



FIRE BUCKET

September, 2024



A publication of the Central Ohio Chapter of the Society of Fire Protection Engineers

[SFPECOC Web Site](#)

Next Meeting

Date: September 11, 2024

Location: Cohatch
240 South State Street,
Westerville, Ohio

Meeting will be catered by N. High Brewing.

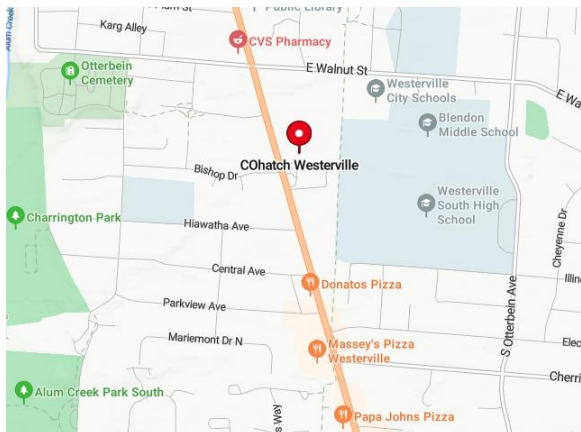
Speaker: Ryan Fogel, Fire Rover

Topic: Targeted Fire Suppression Systems

Cost: \$23.00 (Members)
\$28.00 (Non-members)

Make Reservations with:
Cory Blair
cblair@gbsalarm.com
614-702-1607

Reservations Deadline: Friday September 6,
2024 – 5:00 P.M.



Everyone who plans to attend, including pre-paid members, must make a reservation and check-in with John Falk at the meeting.

Ordering items not on our set menu options will require additional payment.

Meeting fees can be paid online at <https://sfpe-centralohio.square.site/>

**SFPE - Central Ohio Chapter
On-Line Payment Center**

The site works in Chrome, Edge and on iPhone. It does not work on Internet Explorer.

Annual Chapter Dues

The annual chapter dues are \$20. The dues are used to support the chapter operations and promote our chapter.

We also offer a One-Pay option. For \$112, you get you annual dues and 5 chapter meetings. The annual membership runs from September to September. The meetings do not carry over from year to year.

You can pay your annual dues on our Chapter On-Line Payment Center. This secure site is operated by Square. Click here to go to the site.

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Future Meetings

Chapter Meetings

Date: November 13, 2024

Location: TAT Ristorante Di Famiglia,

Speaker: Bill Crowley, Space Age Technology

Topic: Smoke control systems.

Date: January 8, 2025

Location: Viking SupplyNet

Speaker: Brian Berkley, Viking

Date: March 12, 2025 - TBD

Date: May 14, 2025 - TBD

Golf Outings

Burn Center Outing – September 23, 2024

Officer Election

During our May meeting we elected officers for the next two-year term. The officers and board members are as follows:

- President - Bob Fischer
- Vice President - Cory Blair
- Treasurer - John Falk
- Secretary - Bill Laing
- Past President - Phil Sisia
- Board Member - Carl Sellke
- Board Member - Chad Miller
- Board Member - Ryan Oyster
- Board Member - Justin Howell

Fire Protection Criteria

[William M. Laing, CPD, SFPE-COC Secretary](#)

When an MEP designer writes fire protection system criteria on drawings and in specifications, the designer understands the building/space occupancy, usage, and fire risk

based on the owner's Program of Requirements (POR). The designer attempts to clearly indicate on the bid documents the system intended to be provided in the building during construction. Collaboration with the architect and the information found in the (POR) should give the designer confidence for what fire protection is needed. Problem is that the criteria designer does not know how the different contractors/bidders desire to design or install the system into the building and can potentially be at odds when we try.

The criteria should be understandable to all parties involved especially bidding contractors and plan examiners. Typically, the criteria designer is not a licensed fire protection system designer because they don't design that many fire protection systems. The contractor typically has the licensed staff that will provide the final design for approval by the criteria designer and the plans examiner to get a final permit.

How does a Criteria Designer learn what fire protection contractors, plans examiners, and manufacturer's need to know to bid and install the system specified in the criteria? Our local Society of Fire Protection Engineers, Central Ohio Chapter (SFPE-COC) is a valuable organization for gathering into one place, contractors, plans examiners, fire departments, fire protection insurance representatives, and manufacturer's. Our meetings are great opportunities to meet and rub elbows with the people that could be involved in your project. In my past 20+ years providing fire protection design criteria, I learned what information is most helpful to a criteria design from meeting fire protection professionals at our local meetings and asking questions.

2024 Burn Center Outing

The 35th Annual Burn Center Outing will be held Monday September 23, 2024 at The Medallion Club.

We are sold out with a total of 196 golfers. This will be our largest outing!

Information is posted on our chapter web site
[Burn Center Page](#)

Last years outing generated a **\$50,000** donation to the two burn centers. Thanks to all of those who participate.

Benefiting



SFPE 2024 Annual Conference & Expo

Oct 6, 2024 5:00pm to Oct 8, 2024 5:30 (ET)

The 2024 SFPE Annual Conference & Expo is open to everyone practicing in the field of fire protection and fire safety engineering.

We invite you to join us October 6-8 at the Louisville Marriott Downtown!

- This year's conference will include: Premier technical presentations, earning up to 14.50 PDH credits
- Networking opportunities including lunches, receptions, and more!
- Society's and Foundation's Award Presentations
- Post-conference seminars October 9-10 (registration will be through the SFPE e-learning portal)

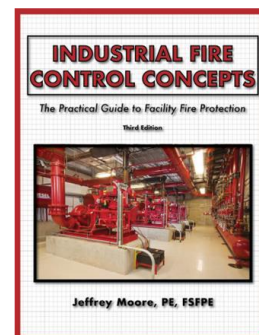
[Click here for information and registration](#)

Industrial Fire Control Concepts Training Class **October 29, 30, & 31 (2024)** **Columbus, Ohio**

Course Overview - This 3-day (23 hour) industrial fire protection and risk management seminar provides the foundational knowledge necessary to examine the level of fire protection required for a specific facility based on applicable codes, standards, and the site-

specific needs and conditions. This knowledge can be used to determine the level of protection required for a new facility and evaluate the level of protection provided for an existing operation. The training received from this course will be invaluable to those responsible for industrial, commercial, institutional, and government facilities.

Facility managers, safety supervisors, facility engineers, insurance loss control consultants, fire service personnel, government officials, and others needing a foundational course on facility fire safety and fire risk management will find this course very informing. This comprehensive course provides a framework for developing, implementing, and evaluating site-specific fire protection and fire risk management strategies. Material Provided - Attendees receive a copy of the 544-page content-rich and heavily illustrated Industrial Fire Control Concepts book, a seminar workbook, and, as a bonus, a copy of the book 51 Conversations with the Wise Old Fire Protection Engineer.



Seminar topics include -

- The scope of the fire problem and the lessons of past industrial fire disasters
- Basic concepts behind the development and spread of fire
- A holistic approach to site-specific fire safety and fire control
- The operation, application, and limitations of various fire protection systems and features, including automatic sprinkler systems, fire detection and alarm systems, and special extinguishing systems
- The necessity of a properly arranged fire protection water supply system, including fire pumps
- Management programs necessary for an effective facility fire control program

- Special fire control concerns of information technology (IT) operations, warehousing and storage, flammable and combustible liquids, and combustible dust

Please visit our website to Register Online:

www.FireCodeAcademy.com

Seminar Location - 65 East State St - Suite 260
- Columbus, OH, 43215

Seminar Costs - \$1295.00 [Lunch and Breaks Provided]

Lead Instructor and primary contact - Jeffrey Moore, PE, FSFPE, CFEI [Email Contact: Moorej@mac.com]

Jeffrey Moore is a licensed fire protection engineer with over forty years of experience in fire protection engineering, fire protection system design, fire code consulting, industrial loss control, and fire loss investigation. His extensive experience includes over thirty-five years in fire protection education and training for the insurance industry, the National Fire Protection Association, the Society of Fire Protection Engineers, fire departments, The Fire Code Academy, and many other organizations.

[Key Changes Proposed for the 2025 Edition of NFPA 13](#)

[Source: NFPA](#)

Sloped Ceilings, Vacuum Systems, and More:

Twenty-one NFPA® codes and standards are part of the annual 2024 revision cycle, meaning 2025 editions of those documents will be released in the fall. NFPA 13, Standard for the Installation of Sprinkler Systems, is one of those documents.



From storage protection under sloped ceilings to sprinkler requirements in elevator pits, this blog breaks down some of the notable proposed changes for the new edition of NFPA 13. (A version of this blog will appear in the Summer 2024 issue of NFPA Journal.)

Storage Protection Under Sloped Ceilings

Some of the most significant proposed changes to the 2025 edition of NFPA 13 address storage protection under sloped ceilings. The impetus for the changes comes from findings in a recent Fire Protection Research Foundation report, "Protection of Storage Under Sloped Ceilings Phase III: Large-Scale Testing Summary and Guidance." The report implemented a full-scale test plan with the goal of determining the impact of sloped ceilings on the protection of storage.



[RELATED: Read more about the first two phases of the FPRF project.](#)

The findings provided the technical basis for several new requirements and additional guidance in NFPA 13 related to sprinkler protection for ceilings with a pitch steeper than 2 in 12, or about 9.5 degrees. Testing has demonstrated that that fire control can be achieved with sprinklers protecting storage under ceilings up to and including a slope of 4 in 12, or about 18.5 degrees. This resulted in a change to NFPA 13 whereby early suppression

fast response (ESFR) sprinklers, as well as control mode specific application (CMSA) sprinklers, can now be installed in spaces with a ceiling slope of up to 4 in 12. Testing has also clarified when sprinkler deflectors in buildings with sloped ceilings should be aligned to be parallel with the ceiling or stairs and when it is permissible for them to be aligned parallel to the floor. There are several locations in NFPA 13 that have proposed changes to reflect this finding.

Vacuum Systems

Another important change to the standard concerns vacuum systems. Sometimes called negative pressure systems, vacuum systems are dry or preaction sprinkler systems that include sprinklers attached to a piping system containing air under negative gauge pressure. Vacuum systems reduce the oxygen in the system, and the vacuum pump removes residual water (condensation) to inhibit corrosion. As a result, they are able to use a lower C-value—which refers to internal pipe roughness in the Hazen Williams formula—because they should have less corrosion in them when compared to dry or preaction systems that contain air. A new section on vacuum systems has been added to Chapter 8, but many of the requirements are the same as traditional dry or preaction systems.

Supplemental Sprinklers

Additionally, the 2025 edition of NFPA 13 introduces the term “supplemental sprinklers,” which is defined in Chapter 3 as “a sprinkler that is installed below an obstruction.” Several sections on obstructions were rewritten using the term “supplemental sprinklers.” New language was also added to include information on various characteristics of supplemental sprinklers, including the positioning, spacing, response, temperature, and k-factor. Chapter 28 added specific language on when and how supplemental sprinklers need to be hydraulically calculated.

Seismic Bracing

Another change addresses the seismic bracing section of NFPA 13, which has been overhauled in this edition to correlate with the recent changes to ASCE/SEI 7, Minimum

Design Loads and Associated Criteria for Buildings and Other Structures. The section on calculating horizontal force on bracing has been redone to integrate ASCE/SEI 7 and introduce the design spectral response acceleration at short periods, which is used to measure of the maximum force an object experiences in an earthquake. The maximum intervals of sprinkler piping restraints have also been updated to align with ASCE/SEI 7. It's noteworthy that there was a tentative interim amendment submitted to the 2022 edition of NFPA 13 on this topic.

Other Changes

A number of secondary changes are also proposed for the standard, including one addressing elevator shafts; sprinklers are no longer required in elevator pits, and they are only required at the top of hoistways under certain conditions. Another change focuses on sections addressing miscellaneous and low-piled storage, which have been simplified and reorganized; the sections have been separated to make it easier for users to follow. Finally, language that referred to the evaluation or modification of existing systems, along with the relevant density/area curves, has been removed from the 2025 edition of the standard. It was replaced with language in Chapter 30 stating that existing systems should be evaluated to the edition of NFPA 13 used to originally design and install the system, or the current edition of NFPA 13.

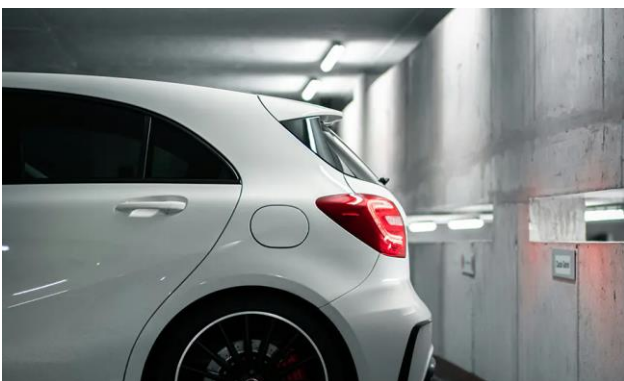
This edition of NFPA 13 incorporates changes to make the standard more consistently organized and user friendly, reduce redundant requirements, and correct errors found in the previous edition. The standard will be discussed at this year's Technical Meeting at the NFPA Conference & Expo® in Orlando; expect to see the 2025 edition of NFPA 13 published in September.

Fire Safety for Electric Vehicles and Other Modern Vehicles in Parking Structures

[Source: NFPA](#)

Over the past five years, the electric vehicle (EV) market has seen substantial growth, with global sales reaching 10 million in 2023 and EV market share rising to 14 percent. Advances in battery technology, falling costs, supportive government policies, and expanded charging infrastructure have driven this growth. Major automakers have committed to EVs, offering more model options, while consumer awareness and demand for sustainable transport have surged, particularly in Europe, China, and North America.

Recent changes in vehicle design, materials, and motor technologies, however, have raised concerns in the fire protection community. Vehicles have become heavier and now incorporate substantially more plastic components. The shift to battery electric vehicles (BEVs), hydrogen fuel cells, and hybrid vehicles also introduces different fire hazards compared to traditional internal combustion engine (ICE) vehicles, potentially requiring modifications to traditional fire protection design strategies and firefighting tactics applied in parking structures.



While vehicle fires are common, large-scale parking garage fires are rare but can cause significant economic losses, as seen in incidents at Liverpool's Echo Arena, Stavanger Airport, and Luton Airport. In August, a fire involving an EV in a parking garage in South Korea damaged hundreds of vehicles and

forced nearby residents to evacuate, triggering debate over whether EVs should be allowed in the country's underground parking garages.

[For the Complete Article, click here](#)

Parking Garage Protection

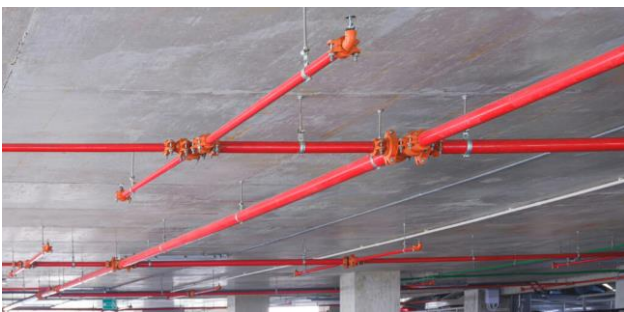
[Source: Sprinkler Age](#)

With the changes to automobile vehicles over the years and the method in the way parking garages are designed, the model building codes and the sprinkler installation standards have been modified for fire protection of these structures. However, these modifications have not fully addressed the issues.

For years, if a parking garage was sprinklered in accordance with NFPA 13 most engineers classified the vehicle parking area as an ordinary hazard group 1 (OH1) hazard. During the 2022 revision cycle, the annex of NFPA 13 was changed from recommending an OH1 to indicating an ordinary hazard group 2 (OH2). Being directly involved with this change showed me the fundamentals and complexity of this issue. The technical committee on sprinkler system discharge criteria had proposals from several sources to make the hazard classification change from OH1 to OH2, extra hazard group 1 (EH1), extra hazard group 2 (EH2), or remove the recommendation altogether. In fact, the first action of this technical committee was to remove the recommendation altogether.

AFSA opposed this first action for several reasons. The OH1 recommendation had been in the standard for years, and to remove it altogether seemed strange without specific evidence. We did understand the fires that occurring in unsprinklered properties were becoming a major loss. We felt some guidance should be given. After many hours of discussion, the technical committee agreed on the OH2 recommendation.

The technical committee statements on the change are very telling. The first revision number 1201 stated, "Fire protection in parking structures, whether open or closed, provides property protection. The NFPA FPRF report (Modern Vehicle Hazards in Parking Structures and Vehicle Carriers) has shown evidence that fires in parking structures not protected by sprinklers can become major conflagrations leading to catastrophic losses. The technical committee welcomes public comment on this topic for review and discussion at the Second Draft meeting." The second revision number 1191 stated, "This language has been clarified to show sprinklers are to be provided in all parking structures and that NFPA 13R has been added to provide sprinklers in low-rise residential structures." We agreed. The vehicle your grandparents drove, the vehicle your parents drove, the vehicle you drive, the vehicle your children (will) drive, and the vehicle your grandchildren (will) drive have evolved over the years. The increase in the use of plastics, the decrease of metal, and the size and weight of the vehicle have changed. The fuel type has also changed. Besides gasoline and diesel-powered vehicles (aka internal combustion engines or ICE), electric-driven vehicles are increasing. What does all this mean? We just do not know how to protect the modern and future vehicles. However, just like every problem, we will find an engineering solution.



We also must consider the way we park and store the vehicles. In general, parking spots have been shrinking, while there is still a large demand for larger SUV and truck-type vehicles in the United States. Vehicle stacker garages are becoming popular in areas where real estate is at a premium. When we park or store vehicles close, the probability of a fire spreading from one vehicle to another

increases. We have little data to provide proper sprinkler protection in any vehicle stacker garages over two levels.

There are several different active research programs trying to provide information for us to get ahead of this situation. One of these is the National Fire Protection Research Foundation's program called "Classification of Modern Vehicle Hazards in Parking Structures and Parking Systems – Phase II." AFSA is participating in the technical panel and has also partially funded this research. We need answers to provide guidance to our industry.

We can state current model building codes and NFPA 88A, Standard for Parking Structures, 2023 edition, require sprinkler protection for all parking garages. Kevin Hall and I are the AFSA representatives on this technical committee. Section 6.4 states:

6.4 Sprinkler Systems

6.4.1 Automatic sprinkler systems shall be installed in all parking structures in accordance with NFPA 13 and NFPA 13R as applicable.

The technical committee statements for this language were also very telling. "Automobile materials have changed substantially since parking garages were considered OH1. Not enough information is currently available to appropriately classify parking garages." The second revision number 1191 stated, "Based on the increase of plastics and other challenges that modern vehicles present, a higher hazard level of protection is more appropriate. Further research in this area is needed."

Currently, sprinkler protection is "typically" being designed to OH2 for a standard parking structure, but it is ultimately the engineer's responsibility to classify the hazard for a particular project. In addition, does the sprinkler spacing impact the performance of the system? Can extended coverage sprinklers produce acceptable results? How long does the water supply have to last? Does the response type of the sprinkler matter? What temperature classifications of the sprinkler produce the best results? How does a dry pipe system impact the fire loss? The research is showing some

interesting data, but to state we have answers to these types of questions would be misleading.

This issue will continue to develop, and the research will lead us to engineering solutions. AFSA will continue to be involved and will keep our members informed. We will ensure the contractor's perspective is known to the technical committees and panels. Let me know your thoughts, and consider this: Would designing and installing a parking garage to an EH2 hazard classification be reasonably possible in areas subject to freezing conditions? Remember, all obstructions are required to be accounted for in an EH2 design, not just structural elements. I look forward to hearing your thoughts.

CFPS exam, candidates must also meet certain education and work experience requirements.

For more information, [click here](#)

Fire Protection Challenges in Wind Turbines

Source: SFPE

Throughout history, wind energy has been harnessed by humans dating back to around 5,000 BC. The Dutch have been recognized for their innovative use of windmills. However, prior to the current century, wind energy was predominantly utilized on a local scale and was not widely integrated into mainstream utility systems. It was not until the oil crises of the 1970s that significant advancements were made in exploring alternative energy sources. Additionally, in the 1990s and 2000s, the federal government initiated proactive measures to promote renewable energy options, such as wind energy.

There are several factors contributing to the increased utilization of wind energy, with some of the most notable reasons including the following:

1. This fuel source is considered environmentally friendly, producing minimal

pollution in contrast to power plants that burn fossil fuels.

2. Wind power is a local energy resource that is typically widely available worldwide.
3. Wind power is considered a sustainable energy source due to its reliance on the continuous presence of wind for energy generation.



The proven efficacy of wind energy as a sustainable energy option is widely acknowledged. However, similar to other beneficial infrastructure projects, its implementation is associated with significant costs. For instance, a standard commercial wind turbine with a power capacity of 2-3 MW may require an initial investment ranging from \$2.5 to \$4 million, with annual operation and maintenance expenses estimated between \$40,000 and \$50,000 per turbine.

It is evident that safeguarding these machines, which range in height from 300 to over 600 feet, is essential to prevent damage or destruction. Fire stands as the second most prevalent cause of wind turbine incidents, with fire incidents frequently contributing to property and personnel losses in wind turbine failures. Hence, a knowledgeable and proactive strategy towards fire prevention and suppression is crucial within the realm of the renewable energy sector for all stakeholders.

[*For the Complete Article, click here*](#)



[Source: National Fire Sprinkler Association](#)

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Society of Fire Protection Engineers Central Ohio Chapter

APPLICATION FOR MEMBERSHIP IN THE CENTRAL OHIO CHAPTER OF SFPE

 NEW RENEWAL

NAME _____

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ARE YOU A NATIONAL MEMBER IN SFPE? YES NO

The annual are \$20. We also offer a One-Pay option. For \$112, you get you annual dues and the 5 chapter meetings. The MCACO meeting is not included. You must pay the full \$112.00 with this membership application or renewal to take advantage of this new program. Annual members runs from September to September and the meetings do not carry over from year to year. Membership in the Chapter includes the member fee for meetings, and a subscription to *The Fire Bucket*, our Chapter's Newsletter

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Central Ohio Chapter SFPE
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Westerville, OHIO 43082
Jcf_sr@yahoo.com

Please make check payable to *Central Ohio Chapter, SFPE*. Applications can be submitted at the next meeting. Please complete a new application every year, so we can keep our database current. Dues run from September 1st to August 31st of each calendar year.