy. Fire departments should deploy additional resources according to the occupancies and hazards in their jurisdiction.

The Fire Protection Services Task Analysis

The total number of on-duty personnel is established by means of a task analysis that evaluates expected fire fighting deployment, using the following factors:

- Life hazards in the jurisdiction
- Safety and efficiency of fire fighters
- Potential property loss
- Nature, configuration, hazards and internal protection of properties in the response area
- The department's standard tactics and evolutions, apparatus deployed and expected results

For example, a jurisdiction would need to evaluate all locations within its response area to determine those that have tactical hazards such as concentrated fire potential; high frequency incidents; high hazard occupancies such as schools, hospitals, nursing homes, manufacturing complexes, refineries or high-rise buildings; geographical restrictions that could result in a delayed response affecting the severity and spread of fire occurrence; or other factors that would necessitate additional staffing per company and additional companies for the initial alarm assignment, additional alarm assignments and simultaneous emergencies. By collecting, analyzing and evaluating this information and data, a department can then establish total on-duty staffing.

Defining Fire Suppression Company Units

Companies are defined as either engine or truck (ladder) companies or specialized apparatus—such as rescue or squad companies—depending on the type of apparatus and the fire suppression functions performed staffed with four personnel. Quints must be deployed as either an engine or a truck company or be staffed with additional personnel to perform multiple engine/truck company tasks.

Regardless of the type of company, each must consist of a group of trained and equipped fire fighters under the

supervision of an officer who operates and arrives on the emergency scene with one piece of fire apparatus. The standard allows for an exception in those instances when multiple apparatus are used to make up a company. However, such exceptions require that these multi-piece companies always be dispatched and arrive together, be continuously operated together and are managed by a single company officer. The standard recognizes and clarifies the limited use of such multi-piece companies (see Section 3).

Examples include the following:

- The use of a fire department personnel vehicle if the apparatus lacks adequate seating.
- An engine and a water tanker, such as those used in some suburban and rural response where a water supply (hydrant or natural water body) is not available.
- An engine and an EMS unit (ambulance or rescue).
- Multiple-piece company assignment, specified in a fire department's response SOPs, such as an engine company response with a pumper and a hose wagon.

The Basis for a Four-Person Minimum

The NFPA Technical Committee reviewed numerous studies, evaluations and stakeholder reports containing empirical data on departmental response and mitigation of fire. These studies clearly demonstrate that for safe, effective and efficient fire suppression, each responding company needs a minimum of four fire fighters.

Numerous studies support the four-person minimum. See Section 5 for a detailed bibliography.

Turnout Time

NFPA 1710 Standard says, "The turnout time begins when units acknowledge notification of the emergency to the beginning point of response time." It further states that, "The fire department shall establish a time objective of one minute (60 seconds) for turnout time."

Response Times

The NFPA 1710 standard says, "the fire department shall establish a time objective of four minutes (240 seconds) or less for the arrival of the first arriving engine company at a fire suppression incident and/or eight minutes (480 seconds) or less for the deployment of the full first alarm assignment at a fire suppression incident."

Can the first unit arrive later than four minutes if the entire assignment is on the scene within eight minutes?

~~Technically, the answer is yes;~~

however, the standard's intent for fire suppression is to have the first-due engine capable of arriving within its response area consistently within four minutes, 90 percent of the time. The "and/or" criterion is intended to recognize the effects of simultaneous emergencies, training or other occurrences that take one or more companies out of service, and not to relieve a department of its responsibility to plan for overall deployment of resources by location to satisfy the four-minute criteria.

Initial Full Alarm Minimum Requirements

The standard indicates that a fire department shall have the capability to deploy an initial full-alarm assignment within the eight-minute (480 seconds) response time. The number of people required falls between 15 and 17, depending on if an aerial is used, and/or if two pumpers are being used to provide for a continuous water supply.

The following is a list of required functions for the benchmark fire defined in the standard and the number of personnel required to be deployed to perform these functions:

- Incident command shall be established outside of the hazard area for the overall coordination and direction of the initial full-alarm assignment. A minimum of one individual shall be dedicated to this task.
- The supervisory chief officer shall have a staff aide deployed to them for purposes of incident management and accountability at

emergency incidents.

- A safety officer shall be dispatched to an initial full-alarm assignment when significant risks to fire fighters are present and shall be deployed to all emergencies that go beyond an initial full-alarm assignment to ensure that the health and safety system is established at the emergency incident. A minimum of one individual shall be dedicated to this task.
- An uninterrupted water supply of a minimum 400 gpm for 30 minutes shall be established. Supply line(s) shall be maintained by an operator who shall remain with each fire apparatus supplying the water flow to ensure uninterrupted water flow application.
- An effective water flow application rate shall be established: 300 gpm from two handlines, one of which shall be an attack line with a minimum of 100 gpm and one of which shall be a back-up line with a minimum of 100 gpm. Attack and backup lines shall be operated by a minimum of two personnel each to effectively and safely maintain the line.
- One support person shall be provided for each attack and backup line deployed to accomplish hydrant hookup and assist in line lays, utility control and forcible entry.
- A minimum of one search-and-rescue team shall be part of an initial full-alarm assignment. Each search-and-rescue team shall consist of a minimum of two personnel.
- A minimum of one ventilation team shall be part of an initial full-alarm assignment. Each ventilation team shall consist of a minimum of two personnel.
- If an aerial device is used in operations, one person shall function as an aerial operator who shall remain at the primary control of the aerial device at all times.
- An IRIC (Initial Rapid Intervention Crew) shall be established that shall consist of a minimum of two properly-equipped and trained personnel. When an incident escalates beyond the initial full-alarm assignment, or when there is significant risk to fire fighters due to the magnitude of the incident, the Incident Commander shall upgrade the IRIC to a full Rapid Intervention Crew (RIC) that consists of four dedicated, fully equipped and trained fire fighters.
- The fire department shall have the capability for additional alarm assignments that can provide for more personnel and services including the application of water to the fire; engagement in search and rescue, forcible entry, ventilation and preservation of property; accountability for personnel; and provision of support activities for those situations that are beyond the capability of the initial full-alarm assignment.

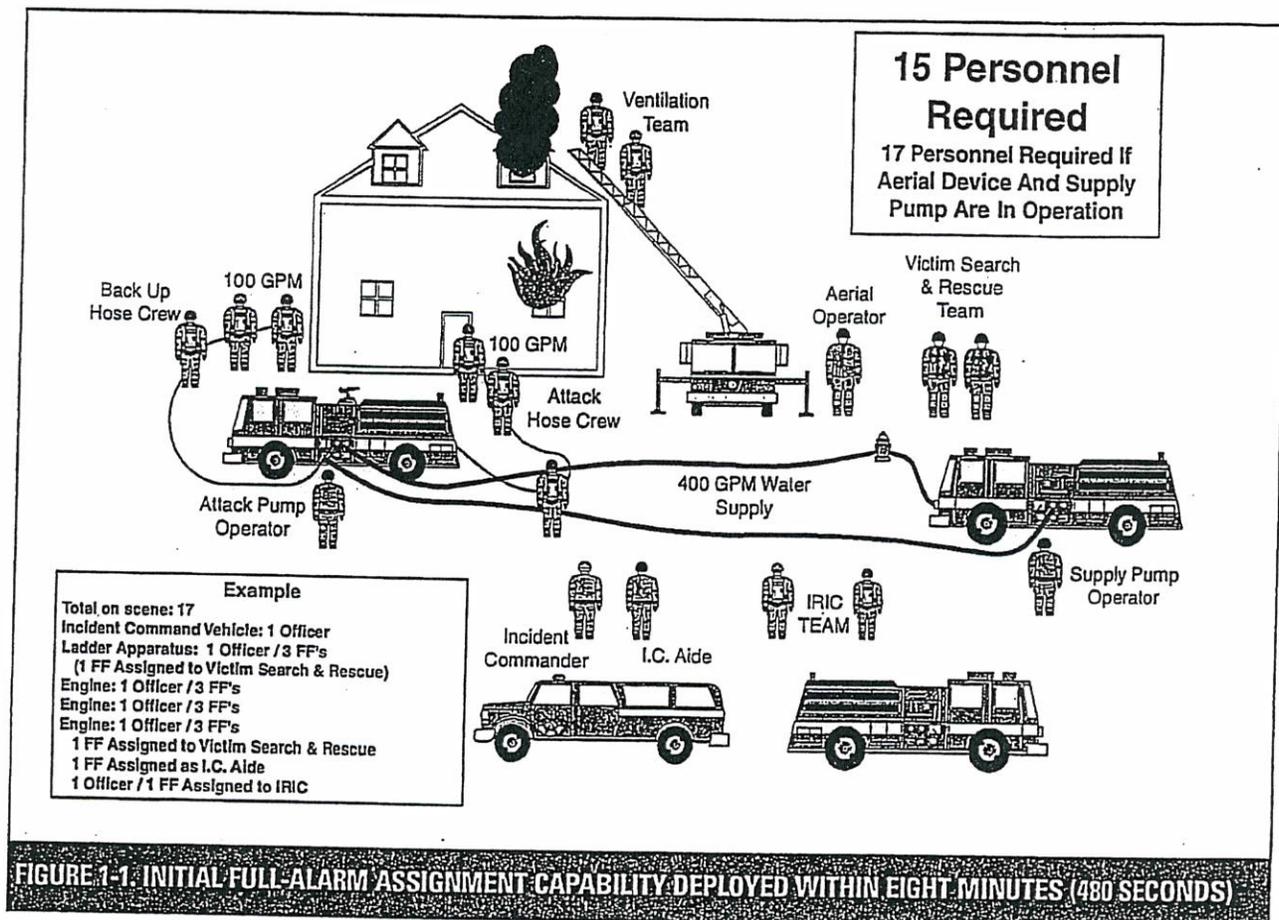


Figure 1-1 illustrates an example of the above requirements for the response to a fire in which a single room and its furnishings and other contents are involved, located in a 2,000-square-foot single-family occupancy, without a basement and without exposures (adjacent buildings). In an urban environment, with high population density dwellings in close proximity, multifamily occupancies, industrial areas and high occupancy institutions—including hospitals and schools—the fire department's response capability must be enhanced with additional apparatus, personnel and resources for the initial alarm assignment.

EMS Operations

The NFPA 1710 Standard requires all fire departments to have a basic level of EMS. The standard calls for the department to be capable of responding to emergency medical incidents at the First Responder Level with Automatic External Defibrillator (AED). If the department chooses to provide EMS at a higher level, the standard sets operational requirements for that service as well.

Fire departments that provide EMS at any level must establish in their organizational statements the criteria for the types of incidents to which they will respond. The established level of EMS provision must be recognized, and the department must allocate the necessary resources to adequately provide the services required by the local jurisdiction and expected by the citizens. Necessary resources include trained personnel, equipment and other supporting elements.

When EMS beyond the first responder level is provided by an entity other than the fire department, the provider must adhere to minimum staffing, deployment and response criteria recommended by the fire department according to the requirements in the NFPA 1710 Standard. These operational requirements must be described in both the fire department's organizational statement and any contract or other agreement between the jurisdictional authority and the EMS agency or private company. The EMS agency or private ambulance company must adhere to the same performance objectives for staffing, deployment, and response time that a fire department

would if providing the service directly. This standard criterion is part of the overall emergency response system concept.

Regardless of the provider, the performance objectives are the same and must be met.

Fire departments are permitted to establish automatic and mutual aid agreements to comply with emergency medical response requirements.

The standard does not establish patient care or EMS protocol requirements. Specific patient care capabilities associated with each EMS service level are to be determined by the authority having jurisdiction to approve and license EMS providers. This is typically the state, provincial or local EMS agency in conjunction with physician medical direction/oversight.

There are three levels of EMS provision recognized in the NFPA 1710 Standard:

- First Responder with AED
- Basic Life Support (BLS)
- Advanced Life Support (ALS)

The standard also recognizes EMS transport as a service that the fire department may provide.

It is not a requirement that a fire department provide all levels of EMS service beyond First Responder (AED). However, the standard establishes operational requirements for each level that is provided by a department. For each level, operational requirements are specified as follows:

a) First Responder (AED)—A fire department must appropriately train all response personnel at the First Responder Level with AED

capability and personnel must arrive within a four-minute (240-second) response time to 90 percent of all emergency medical incidents. The number of personnel must be sufficient to ensure adequate care capability and member safety.

b) BLS—A fire department that provides BLS beyond the first responder level must adhere to staffing and training requirements as specified by the state or provincial licensing agency. The department must also deploy sufficient resources to arrive within a four-minute (240 second) response time to 90 percent of all emergency medical incidents.

c) ALS—A fire department that provides ALS beyond the first responder and BLS level must adhere to staffing and training requirements as specified by the state or provincial licensing agency. The department must also deploy sufficient resources to arrive within an eight-minute (480-second) response time to 90 percent of all emergency medical incidents.

Minimum Staffing for BLS and ALS Emergency Transport Units

The NFPA 1710 standard states that staffing and training requirements for both BLS and ALS transport units are to be determined by the state or provincial agency responsible for providing EMS licensing.

Minimum Staffing for ALS Emergency Responses

The NFPA 1710 standard designates a staffing level for ALS response that is different from the requirement for ALS transport. The standard requires that staffing for ALS emergency medical responses include a minimum of two members trained at

the ALS level (EMT-Paramedic). Additionally, the standard requires that ALS responses include a minimum of two BLS trained providers. All response personnel must arrive within the response time established for ALS delivery.

The different staffing requirement for ALS responses is based on scientific research, experience and expert consensus that time-critical ALS calls require more personnel resources on scene for assessment and initiation of care than those required for BLS level incidents and for all transport. Additionally, the American Heart Association (AHA) has long-established guidelines for response to the most time-critical incident—cardiac arrest. The AHA recommendations, which were reviewed by the NFPA 1710 Technical Committee, are contained in several AHA publications. See Section 5 for a complete bibliography.

Following scientific research conducted by cardiologists and universities throughout the United States, AHA guidelines note that, "in systems that have attained survival rates higher than 20 percent for patients with ventricular fibrillation (cardiac arrest), the response teams have a minimum of two Advanced Cardiac Life Support (ACLS) providers plus a minimum of two BLS personnel at the scene." Experts agree that four responders (at least two ALS and two BLS) are the minimum required to provide ACLS to cardiac arrest victims.

The requirement that first responder/AED units arrive within four minutes (240 seconds) to 90 percent of emergency medical incidents, and the requirement that

an ALS company arrive within eight minutes (480 seconds) to 90 percent of the incidents to which they are dispatched, are based on experience, expert consensus and science. Many studies note the role of time and the delivery of early defibrillation in patient survival due to heart attacks and cardiac arrest, which are the most time-critical, resource-intensive medical emergency events to which fire departments respond.

Various study findings and national EMS stakeholder organization guidelines exist concerning these minimum requirements. See Section 5 for a complete bibliography.

Quality Management for EMS System Evaluations

The NFPA 1710 standard requires the fire department to establish a quality management program as a basic function of EMS provision. The purpose of the quality management program is to ensure adequate response capability and quality patient care. All quality review of both BLS and ALS services must be documented. Additionally, the department must create a mechanism for immediate communication with the EMS system supervisor and the person responsible for physician oversight (medical director).

Special Operations

The fire department must formally define the types of special operations that it is required or expected to perform in an emergency or other incident. These types of special operations include, but are not limited to, hazardous materials response, confined space response, technical rescue, high-angle rescue and water rescue. Regardless of the fire department's defined special operation capability, all fire fighters who provide emergency response must be trained to the first responder operations level for both hazardous materials response and confined space response. Likewise, all fire departments must define their response capability to natural disasters, terrorism incidents, and other mass casualty and large-scale emergency events.

When fire departments have established that they will provide response beyond first responder level for hazardous materials or confined space emergencies, they must ensure that all members involved in this level of response be trained to the levels specified in the standard.

The fire department must also determine the availability of exterior resources—through federal, state, provincial, or local assistance or private contractors—that are deployed to emergencies and other incidents and the procedures for initiating such outside response.

The fire department must also limit the level of response to special operation emergencies to the level for which they have staffed, trained and equipped their personnel. Additionally, they must have the capacity to initiate a rapid intervention crew during all special operations responses.

Wildland Operations

The NFPA 1710 standard recognizes that many, if not most, fire departments must respond to either wildland or wildland/urban interface fires. Accordingly, the fire department must address the service delivery for such occurrences. The standard specifies the minimum wildland staffing for defined wildland companies, as well as engine and truck companies that respond to wildland or urban interface/wildland emergencies. Likewise, the standard specifies deployment requirements for a wildland Initial Direct Attack.

Much of the basis for such requirements was validated through a scientific and medical study conducted by the Los Angeles County California Fire Department. The study's purpose was to establish benchmarks for necessary staffing requirements, wildland tasks and deployment times for wildland response.

Airport Operations

The NFPA 1710 standard requires that airport fire departments be organized to ensure that their response capabilities to nonaircraft incidents (nonairframe structural fires and EMS emergencies) within the department's response jurisdiction be identical to non-Airport Rescue and Fire Fighting (ARFF) fire department capabilities.

During the development of 1710, the Technical Committee merged the standards addressing ARFF activities developed by the NFPA, the FAA and the U.S. Department of Defense, so for the first time the deployment and staffing of ARFF capabilities would be addressed. During the public review, the NFPA committee responsible for developing NFPA 403, Standard for Aircraft Rescue and Firefighting Services at Airports, claimed jurisdiction over the deployment and staffing of ARFF services. This claim occurred even though the NFPA 1710 Technical Committee and others in the fire service, including the IAFF, the International Association of Fire Chiefs, and the NFPA, recognized that NFPA 403 was deficient in these areas.

Marine Operations

The standard recognizes marine fire fighting as a specialized fire suppression support function, with the initial response to an incident involving a vessel in port provided by land-based fire suppression forces as well as shipboard crews and sea-based response provided initially by the shipboard crew. Land-based forces' staffing and deployment criteria are recognized by the standard and require the jurisdiction that responds to such emergencies to address the resource allocation to such events; the U.S. Coast Guard or Canadian Guard or other legal authority regulates sea-based crew staffing and deployment capability with jurisdiction over navigable waterways.

Liability Associated with Failing To Meet a Standard

Many NFPA standards have been enacted into law at the federal, state, provincial and local levels. Some have argued that, because jurisdictions having authority are not required to automatically enact a particular NFPA standard, violation of an NFPA standard does not automatically give rise to a finding of liability against a jurisdiction that has not adopted the standard. Having said that, however, we recognize that courts frequently rely upon NFPA standards to determine the "industry standard" for fire protection and safety measures. Judicial reliance on NFPA doctrines is most frequently found in common law negligence claims. To prevail in a common law negligence claim, the plaintiff must show that the defendant owed a duty of care to the plaintiff, that the defendant breached this duty of care and that this breach was the cause of the plaintiff's injury.

The NFPA 1710 standard could be found highly relevant to the question of whether a jurisdiction has negligently failed to provide adequate fire or emergency medical protection to an individual harmed in a fire or medical emergency. To prevail in such a claim, the individual would have to show that the jurisdiction failed to provide the level of service required by the standard, and that this failure was a cause of his or her injury.

ELECTRONIC CODE OF FEDERAL REGULATIONS

e-CFR data is current as of September 4, 2015

Title 14 → Chapter I → Subchapter G → Part 139 → Subpart D → §139.319

Title 14: Aeronautics and Space
PART 139—CERTIFICATION OF AIRPORTS
Subpart D—Operations

§139.319 Aircraft rescue and firefighting: Operational requirements.

(a) *Rescue and firefighting capability.* Except as provided in paragraph (c) of this section, each certificate holder must provide on the airport, during air carrier operations at the airport, at least the rescue and firefighting capability specified for the Index required by §139.317 in a manner authorized by the Administrator.

(b) *Increase in Index.* Except as provided in paragraph (c) of this section, if an increase in the average daily departures or the length of air carrier aircraft results in an increase in the Index required by paragraph (a) of this section, the certificate holder must comply with the increased requirements.

(c) *Reduction in rescue and firefighting.* During air carrier operations with only aircraft shorter than the Index aircraft group required by paragraph (a) of this section, the certificate holder may reduce the rescue and firefighting to a lower level corresponding to the Index group of the longest air carrier aircraft being operated.

(d) *Procedures for reduction in capability.* Any reduction in the rescue and firefighting capability from the Index required by paragraph (a) of this section, in accordance with paragraph (c) of this section, must be subject to the following conditions:

(1) Procedures for, and the persons having the authority to implement, the reductions must be included in the Airport Certification Manual.

(2) A system and procedures for recall of the full aircraft rescue and firefighting capability must be included in the Airport Certification Manual.

(3) The reductions may not be implemented unless notification to air carriers is provided in the Airport/Facility Directory or Notices to Airmen (NOTAM), as appropriate, and by direct notification of local air carriers.

(e) *Vehicle communications.* Each vehicle required under §139.317 must be equipped with two-way voice radio communications that provide for contact with at least—

(1) All other required emergency vehicles;

(2) The air traffic control tower;

(3) The common traffic advisory frequency when an air traffic control tower is not in operation or there is no air traffic control tower, and

(4) Fire stations, as specified in the airport emergency plan.

(f) *Vehicle marking and lighting.* Each vehicle required under §139.317 must—

(1) Have a flashing or rotating beacon and

(2) Be painted or marked in colors to enhance contrast with the background environment and optimize daytime and nighttime visibility and identification.

(g) *Vehicle readiness.* Each vehicle required under §139.317 must be maintained as follows:

(1) The vehicle and its systems must be maintained so as to be operationally capable of performing the functions required by this subpart during all air carrier operations.

(2) If the airport is located in a geographical area subject to prolonged temperatures below 33 degrees Fahrenheit, the vehicles must be provided with cover or other means to ensure equipment operation and discharge under freezing conditions.

(3) Any required vehicle that becomes inoperative to the extent that it cannot perform as required by paragraph (g)(1) of this section must be replaced immediately with equipment having at least equal capabilities. If replacement equipment is not available immediately, the certificate holder must so notify the Regional Airports Division Manager and each air carrier using the airport in accordance with §139.339. If the required Index level of capability is not restored within 48 hours, the airport operator, unless otherwise authorized by the Administrator, must limit air carrier operations on the airport to those compatible with the Index corresponding to the remaining operative rescue and firefighting equipment.

(h) *Response requirements.* (1) With the aircraft rescue and firefighting equipment required under this part and the number of trained personnel that will assure an effective operation, each certificate holder must—

(i) Respond to each emergency during periods of air carrier operations; and

(ii) When requested by the Administrator, demonstrate compliance with the response requirements specified in this section.

(2) The response required by paragraph (h)(1)(ii) of this section must achieve the following performance criteria:

(i) Within 3 minutes from the time of the alarm, at least one required aircraft rescue and firefighting vehicle must reach the midpoint of the farthest runway serving air carrier aircraft from its assigned post or reach any other specified point of comparable distance on the movement area that is available to air carriers, and begin application of extinguishing agent.

(ii) Within 4 minutes from the time of alarm, all other required vehicles must reach the point specified in paragraph (h)(2)(i) of this section from their assigned posts and begin application of an extinguishing agent.

(i) *Personnel.* Each certificate holder must ensure the following:

(1) All rescue and firefighting personnel are equipped in a manner authorized by the Administrator with protective clothing and equipment needed to perform their duties.

(2) All rescue and firefighting personnel are properly trained to perform their duties in a manner authorized by the Administrator. Such personnel must be trained prior to initial performance of rescue and firefighting duties and receive recurrent instruction every 12 consecutive calendar months. The curriculum for initial and recurrent training must include at least the following areas:

- (i) Airport familiarization, including airport signs, marking, and lighting.
- (ii) Aircraft familiarization.
- (iii) Rescue and firefighting personnel safety.
- (iv) Emergency communications systems on the airport, including fire alarms.
- (v) Use of the fire hoses, nozzles, turrets, and other appliances required for compliance with this part.
- (vi) Application of the types of extinguishing agents required for compliance with this part.
- (vii) Emergency aircraft evacuation assistance.
- (viii) Firefighting operations.
- (ix) Adapting and using structural rescue and firefighting equipment for aircraft rescue and firefighting.
- (x) Aircraft cargo hazards, including hazardous materials/dangerous goods incidents.
- (xi) Familiarization with firefighters' duties under the airport emergency plan.

(3) All rescue and firefighting personnel must participate in at least one live-fire drill prior to initial performance of rescue and firefighting duties and every 12 consecutive calendar months thereafter.

(4) At least one individual, who has been trained and is current in basic emergency medical services, is available during air carrier operations. This individual must be trained prior to initial performance of emergency medical services. Training must be at a minimum 40 hours in length and cover the following topics:

- (i) Bleeding.
- (ii) Cardiopulmonary resuscitation.
- (iii) Shock.
- (iv) Primary patient survey.
- (v) Injuries to the skull, spine, chest, and extremities.
- (vi) Internal injuries.
- (vii) Moving patients.
- (viii) Burns.
- (ix) Triage.

(5) A record is maintained of all training given to each individual under this section for 24 consecutive calendar months after completion of training. Such records must include, at a minimum, a description and date of training received.

(6) Sufficient rescue and firefighting personnel are available during all air carrier operations to operate the vehicles, meet the response times, and meet the minimum agent discharge rates required by this part.

(7) Procedures and equipment are established and maintained for alerting rescue and firefighting personnel by siren, alarm, or other means authorized by the Administrator to any existing or impending emergency requiring their assistance.

(j) *Hazardous materials guidance.* Each aircraft rescue and firefighting vehicle responding to an emergency on the airport must be equipped with, or have available through a direct communications link, the "North American Emergency Response Guidebook" published by the U.S. Department of Transportation or similar response guidance to hazardous materials/dangerous goods incidents. Information on obtaining the "North American Emergency Response Guidebook" is available from the Regional Airports Division Manager.

(k) *Emergency access roads.* Each certificate holder must ensure that roads designated for use as emergency access roads for aircraft rescue and firefighting vehicles are maintained in a condition that will support those vehicles during all-weather conditions.

(l) *Methods and procedures.* FAA Advisory Circulars contain methods and procedures for aircraft rescue and firefighting and emergency medical equipment and training that are acceptable to the Administrator.

(m) *Implementation.* Each holder of a Class II, III, or IV Airport Operating Certificate must implement the requirements of this section no later than 36 consecutive calendar months after June 9, 2004.

ELECTRONIC CODE OF FEDERAL REGULATIONS

e-CFR data is current as of September 4, 2015

Title 14 → Chapter I → Subchapter G → Part 139 → Subpart D → §139.317

Title 14: Aeronautics and Space
PART 139—CERTIFICATION OF AIRPORTS
Subpart D—Operations

§139.317 Aircraft rescue and firefighting: Equipment and agents.

Unless otherwise authorized by the Administrator, the following rescue and firefighting equipment and agents are the minimum required for the Indexes referred to in §139.315:

(a) *Index A*. One vehicle carrying at least—

- (1) 500 pounds of sodium-based dry chemical, halon 1211, or clean agent; or
- (2) 450 pounds of potassium-based dry chemical and water with a commensurate quantity of AFFF to total 100 gallons for simultaneous dry chemical and AFFF application.

(b) *Index B*. Either of the following:

- (1) One vehicle carrying at least 500 pounds of sodium-based dry chemical, halon 1211, or clean agent and 1,500 gallons of water and the commensurate quantity of AFFF for foam production.

(2) Two vehicles—

- (i) One vehicle carrying the extinguishing agents as specified in paragraphs (a)(1) or (a)(2) of this section; and
- (ii) One vehicle carrying an amount of water and the commensurate quantity of AFFF so the total quantity of water for foam production carried by both vehicles is at least 1,500 gallons.

(c) *Index C*. Either of the following:

(1) Three vehicles—

- (i) One vehicle carrying the extinguishing agents as specified in paragraph (a)(1) or (a)(2) of this section; and
- (ii) Two vehicles carrying an amount of water and the commensurate quantity of AFFF so the total quantity of water for foam production carried by all three vehicles is at least 3,000 gallons.

(2) Two vehicles—

- (i) One vehicle carrying the extinguishing agents as specified in paragraph (b)(1) of this section; and
- (ii) One vehicle carrying water and the commensurate quantity of AFFF so the total quantity of water for foam production carried by both vehicles is at least 3,000 gallons.

(d) *Index D*. Three vehicles—

- (1) One vehicle carrying the extinguishing agents as specified in paragraphs (a)(1) or (a)(2) of this section; and
- (2) Two vehicles carrying an amount of water and the commensurate quantity of AFFF so the total quantity of water for foam production carried by all three vehicles is at least 4,000 gallons.

(e) *Index E*. Three vehicles—

- (1) One vehicle carrying the extinguishing agents as specified in paragraphs (a)(1) or (a)(2) of this section; and
- (2) Two vehicles carrying an amount of water and the commensurate quantity of AFFF so the total quantity of water for foam production carried by all three vehicles is at least 6,000 gallons.

(f) *Foam discharge capacity*. Each aircraft rescue and firefighting vehicle used to comply with Index B, C, D, or E requirements with a capacity of at least 500 gallons of water for foam production must be equipped with a turret. Vehicle turret discharge capacity must be as follows:

- (1) Each vehicle with a minimum-rated vehicle water tank capacity of at least 500 gallons, but less than 2,000 gallons, must have a turret discharge rate of at least 500 gallons per minute, but not more than 1,000 gallons per minute.
- (2) Each vehicle with a minimum-rated vehicle water tank capacity of at least 2,000 gallons must have a turret discharge rate of at least 600 gallons per minute, but not more than 1,200 gallons per minute.

(g) *Agent discharge capacity*. Each aircraft rescue and firefighting vehicle that is required to carry dry chemical, halon 1211, or clean agent for compliance with the Index requirements of this section must meet one of the following minimum discharge rates for the equipment installed:

(1) Dry chemical, halon 1211, or clean agent through a hand line—5 pounds per second.

(2) Dry chemical, halon 1211, or clean agent through a turret—16 pounds per second.

(h) *Extinguishing agent substitutions.* Other extinguishing agent substitutions authorized by the Administrator may be made in amounts that provide equivalent firefighting capability.

(i) *AFFF quantity requirements.* In addition to the quantity of water required, each vehicle required to carry AFFF must carry AFFF in an appropriate amount to mix with twice the water required to be carried by the vehicle.

(j) *Methods and procedures.* FAA Advisory Circulars contain methods and procedures for ARFF equipment and extinguishing agents that are acceptable to the Administrator.

(k) *Implementation.* Each holder of a Class II, III, or IV Airport Operating Certificate must implement the requirements of this section no later than 36 consecutive calendar months after June 9, 2004.

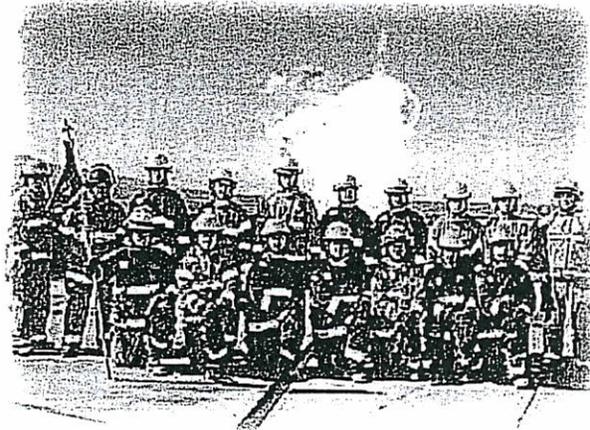
[Doc. No. FAA-2000-7479, 69 FR 6424, Feb. 10, 2004; Amdt. 139-26, 69 FR 31523, June 4, 2004]

Need assistance?

Fires and Emergencies

City staff tracks "response time" to calls for fires and emergency assistance using a computer-aided dispatch system. This system allows the staff to analyze how quickly they respond to calls for help. Response time is a very important indicator to Fire/EMS departments nationwide. In many cases, help during the first 6-7 minutes is necessary in preventing major property loss and/or death of a critically ill or injured person. In 2013, average response time for emergency calls was 6:40 in Santa Fe.

During 2013, the Santa Fe Fire Department responded to and fought 185 fires. The 10-year average is 186 fires per year. The city experienced 22 total structural fires. Brush and grass fires represent the most common fires in Santa Fe.



Emergency medical responses comprise the vast majority of calls responded to by the Fire Department. During 2013, the Fire Department responded to 10,322 calls (28 per day) for emergency medical assistance. Each day the city responds to an average of more than one vehicle accident requiring medical attention.

Fires

	<u>2004</u>	<u>2005</u>	<u>2006</u>	<u>2007</u>	<u>2008</u>	<u>2009</u>	<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2013</u>
Building Fires	54	49	57	62	42	64	46	33	60	22
Vehicle Fires	26	42	30	41	27	24	40	30	33	32
Brush/Other Fire	<u>119</u>	<u>127</u>	<u>111</u>	<u>72</u>	<u>78</u>	<u>76</u>	<u>97</u>	<u>118</u>	<u>118</u>	<u>131</u>
Total	199	218	198	175	147	164	183	181	211	185

Emergency Medical Service(EMS) Responses

	<u>2004</u>	<u>2005</u>	<u>2006</u>	<u>2007</u>	<u>2008</u>	<u>2009</u>	<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2013</u>
Total EMS Responses	8,661	7,956	8,133	8,981	9,066	8,637	8,471	11,876*	11,330	10,322
Vehicle Accidents w/medical attention	1,505	1,164	1,096	946	817	649	679	390	427	316

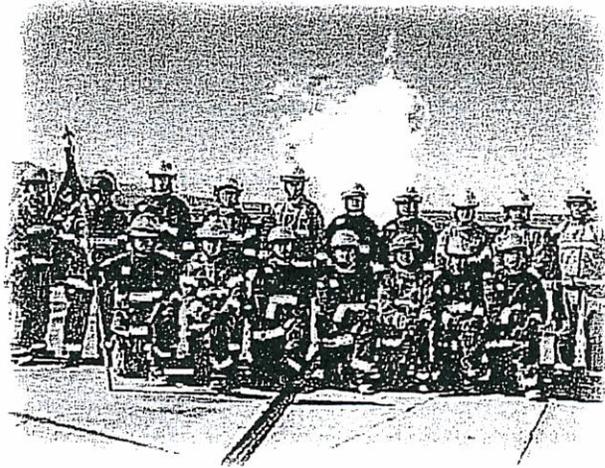
Source: Santa Fe Fire Department.

* The City began a new system of EMS Response Tracking and may explain much or all of the increase in "Total EMS Responses" from 2010 to 2011.

Fires and Emergencies

City staff tracks “response time” to calls for fires and emergency assistance using a computer-aided dispatch system. This system allows the staff to analyze how quickly they respond to calls for help. Response time is a very important indicator to Fire/EMS departments nationwide. In many cases, help during the first 6-7 minutes is necessary in preventing major property loss and/or death of a critically ill or injured person. Average response time for emergency calls was 7 minutes in Santa Fe.

During 2014, the Santa Fe Fire Department responded to and fought 168 fires. The 10-year average is 183 fires per year. The city experienced 25 total structural fires. Brush and grass fires represent the most common fires in Santa Fe.



Emergency medical responses comprise the vast majority of calls responded to by the Fire Department. During 2014, the Fire Department responded to 10,317 calls (28 per day) for emergency medical assistance.

Fires

	<u>2005</u>	<u>2006</u>	<u>2007</u>	<u>2008</u>	<u>2009</u>	<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2013</u>	<u>2014</u>
Building Fires	49	57	62	42	64	46	33	60	22	25
Vehicle Fires	42	30	41	27	24	40	30	33	32	26
Brush/Other Fire	<u>127</u>	<u>111</u>	<u>72</u>	<u>78</u>	<u>76</u>	<u>97</u>	<u>118</u>	<u>118</u>	<u>131</u>	<u>117</u>
Total	218	198	175	147	164	183	181	211	185	168

Emergency Medical Service(EMS) Responses

	<u>2005</u>	<u>2006</u>	<u>2007</u>	<u>2008</u>	<u>2009</u>	<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2013</u>	<u>2014</u>
Total EMS Responses	7,956	8,133	8,981	9,066	8,637	8,471	11,876*	11,330	10,322	10,317
Vehicle Accidents w/medical attention	1,164	1,096	946	817	649	679	390	427	316	275

Source: Santa Fe Fire Department.

* The City began a new system of EMS Response Tracking and may explain much or all of the increase in "Total EMS Responses" from 2010 to 2011.