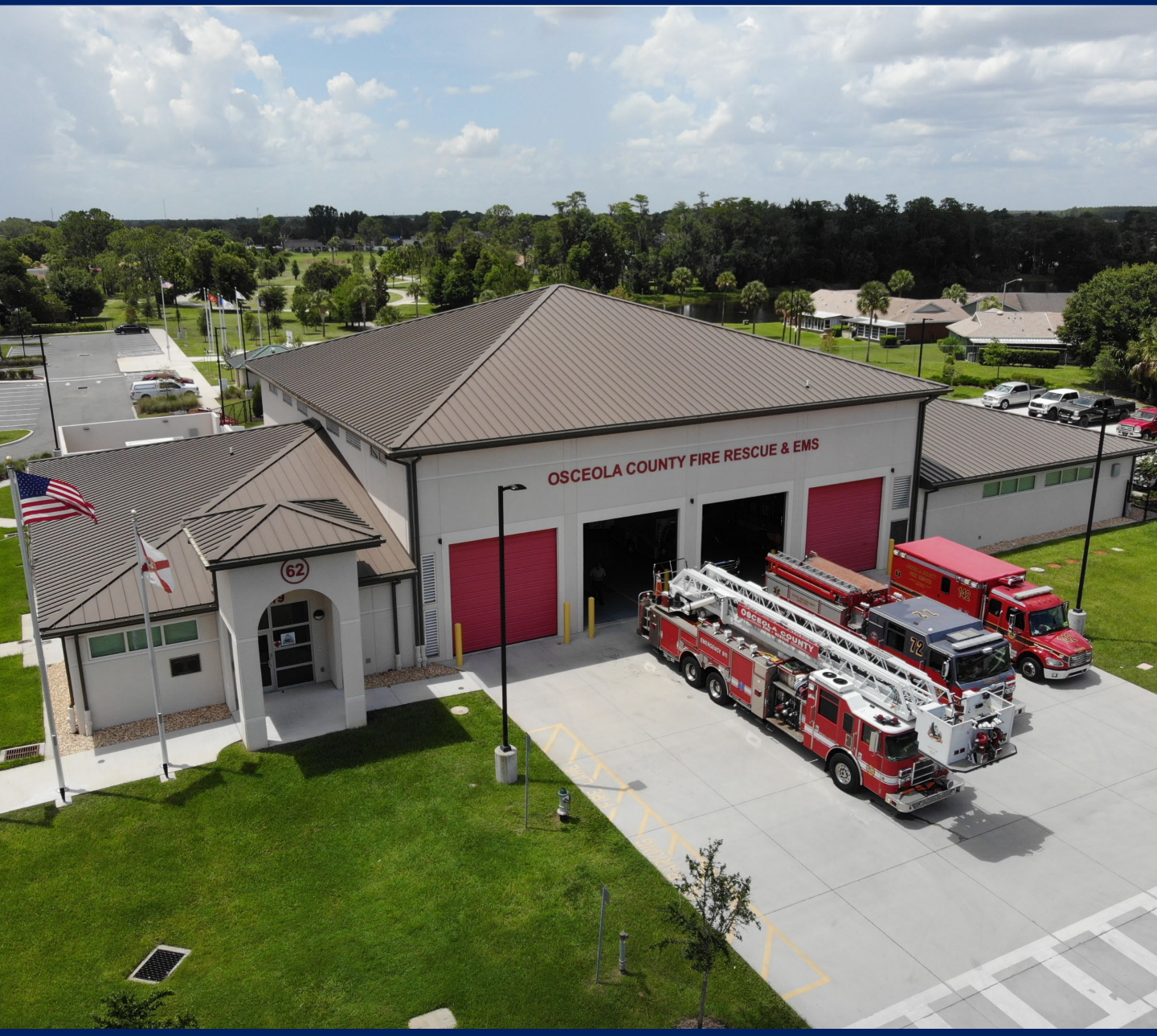
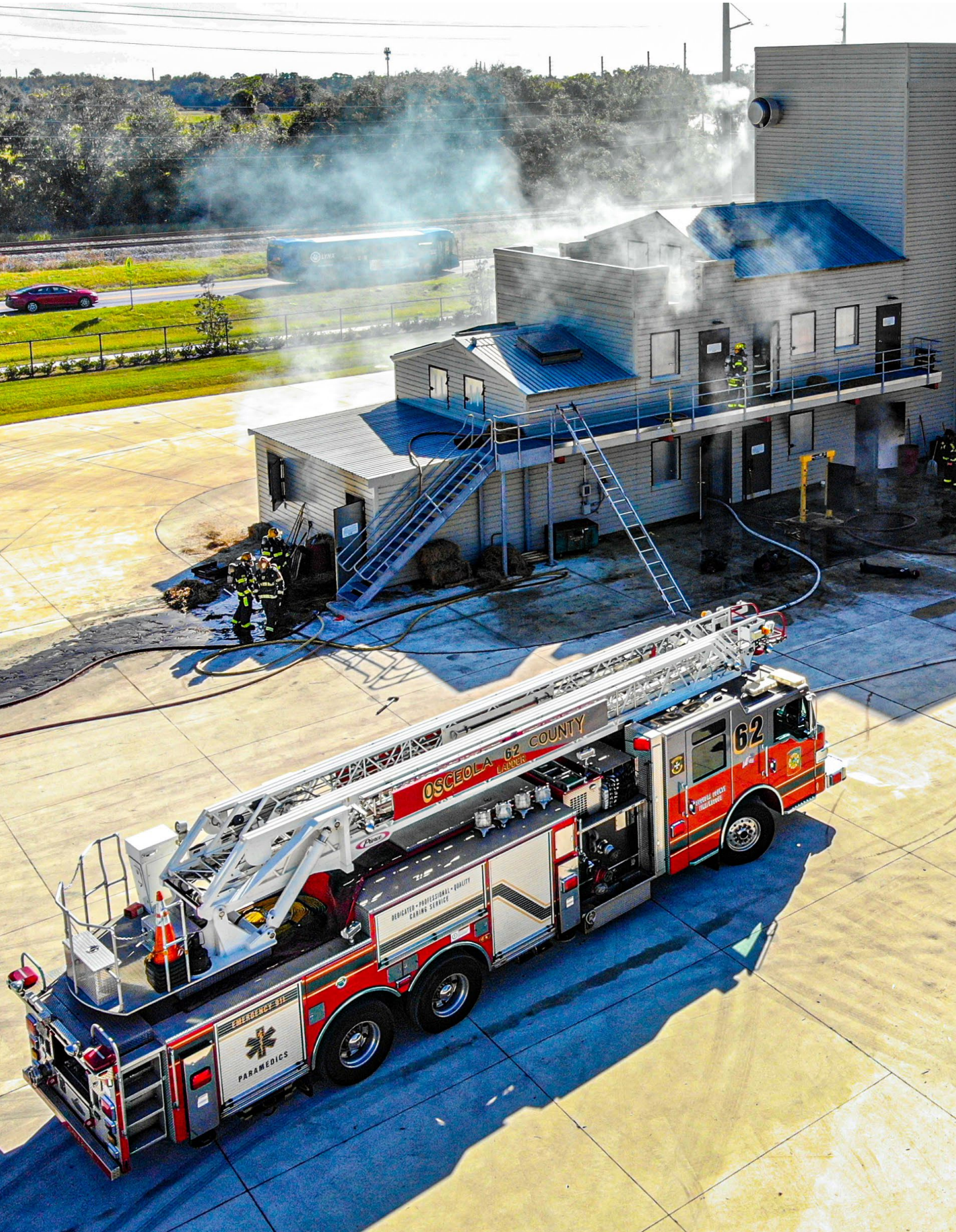
Performance-Based Options and Equivalent Engineering Methods



Office of the Fire Marshal
Kellie M. Krujaick, Fire Marshal

June 2024


OSCEOLA COUNTY
62
LARIMER
EMERGENCY 911
PARAMEDICS

Introduction

An equivalent method of protection provides an equal or greater level of safety. It is not a waiver or deletion of a *Code* requirement.

The prescriptive provisions of this *Code* provide specific requirements for broad classifications of buildings and structures. These requirements are stated in terms of fixed values, such as maximum travel distance, minimum fire resistance ratings, and minimum features of required systems, such as detection, alarm, suppression, and ventilation, and not in terms of overall building or system performance.

However, the equivalency clause in NFPA1:4.3 permits the use of alternative systems, methods, or devices to meet the intent of the prescribed code provisions where approved as being equivalent. Through the rigor of a performance-based design, it can be demonstrated whether a building design is satisfactory and complies with the implicit or explicit intent of the applicable code requirement.

When employing the equivalency clause, it is important to clearly identify the prescriptive-based code provision being addressed (scope), to provide an interpretation of the intent of the provision (goals and objectives), to provide an alternative approach (proposed design), and to provide appropriate support for the suggested alternative (evaluation of proposed designs).

Performance resulting from proposed designs can be compared to the performance of the design features required by this *Code*. Using prescribed features as a baseline for comparison, it can then be demonstrated in the evaluation whether a proposed design offers the intended level of performance. A comparison of safety provided can be used as the basis for establishing equivalency.

Reference Documents

In the process of developing this document, the following documents were referenced:

- **Currently adopted edition of the Florida Fire Prevention Code**
- **Osceola County Land Development Code**
- **Florida Statutes 633**
- **Florida Administrative Code 69A**

Authority

The Fire Marshal is authorized by: Florida Statutes, the Florida Fire Prevention Code, and the Osceola County Land Development Code to enforce fire safety regulations.

It is not the intention of this Standard to contradict or set aside any provision of any other higher level of law or code. If any conflict is discovered, the more restrictive law or code shall prevail.

Compliance with this Standard does not demonstrate compliance or lack of compliance with any other law or code pertaining to other topics.

Administration & Scope

This edition of the Performance-Based Options and Equivalent Engineering Methods Guide shall apply to both new and existing structures and their associated properties located within Osceola County as indicated.

This document provides guidance when opting to use alternative systems, methods, or devices approved as equivalent by the AHJ. Approval of alternative methods, outside the scope of the FFPC, shall be recognized as being in compliance with this *Code*. An equivalent method of protection provides an equal or greater level of safety; however, is not a waiver or deletion of a *Code* requirement.

Definitions

Approved - Acceptable to the authority having jurisdiction.

Alternative Calculations Procedures - A calculation procedure that differs from the procedure originally employed by the design team but that provides predictions for the same variables of interest.

Authority Having Jurisdiction (AHJ) - An organization, office, or individual responsible for enforcing the requirements of a code or standard, or for approving equipment, materials, an installation, or a procedure.

Data Conversion - The process of developing the input data set for the assessment method of choice.

Design Fire Scenario - A fire scenario selected for evaluation of a proposed design.

Design Specification - A building characteristic and other conditions that are under the control of the design team.

Design Team - A group of stakeholders including, but not limited to, representatives of the architect, client, and any pertinent engineers and other designers.

Exposure Fire - A fire that starts at a location that is remote from the area being protected and grows to expose that which is being protected.

Equivalency - An alternative means of providing an equal or greater degree of safety than that afforded by strict conformance to prescribed codes and standards.

Fire Model - A structured approach to predicting one or more effects of a fire.

Fire Protection System - A system individually designed to protect the interior or exterior of a specific building or buildings, structure or other special hazard from fire. Such systems include, but are not limited to, water sprinkler systems, water spray systems, carbon dioxide systems, foam extinguishing systems, dry chemical systems, and halon and other chemical systems used for fire protection use. Such systems also include any overhead and underground fire mains, fire hydrants and hydrant mains, standpipes and hoses connected to sprinkler systems, sprinkler tank heaters, air lines, thermal systems used in connection with fire sprinkler systems, and tanks and pumps connected to fire sprinkler systems (Chapter 633 FS).

Fire Scenario - A set of conditions that defines the development of fire, the spread of combustion products throughout a building or portion of a building, the reactions of people to fire, and the effects of combustion products.

Definitions

Flow Time - A component of total evacuation time that is the time during which there is crowd flow past a point in the means of egress system.

Fuel Load - The total quantity of combustible contents of a building, space, or fire area.

Incapacitation - A condition under which humans do not function adequately and become unable to escape untenable conditions.

Input Data Specification - Information required by the verification method.

Occupant Characteristics - The abilities or behaviors of people before and during a fire.

Performance Criteria - Threshold values on measurement scales that are based on quantified performance objectives.

Proposed Design - A design developed by a design team and submitted to the authority having jurisdiction for approval.

Safe Location - A location remote or separated from the effects of a fire so that such effects no longer pose a threat.

Safety Factor - A factor applied to a predicted value to ensure that a sufficient safety margin is maintained.

Safety Margin - The difference between a predicted value and the actual value where a fault condition is expected.

Sensitivity Analysis - An analysis performed to determine the degree to which a predicted output will vary given a specified change in an input parameter, usually in relation to models.

Stakeholder - An individual, or representative of same, having an interest in the successful completion of a project.

Uncertainty Analysis - An analysis performed to determine the degree to which a predicted value will vary.

Verification Method - A procedure or process used to demonstrate or confirm that the proposed design meets the specified criteria.

Performance-Based Design

Guiding Principles

To ensure consistency with performance-based options and alternative design methods, the Osceola County Fire Marshal's Office has compiled a checklist and sample O&M manual required to meet the minimum standards needed for approval of a performance-based design.

NFPA 101, Chapter 5, provides performance-based alternatives to the prescriptive provisions. The performance-based option is a process that can be used to determine whether the building design satisfies the fire safety goals and objectives specified in the Code. Performance-based options are not intended to replace the prescriptive Code; however, they can be used instead of the prescriptive requirements. The performance-based option provides design flexibility.

Goals and Objectives

The performance-based design shall meet the goals and objectives of the Florida Fire Prevention Code, NFPA 101, (Current Edition), sections 4.1 and 4.2.

Qualifications

The performance-based design shall be prepared by a registered professional.

Independent Review

An approved, independent third-party review and evaluation of the proposed design shall be provided to the Office of the Fire Marshal for review and approval. A third-party reviewer is a person or group of persons chosen by the authority having jurisdiction to review proposed performance-based designs.

Sources of Data

Data sources shall be identified and documented for each input data requirement that must be met using a source other than a design fire scenario, an assumption, or a building design specification. The degree of conservatism reflected in such data shall be specified, and a justification for the source shall be provided.

Final Determination

The authority having jurisdiction shall make the final determination as to whether the performance objectives have been met.

Maintenance of Design Features

The design features required for the building to continue to meet the performance goals and objectives of this *Code* shall be maintained for the life of the building. Such performance goals and objectives shall include complying with all documented assumptions and design specifications. Any variations shall require the approval of the authority having jurisdiction prior to the actual change.

Performance-Based Design

Performance Criteria

A design shall meet the objectives specified in Section 4.2 if, for each design fire scenario, assumption, and design specification, the performance criterion in 5.2.2 is met.

Performance Criterion

Any occupant who is not intimate with ignition shall not be exposed to instantaneous or cumulative untenable conditions.

System and Features

All fire protection systems and features of the building shall comply with applicable NFPA standards for those systems and features.

This requirement applies both to systems and features required by the *Code* that reference applicable standards and to any additional systems or features included in the design at the discretion of the design team. The referenced standards are hereby expected to state maintenance, testing, and other requirements needed to provide positive assurance of an acceptable level of reliability. The referenced standards themselves might be prescriptive- or performance-based.

Means of Egress

The design shall comply with the following requirements in addition to the performance criteria of Section 5.2 and the methods of Sections 5.4 through 5.8:

- ❑ Changes in level in means of egress
- ❑ Guards
- ❑ Doors
- ❑ Stairs – See exclusions
- ❑ Ramps - See exclusions
- ❑ Fire escape ladders
- ❑ Alternating tread devices
- ❑ Capacity of means of egress - See exclusions
- ❑ Impediments to egress
- ❑ Illumination of means of egress
- ❑ Emergency lighting
- ❑ Marking of means of egress

The prescriptive provisions listed in 5.3.2 for the means of egress do not readily lend themselves to performance-based calculation. However, these requirements cannot be excluded from the design. Therefore, these prescriptive provisions are retained for performance-based designs.

Performance-Based Design

Design Specifications and Other Conditions

The design specifications and other conditions form the input to evaluation of proposed designs. Where a specification or condition is not known, a reasonable estimation is permitted. However, the design team must take steps to ensure that the estimation is valid during the life of the building. Any estimations need to be documented.

Clear Statement

Design specifications and other conditions used in the performance-based design shall be clearly stated and shown to be realistic and sustainable.

Assumption and Design Specifications Data

Each assumption and design specification used in the design shall be accurately translated into input data specifications, as appropriate for the method or model.

Building Characteristics

Characteristics of the building or its contents, equipment, or operations that are not inherent in the design specifications, but that affect occupant behavior or the rate of hazard development, shall be explicitly identified.

Operational Status and Effectiveness of Building Features and Systems

The performance of fire protection systems, building features, and emergency procedures shall reflect the documented performance and reliability of the components of those systems or features, unless design specifications are incorporated to modify the expected performance.

Operational Characteristics

The selection of occupant characteristics to be used in the design calculations shall be approved by the authority having jurisdiction and shall provide an accurate reflection of the expected population of building users. Occupant characteristics shall represent the normal occupant profile, unless design specifications are used to modify the expected occupant features. Occupant characteristics shall not vary across fire scenarios, except as authorized by the authority having jurisdiction.

- ❑ Response characteristics
- ❑ Location of remote areas shall be assumed to be occupied
- ❑ Number of occupants
- ❑ Staff assistance
- ❑ Emergency response personnel
- ❑ Post-construction conditions
- ❑ Off-site conditions
- ❑ Consistency of assumptions

Performance-Based Design

Design Fire Scenarios

Design fire scenarios define the challenge a building is expected to withstand. Design fire scenarios capture and limit value judgments on the type and severity of the fire challenge to which a proposed fire safety system needs to respond. The system includes any and all aspects of the proposed design that are intended to mitigate the effects of a fire, such as egress system, automatic detection and suppression, barriers, staff training, and placement of manual extinguishers.

Design fire scenarios come from two sources: those that are specified in 5.5.3.1 through 5.5.3.8, and those that are developed by the design team based on the unique characteristics of the building as required by 5.5.2. In most, if not all, cases, more than one design fire scenario will be developed to meet the requirements of 5.5.2.

Once the set of design fire scenarios is established, both those specified by 5.5.3.1 through 5.5.3.8 and those that are developed as required by 5.5.2, they need to be quantified into a format that can be used for the evaluation of proposed designs. The *SFPE Engineering Guide to Performance-Based Fire Protection* outlines a process and identifies tools and references that can be used at each step of this process.

Approval Parameters

The authority having jurisdiction shall approve the parameters involved in design fire scenarios. The proposed design shall be considered to meet the goals and objectives if it achieves the performance criteria for each required design fire scenario.

Evaluation

Design fire scenarios shall be evaluated using a method acceptable to the authority having jurisdiction and appropriate for the conditions. Each design fire scenario shall be as challenging as any that could occur in the building, but shall be realistic, with respect to at least one of the following scenario specifications:

- ❑ Initial fire location
- ❑ Early rate of growth in fire severity
- ❑ Smoke generation

Required Design Fire Senarios

Design fire scenarios shall comply with the following:

- ❑ Scenarios selected as design fire scenarios shall include, but shall not be limited to, those specified in Design Scenarios 1 – 8.
- ❑ Design fire scenarios demonstrated by the design team to the satisfaction of the authority having jurisdiction as inappropriate for the building use and conditions shall not be required to be evaluated fully.

Performance-Based Design

Design Fire Scenario 1

Design Fire Scenario 1 shall be described as follows:

- ❑ It is an occupancy-specific fire representative of a typical fire for the occupancy.
- ❑ It explicitly accounts for the following:
  - ➢ Occupant activities
  - ➢ Number and location of occupants
  - ➢ Room size
  - ➢ Contents and furnishings
  - ➢ Fuel properties and ignition sources
  - ➢ Ventilation conditions
  - ➢ Identification of the first item ignited and its location

Design Fire Scenario 2

Design Fire Scenario 2 shall be described as follows:

- ❑ It is an ultrafast-developing fire, in the primary means of egress, with interior doors open at the start of the fire.
- ❑ It addresses the concern regarding a reduction in the number of available means of egress.

Design Fire Scenario 3

Design Fire Scenario 3 shall be described as follows:

- ❑ It is a fire that starts in a normally unoccupied room, potentially endangering a large number of occupants in a large room or other area.
- ❑ It addresses the concern regarding a fire starting in a normally unoccupied room and migrating into the space that potentially holds the greatest number of occupants in the building.

Design Fire Scenario 4

Design Fire Scenario 4 shall be described as follows:

- ❑ It is a fire that originates in a concealed wall or ceiling space adjacent to a large occupied room.
- ❑ It addresses the concern regarding a fire originating in a concealed space that does not have either a detection system or a suppression system and then spreading into the room within the building that potentially holds the greatest number of occupants.

Design Fire Scenario 5

Design Fire Scenario 5 shall be described as follows:

- ❑ It is a slowly developing fire, shielded from fire protection systems, in close proximity to a high occupancy area.
- ❑ It addresses the concern regarding a relatively small ignition source causing a significant fire.

Performance-Based Design

Design Fire Scenario 6

Design Fire Scenario 6 shall be described as follows:

- ❑ It is the most severe fire resulting from the largest possible fuel load characteristic of the normal operation of the building.
- ❑ It addresses the concern regarding a rapidly developing fire with occupants present.

Design Fire Scenario 7

Design Fire Scenario 7 shall be described as follows:

- ❑ It is an outside exposure fire.
- ❑ It addresses the concern regarding a fire starting at a location remote from the area of concern and either spreading into the area, blocking escape from the area, or developing untenable conditions within the area.

Design Fire Scenario 8

Design Fire Scenario 8 shall be described as follows:

- ❑ It is a fire originating in ordinary combustibles in a room or area with each passive or active fire protection system independently rendered ineffective.
- ❑ It addresses concerns regarding the unreliability or unavailability of each fire protection system or fire protection feature, considered individually.

Design Fire Scenario 4

Design Fire Scenario 4 shall be described as follows:

- ❑ It is a fire that originates in a concealed wall or ceiling space adjacent to a large occupied room.
- ❑ It addresses the concern regarding a fire originating in a concealed space that does not have either a detection system or a suppression system and then spreading into the room within the building that potentially holds the greatest number of occupants.
- ❑ It is not required to be applied to fire protection systems for which both the level of reliability and the design performance in the absence of the system are acceptable to the authority having jurisdiction.

Design Fire Scenarios Data

Each design fire scenario used in the performance-based design proposal shall be translated into input data specifications, as appropriate for the calculation method or model.

Any design fire scenario specifications that the design analyses do not explicitly address or incorporate and that are, therefore, omitted from input data specifications shall be identified, and a sensitivity analysis of the consequences of that omission shall be performed.

Any design fire scenario specifications modified in input data specifications, because of limitations in test methods or other data-generation procedures, shall be identified, and a sensitivity analysis of the consequences of the modification shall be performed.

Performance-Based Design

Evaluation of Proposed Designs

The verification process starts with the submittal of a proposed design to the authority having jurisdiction. If the AHJ does not consider itself qualified to perform an adequate review of the performance-based design, the AHJ might specify a qualified third-party reviewer. The owner typically incurs the expense associated with the third-party review process.

The first step of the verification process is to identify the goals and the objectives relating to those goals. Attention must be paid to both those objectives that apply to the facility as a whole and those that apply only to limited aspects of the facility. The AHJ's purpose in this review is to determine whether the designer/owner's objectives are commensurate with the community's objectives. Next, the AHJ reviews the performance criteria that relate to each of the objectives for consistency and reasonableness. Do the objectives form a comprehensive package? Are they realistic? The next step involves the characteristics of that which is being protected — people, property, and so on. Once again, a comprehensive, cohesive set of assumptions is sought.

Essentially, the verification process ensures that the logic flow and justification for the choices made are sound; the links between the components are checked to ensure that the design process flows — objectives are to be met by demonstrating that criteria have been achieved through the judicious use of verification methods. Assumptions need to be reasonable, consistent, comprehensive, cohesive, and supported by adequate references.

Presumably, the designer's proposal ensures that all criteria are met for all scenarios. Ultimately, the AHJ is interested in determining whether the designer did a credible job so that the predicted results provide a sufficient margin of safety to allow the design to be approved. Because of the complexity involved in determining credibility, many discussions can be anticipated between the AHJ, the designer, and, if used, the third-party reviewer.

Use

The design professional shall use the assessment methods to demonstrate that the proposed design will achieve the goals and objectives, as measured by the performance criteria in light of the safety margins and uncertainty analysis, for each scenario, given the assumptions.

The choice of which model to select depends on the objectives, the performance criteria to be predicted, and the scenarios to be considered. The model selected should use most, if not all, of the input data specifications and must produce design output that can be directly compared with the performance criteria selected as a baseline for the analysis. Two criteria are usually of greatest interest: the upper-layer temperature and the height of the smoke layer interface. If the objective is to reduce property damage in a telephone vault, then a purpose-built model that predicts smoke filling is adequate. If the objective is the life safety of those not intimate with the fire — both within the room of origin and along adjacent egress paths — in a rectilinear room, then a zone model is adequate. If life safety is the objective and the fire occurs in a more geometrically challenging configuration (e.g., an amusement park fun house or enclosed amusement ride), then a field model is appropriate. If the effects on occupants are to be estimated, an evacuation or toxicity model needs to be used.

Performance-Based Design

Input Data

Input data for computer fire models shall be obtained in accordance with ASTM E1591, *Standard Guide for Obtaining Data for Deterministic Fire Models*. Data for use in analytical models that are not computer-based fire models shall be obtained using appropriate measurement, recording, and storage techniques to ensure the applicability of the data to the analytical method being used.

Data Requirements

A complete listing of input data requirements for all models, engineering methods, and other calculation or verification methods required or proposed as part of the performance-based design shall be provided.
Documentation of the assumptions made by the model user while developing the input data is critical. If the model user does not explicitly state the values used and the references from which they are taken, the credibility of the analysis is decreased.

Uncertainty and Conservatism of Data

Uncertainty in input data shall be analyzed and, as determined appropriate by the authority having jurisdiction, addressed through the use of conservative values.
Procedures used to develop required input data need to preserve the intended conservatism of all scenarios and assumptions. Conservatism is only one means to address the uncertainty inherent in calculations and does not eliminate the need to consider safety factors, sensitivity analysis, and other methods of dealing with uncertainty.
The *SFPE Guidelines for Substantiating a Fire Model for a Given Application* outlines a process for identifying and treating uncertainty and other inaccuracies introduced through the use of fire models.

Output Data

The assessment methods used shall accurately and appropriately produce the required output data from input data, based on the design specifications, assumptions, and scenarios.

Validity

Evidence shall be provided to confirm that the assessment methods are valid and appropriate for the proposed building, use, and conditions.
If the chosen assessment method is a computer model, then the validity of the model with regard to the scenario being modeled might be in question. By choosing a particular model, the designer is tacitly assuming that the model is valid for the particular scenario. Two situations are possible: either the assumption is correct (and there's nothing to worry about) or the assumption is not correct. If the assumption is not correct, this does not immediately invalidate the entire analysis. Part of the argument for using a particular model is that it is the only tool available (i.e., choice is constrained by the available resources) that can be used. If a sensitivity analysis is also performed, this will go a long way in demonstrating that a range of conditions has been considered and the “real” answer has been adequately bounded by the results of the sensitivity analysis.

Performance-Based Design

Safety Factors

Approved safety factors shall be included in the design methods and calculations to reflect uncertainty in the assumptions, data, and other factors associated with the performance-based design.

Documentation Requirements

All aspects of the design shall be documented. The format and content of the documentation shall be acceptable to the authority having jurisdiction.

Technical References and Resources

The authority having jurisdiction shall be provided with sufficient documentation to support the validity, accuracy, relevance, and precision of the proposed methods. The engineering standards, calculation methods, and other forms of scientific information provided shall be appropriate for the particular application and methodologies used. The sources, methodologies, and data used in performance-based designs should be based on technical references that are widely accepted and used by the appropriate professions and professional groups. This acceptance is often based on documents that are developed, reviewed, and validated under one of the following processes:

- ❑ Standards developed under an open consensus process conducted by recognized professional societies, codes or standards organizations, or governmental bodies
- ❑ Technical references that are subject to a peer review process and published in widely recognized peer-reviewed journals, conference reports, or other publications
- ❑ Resource publications, such as the *SFPE Handbook of Fire Protection Engineering*, which are widely recognized technical sources of information

The following factors are helpful in determining the acceptability of the individual method or source:

- ❑ Extent of general acceptance in the relevant professional community, including peer-reviewed publication, widespread citation in the technical literature, and adoption by or within a consensus document
- ❑ Extent of documentation of the method, including the analytical method itself, assumptions, scope, limitations, data sources, and data reduction methods
- ❑ Extent of validation and analysis of uncertainties, including comparison of the overall method with experimental data to estimate error rates, as well as analysis of the uncertainties of input data, uncertainties and limitations in the analytical method, and uncertainties in the associated performance criteria
- ❑ Extent to which the method is based on sound scientific principles
- ❑ Extent to which the proposed application is within the stated scope and limitations of the supporting information, including the range of applicability for which there is documented validation, and considering factors such as spatial dimensions, occupant characteristics, and ambient conditions, which can limit valid applications

Performance-Based Design

Building Design Specifications
All details of the proposed building design that affect the ability of the building to meet the stated goals and objectives shall be documented.

Performance Criteria
Performance criteria, with sources, shall be documented.

Occupant Characteristics
Assumptions about occupant characteristics shall be documented.

Design Fire Scenarios
Descriptions of design fire scenarios shall be documented.

Input Data
Input data to models and assessment methods, including sensitivity analyses, shall be documented.

Output Data
Output data from models and assessment methods, including sensitivity analyses, shall be documented.

Safety Factors
The safety factors utilized shall be documented.

Prescriptive Requirements
Retained prescriptive requirements shall be documented.

Modeling Feature
Documentation for modeling should conform to ASTM E1472, *Standard Guide for Documenting Computer Software for Fire Models*, although most, if not all, models were originally developed before this standard was promulgated. Information regarding the use of the model DETACT-QS can be found in the *SFPE Engineering Guide–the Evaluation of the Computer Fire Model DETACT-QS*.

Assumptions made by the model user, and descriptions of models and methods used, including known limitations, shall be documented.

Documentation shall be provided to verify that the assessment methods have been used validly and appropriately to address the design specifications, assumptions, and scenarios.

Performance-Based Design

Evidence of Modular Capability

The design team's relevant experience with the models, test methods, databases, and other assessment methods used in the performance-based design proposal shall be documented.

Performance Evaluation

The performance evaluation summary shall be documented.

Use of Performance-Based Design Option

Design proposals shall include documentation that provides anyone involved in the ownership or management of the building with notification of the following:

- ❑ Approval of the building as a performance-based design with certain specified design criteria and assumptions
- ❑ Need for required re-evaluation and reapproval in cases of remodeling, modification, renovation, change in use, or change in established assumptions

Performance-Based Design Sample O & M Manual

BLUE MOUNTAIN PRODUCTS
WAREHOUSE No. 16
1234 Industrial Drive Fountain Valley, MT

FIRE PROTECTION OPERATIONS AND MAINTENANCE

SAVE
THIS DOCUMENT MUST NOT BE DESTROYED

Submittal Date: August 14, 2023 Version: A-1.01

BACKGROUND

BLUE MOUNTAIN PRODUCTS is the owner/operator of a 386,000 sq. ft. state-of-the-art warehouse for storing a variety of consumer products that await distribution to our retail outlets throughout the United States, Canada and northern Mexico.

Because of the need for rapid product turnaround in the warehouse, our 24-hour-a-day operations and the value of our employees, merchandise, operations and facilities, several special requirements are in place to assure the highest level of employee and materiel safety.

Our patented, computerized product handling methods are outside the scope of traditional warehousing practices, so our specially designed warehouse reflects our unique needs. Modern building and fire codes do not address our one-of-a-kind methods, so our architects employed "performance-based design" to satisfy the local building and fire officials that Warehouse No. 16 is safe.

This Fire Protection Operations and Maintenance (O&M) Manual is required by the City of Fountain Valley as part of our building and fire code permit conditions.

BLUE MOUNTAIN PRODUCTS is committed to maintain a fire-safe workplace while fulfilling the company's mission of on-time, undamaged and well-displayed merchandise storage and delivery.

All employees and staff are expected to read and familiarize themselves with this document within 30 (thirty) days of their employment with BLUE MOUNTAIN PRODUCTS.

BLUE MOUNTAIN PRODUCTS WAREHOUSE NO. 16
FIRE PROTECTION OPERATIONS AND MAINTENANCE MANUAL

TABLE OF CONTENTS

If you have any questions or comments regarding the information contained within, or if you need assistance interpreting these requirements, please contact:

Osceola County Fire Rescue and Emergency Services
Office of the Fire Marshal
1 Courthouse Square, Kissimmee, Florida 34741
Phone: 407-742-6700
osceolafiremarshal@osceola.org

Office of the Fire Marshal
Kellie M. Krujaick, Fire Marshal
June, 2024