



Development Services
Safety Codes, Permits, and
Inspections

Edmonton

**Guideline for Alternative
Solutions Affecting
Emergency Services**
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INTRODUCTION

This document provides guidance for design professionals completing alternative solutions to the National Building Code, Alberta Edition (NBC(AE)) within the City of Edmonton, specifically those which may involve impacts to Emergency Services. The NBC(AE) requires alternative solutions to consider operational requirements which include firefighting operations, however those requirements are not clearly defined. This guide ensures that professionals completing alternative solutions within the City of Edmonton have access to current, accurate, and requisite information to evaluate any impact to emergency services. It is not the intention of this guide to suggest that every alternative solution impacts emergency response, but rather to provide guidance for evaluating impacts to emergency services where they may be affected by a specific design. It is equally important to note that alternative solutions which can be shown to provide no additional or unique impacts to emergency services relative to the NBC(AE) acceptable solutions do not require additional analysis in this regard.

Peer Review Processes

Alternative solutions which impact emergency response are subject to peer review by professionals with Safety Codes, Permits, and Inspections (SCPI), as well as with Edmonton Fire Rescue Services (EFRS). The information provided in this guideline was prepared by these professionals, and alternative solutions may be evaluated against this information as part of the building permit application process. Practitioners are encouraged to contact the authors of this guideline prior to submitting a completed alternative solution analysis, particularly if there is any ambiguity with respect to assumptions regarding emergency services.

Guideline Limitations

This guideline does not constitute code advice for any specific application and does not limit practitioners of architecture or engineering, however disregard of the information provided in this guideline could be considered ignorance of information vital to skillful practice with respect to alternative solutions.

While the guideline contains additional information as provided in the NBC(AE) with respect to specific emergency operations within the City of Edmonton, it is not practical to provide detailed information for every possible design/circumstance. Therefore, practitioners are encouraged to seek additional information from the specific resources listed within this guideline where ambiguity or uncertainty exists.

SCOPE

This guideline is publicly available and provides a general informative resource on aspects of emergency response as contemplated by the NBC(AE). Application of this information is specifically intended for the use of qualified architects and engineers during the completion of alternative solutions to the NBC(AE), as per Division C, Section 2.3. This guideline does not provide introductory information with respect to alternative solutions, and before using this guideline practitioners must be familiar with the alternative solution compliance path from Division A Section 1.2.

This version of this guideline is limited to buildings of certain characteristics. While information within this guideline may be useful for any alternative solution, specific details for buildings classified as “High Buildings” as per NBC(AE) Division B, Subsection 3.2.6. are outside the specific scope of this guidance. For specific information on alternative solutions with respect to these buildings, please contact the guideline authors.

REFERENCED DOCUMENTS

The following resources are referenced throughout this guideline, and should be familiar to professionals submitting alternative solutions which may affect emergency services.

- [National Building Code - Alberta Edition 2023](#)
- [National Fire Code - Alberta Edition 2023](#)
- [City of Edmonton Design and Construction Standards, Vol 2, Roadways](#)
- [City of Edmonton Design and Construction Standards, Vol 4, Water](#)
- [City of Edmonton Small Building Access Policy B19-04](#)
- [Fire Rescue Services Swept Path Analysis Guideline](#)
- [City of Edmonton Policy C523A - Fire Rescue Service Delivery](#)
- [Edmonton Fire Rescue Master Plan](#)
- [Fire Underwriters Survey, Water Supply for Public Fire Protection](#)
- [Society of Fire Protection Engineers](#)
 - [SFPE Handbook of Fire Protection Engineering](#)
 - [SFPE Guide to Fire Risk Assessment](#)
 - [SFPE Engineering Guide to Performance-Based Fire Protection](#)
 - [Guidelines for Peer Review in the Fire Protection Design Process](#)
 - [Code Official's Guide to Performance-Based Design Review](#)
- [National Fire Protection Association](#)
 - [NEPA Fire Protection Handbook](#)
 - [NEPA 1710 - Standard for the Organization and Deployment of Fire Suppression Operations](#)

- [Association of Professional Engineers and Geoscientists of Alberta](#)
 - [APEGA Practice Standards, Bulletins, and Guidelines](#)
- [Alberta Association of Architects](#)
 - [Practice Bulletins and Advisories](#)

GENERAL INFORMATION

Alternative Solution Overview

This guideline is not intended to be a primer on the alternative solution process, and users should ensure they are competent and familiar with the alternative solution compliance path (Div A) and content requirements (Div C) prior to using this guideline. The summary information provided here is meant to highlight the way in which emergency services operations must be included within an alternative solution.

As detailed in NBC(AE) Division C, Article 2.3.1.1., documentation provided as part of an alternative solution must include:

“ . . .information concerning any special maintenance or operational requirements. . .that are necessary for the alternative solution to achieve compliance with the Code after the building is constructed.”

This includes consideration of specific building design features which impact emergency services. Further an alternative solution analysis must include:

“ . . .assumptions, limiting or restricting factors. . .that will support a Code compliance assessment.”

Emergency Services in the NBC(AE)

Fire and life safety are critical objectives of the NBC(AE), and are achieved by a number of measures including passive design, active systems, and intervention by emergency services - firefighting in particular. While there are a number of prescriptive requirements of buildings for firefighting purposes, the NBC(AE) does not consider the specific procedures, capability, or organization of local fire departments. As provided in the NBC(AE) Notes to Part 3, Firefighting Assumptions, there is an assumption that a local fire department exists, and that in places where larger buildings exist, greater firefighting resources/capability equally exist. However the code authors did not apply this assumption on a consistent or defined basis.

While adherence to the acceptable solutions ensures consistency between the expectations of the NBC(AE) and the resources/systems provided to firefighters, alternative solutions need to evaluate impacts to emergency response capability, and operations. Therefore, using the guidance from the Notes to Part 3, designers must use good fire protection engineering practices to address these possible impacts. This guide is intended to clearly describe the resources, procedures, and capability of Edmonton Fire Rescue Services to provide designers sufficient information to evaluate impact to the effectiveness of emergency services when alternative solutions are utilized.

Instructions for Use

The guideline is separated into four main sections which are meant to guide professionals in both identifying and evaluating where alternative solution designs may impact emergency services.

<p style="text-align: center;">Section 1 Evaluating Impacts to Emergency Services</p>
<p style="text-align: center;">Section 2 Prescriptive Firefighting Measures</p>
<p style="text-align: center;">Section 3 Firefighting Assumptions and Data</p>
<p style="text-align: center;">Section 4 Documentation of Alternative Solutions</p>

GUIDELINES

Section 1

Evaluating Impacts to Emergency Services

Evaluating Impacts to Emergency Services

There is no clear prescription for determining how an alternative solution may impact the capability and procedures of emergency responders, and the evaluation must be made by a competent designer using good fire protection engineering practices. To aid that assessment, the following questions should be used to determine whether a design merits review of impact to emergency response:

1. Does the alternative solution modify any specific firefighting requirement of the NBC(AE), including Division B, Subsection 3.2.5., or other specific firefighting provisions?
 - 1.1. Variance of any prescriptive firefighting measure in the NBC(AE) indicates that the designer must understand and communicate the operational impact of that Variance.
 - 1.2. Equally, any variance which includes reference to Functional Statements F06, F12, or F13 likely impact emergency services.
2. Do the life safety or property protection features of the alternative solution design rely on timely intervention by the local fire service, including for spatial separation/exposure protection?
 - 2.1. The NBC(AE) generally assumes intervention by a local fire department on the timescale of 10 minutes, to correspond to the need to address exposure protection of adjacent buildings. While only a rough estimate, any alternative solution which impacts this intervention, or more generally an intended/known delay to fire department response, must evaluate the impact of that variance.
3. Does the alternative solution introduce equipment, technology, or processes which are novel to Edmonton Fire Rescue Services, or which may be incompatible with technology and equipment used by responders?
 - 3.1. Special instructions for responders may be part of an emergency response plan for a building. This can include systems such as automatic smoke control which may impact fire department procedures for ventilation, and which may require specific pre-incident training or familiarization.
 - 3.2. Adherence to specific emergency response actions by EFRS as part of an alternative solution building design, or utilization of equipment which is not otherwise prescribed/regulated in Division B of the NBC(AE) indicates an impact to responders.
4. Does the alternative solution require special operational plans for occupants which may affect emergency response and intervention?

- 4.1. Shelter in place, including areas of refuge, staged evacuations, and bespoke emergency communication/instruction are examples of procedures which are generally required by the National Fire Code, Alberta Edition for Fire Safety Plans. Understanding the impact of these procedures is essential to the alternative solution designer, to ensure assumptions on fire department intervention are properly attributed.
- 4.2. Strategies which rely on fire department intervention/action or which utilize uncommon occupant evacuation plans indicate a need to assess the impacts to emergency responders.

The above questions are meant to guide the designer on how to consider impacts to emergency services, however they are not exhaustive. The professional is required to adhere to good engineering practice to understand and evaluate the impact of their specific designs.

GUIDELINES

Section 2

Prescribed Firefighting Information

Prescribed Firefighting Information

The NBC(AE) contains numerous prescriptive requirements relating to emergency responders, predominantly within Division B, Subsection 3.2.5. Provisions for Firefighting. These include access requirements to buildings (both routes for apparatus, and access to buildings themselves), firefighting water supply requirements including fire department connections, standpipes, sprinkler systems, and fire pumps. These provisions are relied upon by EFRS to guide their emergency response operations, and any variance/alternative solution affecting this subsection should be given careful consideration by the designer to ensure variances to these provisions do not negatively impact responders. These provisions are summarized here, however the NBC(AE) should be referenced for complete information.

In addition to the regulations referred to above, designers must account for some of the administrative provisions of the NBC(AE), including the distinction that firefighters, specifically during the course of their duties, are included as “building occupants” within the Code’s Objective Statements (see Division A, Notes to Part 2, Objectives). Firefighting assumptions are also highlighted in the Notes to Part 3, Firefighting Assumptions.

Aspects of NBC(AE) Division B, Subsection 3.2.5. - Provisions for Firefighting

Firefighting Access

The NBC(AE) addresses access to many aspects of a building, including above-grade storeys, basements, and roofs, as well as vehicular access routes. Professionals reviewing compliance to the access requirements for firefighting must consider how any alternative solution may affect these prescriptive requirements.

The NBC(AE) does not address the overall design of roadways and access routes more broadly. These requirements are addressed municipally through the City’s Complete Streets Design and Construction Standards. The Building AHJ assumes that application of the City’s Design Standards are met through the municipal design and review process, and designers must be aware of any potential variances or non-conformances to the application of the municipal standards which may affect the expected performance of the NBC(AE) requirements, regardless of whether the access requirements of NBC(AE) Subsection 3.2.5. are intended to be varied.

Water Supply

Water supply for firefighting is prescribed by the NBC(AE) in Article 3.2.5.7., however additional municipal standards for firefighting water apply within the City of Edmonton, based on the Volume 4 Design and Construction Standards, Water. Generally the municipal requirements specifically for fireflow exceed the requirements of the NBC(AE), however designers should verify water supply for firefighters. Specific Available Fire Flow (AFF) information can be obtained from the EFRS Engineer which takes into account both the capacity of the City's water network of mains and hydrants, but also any operational limitations affecting firefighting apparatus including mechanical pump specifications, and losses in required fire hoses.

The municipal standards for firefighting water are based on the Fire Underwriter's Survey Guide, Water Supply for Public Fire Protection. Development Permission is provided based on conformance to this guide such that the FUS Required Fire Flow for any building must be shown to be provided through the Available Fire Flow.

Fire Department Equipment

The NBC(AE) specifies requirements for fire department connections, standpipes, hose connections, hose stations, fire pumps, and fittings and outlets used by firefighters. These features are also regulated by additional reference standards, including NFPA 13/13R, NFPA 14, and NFPA 20. Deviation/variance of these prescriptive requirements should be carefully evaluated for their impact to emergency responders as part of any alternative solution analysis.

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Section 3

Edmonton Fire Rescue Services-Specific Information

Edmonton Fire Rescue Services-Specific Information

This section of the guideline is intended to provide an overview of the basic strategies, response capabilities, fire suppression operations, resources, and service delivery standards for Edmonton Fire Rescue Services, to assist designers in understanding impacts to emergency services through the use of alternative solutions. This section is not a comprehensive manual of fire department operations, and if more detailed, project-specific evaluation and assistance is appropriate, the designer should reach out to the authors of this guideline for additional support. Designers should use the information within this section to evaluate alternative solution impacts to emergency services relative to buildings which are constructed to the prescriptive acceptable solutions from Division B of the NBC(AE).

Edmonton Fire Rescue Services at a Glance

Edmonton Fire Rescue Services is a fully career-service department responsible for a wide range of services - some of which are impacted by environment and building design. The following list outlines these key services:

- Emergency response communications
- Fire suppression (structure, non-structure, industrial, vehicle, and wildland interface)
- Technical rescues
- Response to life-threatening medical situations
- Hazardous materials response
- River/watercraft response
- Fire prevention programs, and public safety initiatives
- Emergency management and planning
- Training and certification of fire service personnel

EFRS establishes service delivery standards through Policy C523A - Fire Rescue Service Delivery, which outlines the Fire Rescue Master Plan. The master plan includes 4 key goals, and seventeen accompanying principles which clarify the role of EFRS. The following section outlines how those goals and principles are put into practice, and provides designers information by which to evaluate how unique designs as part of alternative solutions may impact this service.

Timeliness of Fire Suppression Response

As detailed in the Edmonton Policy C523A, the Fire Rescue Services Master Plan (2012), and Standards of Cover (2019), EFRS strives to conform to NFPA 1710: "Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Career Fire Departments". While this NFPA standard does not prescribe all aspects of operations,

it should be referred to by designers, specifically to clarify the resources, performance benchmarks, functions, and objectives of a generalized career fire department. Some of the key service level benchmarks include:

- The total evaluation and dispatch time for emergency calls will be no more than 90 seconds (90% of the time)
- The total “turnout” time for the responding apparatus will be no more than 90 seconds (90% of the time)
- Travel time for arrival of the first pump apparatus at a fire incident will be no more than 4 minutes (90% of the time).
- A “first alarm” assignment of at least 16 firefighters at a fire suppression event will occur within a travel time of 8 minutes (90% of the time).

These service level targets are useful for establishing the typical arrival time of emergency responders, with the first unit arriving within 7 minutes, and a first alarm assignment of at least 16 firefighters arriving within 11 minutes, upon receipt of an emergency call (including fire alarm notification). The total number of firefighting personnel required will vary depending on the building type (see Fire Fighting Resources below).

Exceptions to these service level targets are identified by the Outside 10-minute Boundary map published on maps.edmonton.ca (under the layer, “ERD Public Data”). For projects outside this response area, careful consideration must be given both to the impact to spatial separation as defined in the NBC(AE), as well as the impact to delayed emergency response.

Fire Fighting Resources

EFRS delineates structure fires as per NFPA 1710, allowing more discrete allocation of firefighting resources based on the expected tasks which are typical of different types of structure fires. This spans from a minimum of 24 firefighters for a single-family dwelling, up to 43 firefighters for what are deemed high-hazard. The minimum initial response generally includes pumper, rescue, aerial/ladder apparatus, and any other specialty apparatus which aligns with EFRS’ Fire Priority Dispatch System. Designers should reach out to this guide’s authors for verification of the initial response for clarification with respect to a specific design.

Buildings which feature characteristics such as intensified occupancy (commercial and industrial uses) and specific features such as the storage or use of dangerous goods, may increase this initial response. Designers wishing to confirm the exact response resources for an intended building may reach out to the authors of this guideline for verification.

Staging of Fire Suppression Apparatus

Staging of fire apparatus is highly variable and dependent on the nature/severity of the event, as well as the order in which the apparatus arrive at the address. Generally, one pump will be staged near the building's fire department connection (FDC), where provided, to augment the building's water-based fire suppression systems. Additional apparatus will coordinate staging based on fire operations needs such as ladder operations (including rescue), hose management, and available firefighting resources (hydrants). Requirements for emergency access routes used for staging are generally addressed by the regulations within the City of Edmonton Design and Construction Standards, Volume 2, Roadways, and the NBC(AE), Division B, Subsection 3.2.5.

Accessibility to buildings is defined in the NBC(AE), and clarified through the City of Edmonton Development Services Small Building Access Policy B19-04, ensuring access to buildings, or additional fire protection, is consistently applied.

Structure Fire Critical Tasks

The following section details some of the critical tasks undertaken by fire responders during structure fire events. While these tasks are generalized, they are common aspects of structural fire response, and designers should use this information to compare/evaluate any impacts to these tasks relative to designs which do not require alternative solutions (i.e. buildings which meet the prescriptive acceptable solutions found in Division B of the NBC(AE)).

- Command
 - a. The first arriving officer assumes Command. This triggers the incident command structure and allows for control throughout the event. Command will report the initial size up. Incoming crews will stage until assigned by Command.
- Search and Rescue
 - a. Search and rescue is assigned by Command, and consists of a major crew (one officer and two or more firefighters) to complete a thorough search and rescue of occupants within a building. Factors affecting this task include the size of the building to determine division of labour. As required, Command will assign a specific area to search and will assign additional crews to other areas.
- Water Supply and Pump Operation
 - a. Water supply is assigned by Command. As part of the first arriving unit, Command has the option to grab a hydrant on arrival, or assign a separate truck to water supply. Any apparatus pumping at an event will require at least one source of water. Every apparatus pumping water requires a dedicated Pump Operator.
- Fire Attack

- a. Fire Attack is a critical crew assigned by Command. The primary objective of Fire Attack is to control and ultimately extinguish any fires, which is split into interior and exterior tasks. Interior attack will bring in a charged hoseline from a pumping apparatus, or connect to an available standpipe system. Exterior attack typically involves a larger flow of water and includes both control/extinguishment of fires within the structure, as well as exposure protection of adjacent buildings. Multiple fire attack crews can be assigned based on the size and needs of an event.
- Lobby
 - a. Lobby is assigned by Command and is responsible for gaining access to the building, controlling the alarm panel, directing residents on where to stage as they exit, locating a building manager if there is one on scene, and generally controlling who goes in and out of the building.
 - b. For buildings with a Command and Control Facility (CACF), the lobby crew manages building systems and other equipment required by the NBC(AE).
- Evacuation
 - a. Evacuation is a major crew, assigned by Command to evacuate a threatened area. Depending on the size and severity of the event, this can be limited to the compartment of fire origin, up to evacuation of the entire building. Multiple evacuation crews could be assigned based on needs.
- Exposure Protection
 - a. Assigned to protect direct exposures of a building on fire. Water streams are used to prevent heat and flame spread to nearby property such as buildings, vehicles and trees.

Equipment Capability

Key operational equipment specifications are provided below for designers to reference. Please ensure the most recent copy of this guideline is being used, as equipment specifications are subject to change. Note that this list includes fire suppression, and rescue equipment, and is not an exhaustive list of other support equipment.

1. Pumping Apparatus
 - a. Each pumping apparatus (including aerial platforms) are equipped with onboard pumps capable of generally discharging 7,000 Litres per minute (total). Note that capacity may be limited by available resources, the location and capability of fire hydrants, as well as the distance of fire hydrants to the staging area. Specific fireflow capacity for all legal parcels in the city can be obtained from the EFRS Engineer.

- b. Pumper apparatus are equipped with 240 m of 125 mm “Hi-Vol” hose utilizing Storz thread type. Adapters are used to connect to the threads on pressurized water sources (hydrants) throughout Edmonton.
 - c. Pumper apparatus are also equipped with 3 m of drafting hose utilizing 6”-NH thread type for connection to non-pressurized water sources (dry hydrants, drafting pools, etc.).
 - d. Pumper apparatus are pre-strung with both 65 mm and 45 mm “attack” lines, with a reach of 75 m. Longer attack lines require additional time to reconfigure hose lines from additional apparatus.
2. Aerial Apparatus (Ladders)
- a. Aerial platform apparatus are equipped with a ladder which can extend up to 30 m, which must generally be placed approximately 10 m from a structure for rescue purposes.
 - i. While the ladder is extended, the aerial apparatus is stabilized by outriggers which extend horizontally outward from the apparatus to give a total width of approximately 6 m.
A swept path analysis, conforming to City of Edmonton’s Swept Path Analysis guideline, ensures access and maneuverability feasibility by aerial apparatus.
 - b. Ground ladders available to EFRS at a structure fire include a 14 ft roof ladder, a 24 ft extension ladder, and a 35 ft extension ladder. Ground ladders require approx ¼ of the working height for set up on the ground
3. Other Firefighting Equipment
- a. Specialty kits for utilization of building standpipes include:
 - i. High Rise (Green Bag) Kit:
 - 1. 30 m of 44mm high-rise hose, pre-connected to 550 LPM nozzle.
 - ii. High Rise (Red Bag) Kit:
 - 1. 15 m of 44mm high-rise hose,
 - 2. 3 m of 65mm high rise hose, pre-connected with gated wye.
 - b. Ground-based monitors are available for firefighters to establish water curtains/exposure protection with an output of up to 1900 LPM.

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Section 4

Documentation of Alternative Solutions

Documentation of Alternative Solutions

Documentation of Alternative Solutions is prescribed by Division C, Section 2.3 of the NBC(AE) - this section should be read as a companion resource to ensure documentation of assumptions, particularly those relating to emergency responders are properly presented within alternative solutions.

Analytical Methods and Rationales

The NBC(AE) requires that proponents of alternative solutions demonstrate analytical methods and rationales to determine/demonstrate compliance. Where appropriate, this is most effectively achieved by adhering to industry best practices for analysis. In the context of alternative solutions which impact emergency services (i.e. fire and life safety and property protection) this includes resources such as those published by the Society of Fire Protection Engineers (SFPE), and the National Fire Protection Association (NFPA). This includes the resources within the Handbooks published by each organization, as well as specific practice guidelines and standards.

Demonstrating compliance to these industry best-practices both reinforces the quality management aspects achieved through their application, but also helps standardize analysis to ensure they are well communicated. They also expedite narrative description within some types of analysis, allowing alternative solution analysis' to be more succinct compared to bespoke approaches to analysis.

Special Maintenance and Operational Requirements

Alternative solutions must be carefully reviewed to understand special maintenance and operational requirements such as maintenance of systems which are not included within the National Fire Code, Alberta Edition (e.g. smoke protection systems). See Inspection, Testing, and Maintenance section of this report.

Aside from operational requirements associated with building systems, special or unique emergency response requirements must likewise be evaluated. This is one of the fundamental purposes of this guideline, and proponents of alternative solutions must take care to ensure that assumptions and limiting or restricting factors associated with emergency response affected by the alternative solution are accurate.

Subjective Equivalency

While alternative solutions within the NBC(AE) are fundamentally based on qualitative Objective and Functional statements, proponents must take care to not rely on subjective assessment to conclude performance of an alternative solution, relative to the acceptable solution. Generally, alternative solutions must objectively demonstrate performance of an alternative solution relative to the

Division B acceptable solutions. This means that conclusions on “approximately equal or better” should not be based on judgement without demonstration of performance, relative to acceptable solutions. This does not limit the application of performance-based design which does not explicitly rely on comparative analysis to the acceptable solution, however it must still be demonstrated how the specific goals of the performance-based design reflect both the objectives, and expected level of performance of Division B. For example, performance-based design which makes use of tenability analysis (such as with a Available Safe Egress Time analysis) need not necessarily establish a performance baseline based on an acceptable solution in Division B if the level of performance implied by the tenability analysis is based on good-engineering and industry best-practices. Where objective demonstration of performance may be uncertain, the alternative solution proponent should adhere to best-practices in performance-based design, including early communication with AHJ's, such as with pre-application meetings.

INSPECTION, TESTING, and MAINTENANCE

Alternative Solutions Utilizing Systems Not Regulated by the NFC(AE)

The National Fire Code, Alberta Edition (NFC(AE)) is a companion document to the NBC(AE), and in part addresses the ongoing inspection, testing, and maintenance (ITM) of fire and life safety systems required by the NBC(AE). This includes mandatory requirements for ITM for common building features such as fire alarm systems and sprinkler systems to ensure these systems operate as intended, including both automatic operation, and manual operation by supervisory staff and/or emergency responders.

While the NFC(AE) specifically regulates ITM for systems prescribed by the NBC(AE), there may be gaps in the ITM procedures for systems introduced as part of engineering design, or alternative solutions. Documentation of these ITM procedures, including commissioning, are required to be provided with documentation of an alternative solution as per the NBC(AE), however this documentation is also necessarily required by the building owner/operator, and the Fire AHJ who may conduct compliance monitoring programs to ensure ITM procedures are adhered to. Therefore, care must be taken by designers to identify all fire and life safety systems which require ITM which is not otherwise specifically regulated/prescribed by the NFC(AE), and ensure the requisite ITM documentation is included with the alternative solution analysis. Note that this is often completed subsequent to design implementation, in which case the alternative solution should clearly indicate requirements for documentation, and the professional responsibility/accountability for completing the identified documentation. This must be coordinated with the Registered Professional of Record associated with the appropriate portion of the project, as well as with the Coordinating Registered Professional to ensure documentation details are not overlooked prior to completion of the project.

MORE INFORMATION

In the cases where this guideline provides insufficient information, the authors, listed below, may be contacted regarding general inquiries. If inquiries are being sought in relation to an in-progress permit application, please contact the plans examiner assigned to the project. This guideline is updated regularly - please ensure the most recent report is being used to obtain the most current contact information.

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DISCLAIMER

The information provided in this guideline is not intended to be used as design or code advice, and professionals utilizing this information are responsible for verification of details. The information is current as per the publication date of the guideline, and is subject to change with advancements in fire department strategies, tactics, and capability.

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