FIRE BUCKET

January 2022

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

SFPECOC.Webs.com

Next Meeting

Date: January 12, 2022

Location: Spaghetti Warehouse – 397 West Broad St. Columbus, Ohio 43215

Speaker: William Sudah, Honeywell Xtralis

Topic: Danger of Lithium-Ion Batteries

Mr. Sudah will be discussing how to prevent thermal runaway with proper advanced detection, and why conventional gas detection practices are ineffective in thermal runaway prevention.

Cost: $22.00 (Members)
$25.00 (Non-members)

Contact: Phil Sisia
Email: Philip@pdssystems.com
614-291-8629 Ext.103

Reservations Deadline: January 10. 2022, 10:00 am.

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.

This meeting is covered by those who have paid the One-Pay option.

Meeting fees and annual dues can be paid online at https://sfpe-centralohio.square.site/

Future Meetings

March 9, 2022
May 11, 2022

Annual Chapter Dues

For this year, the annual chapter dues will be $10. This is a reduction from our normal fee of $20. This was based on many of you paying dues last year, and us not being able to meet due to the pandemic.

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.

https://sfpe-centralohio.square.site/

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

SFPE - Central Ohio Chapter On-Line Payment Center

New Board Members

We will be electing a new slate of Board members for the Chapter in May, 2022. If you are interested in being part of the Board, please contact any of the current members.

Burn Center Outing – September 27, 2021

The 32th annual Burn Center outing was held on September 27, 2021 at the Medallion Club in Westerville, Ohio. Our sell out crowd enjoyed a great day of golf, great weather, camaraderie and fun!

The Board of the Central Ohio Chapter of the Society of Fire Protection Engineers voted to donate a total of **$34,000.00** ($17,000 each) to the Burn Programs at the Ohio State University Wexner Medical Center and Nationwide Children's Hospital!

Benefiting
Nationwide Children's — When your child needs a hospital, everything matters.
The Ohio State University Wexner Medical Center

The 2022 outing will be held on Monday September 26, 2022, at the Medallion Club. Registration information will be available in June 2022.

Battered Batteries

Source: NFPA Journal

A deadly crash in Texas highlights the fire safety challenges posed by electric vehicles

Just before midnight on April 17, a 2019 Tesla Model S careened off a Houston-area road, slammed into a tree, and burst into flames. Two men died in the crash.

While media coverage has largely focused on whether the vehicle's autopilot system was engaged or not—responders say nobody was in the driver's seat at the time of the accident, but Tesla CEO Elon Musk says company data shows the car's autopilot was not engaged—the incident also serves as a reminder of the fire hazard posed by electric vehicles (EVs), as well as the need for continued research into the subject.

Teslas and other EVs run on powerful battery packs containing thousands of lithium-ion battery cells. Newer models of the Tesla Model S sports car, in particular, are powered by battery packs generating as much as 100 kilowatt-hours of energy—enough to power the average American household for about three days.

"The incident over the weekend emphasizes that we still have a lot of work to do," said Victoria Hutchison, a research project manager with the Fire Protection Research Foundation. "There have been significant advancements in the architecture and power of modern EV battery technologies in the past few years. Updated guidance for the fire service is needed and must reflect the current state of EV battery technology."

According to media reports, firefighters spent about four hours on the scene of Saturday's crash, and it took more than 30,000 gallons of water to extinguish the flaming batteries. The

largest firefighting aircraft in the world, for comparison, can only carry about 20,000 gallons of water.

“Our office has never experienced a crash scene like this,” Mark Herman, a constable for Harris County (Texas) Precinct 4, told KHOU News in Houston. “Normally, when the fire department arrives, they have a vehicle fire under control in minutes, but this went on for hours.”

Palmer Buck, fire chief of the Woodlands Fire Department, which responded to the blaze, clarified in a later interview with Car and Driver that the initial fire was put out in a matter of minutes. But smaller reignitions continued to occur and challenge firefighters. It wasn’t until they lifted the charred remains of the Model S into the air and applied water directly to the bottom—where the battery pack is located—that the flames ceased.

“It’s a continual learning exercise, and EVs have been part of that, from the very first Prius hybrids that we saw to the all-electric cars,” Buck told Car and Driver. “The good news for us is that the basic firefighting tool is to put a lot of water on it. That’s an instruction that a lot of firefighters like. That being said, this was our first experience with a large-scale runaway lithium-ion fire.”

Unlike gasoline, which can be drained from a vehicle’s tank, there are no surefire methods of removing energy from a car’s lithium-ion battery when the battery has been damaged in a crash. Because of this, energy remains trapped inside the battery and a process known as thermal runaway can occur, in which the battery essentially continuously overheats and over-pressurizes and is prone to fires, arc-flashing, off-gassing, and sometimes explosions.

“To slow or control the reaction you must remove the heat,” said Hutchison. “But because battery units in EVs are shielded, it’s challenging for the fire service to get water directly on the source to cool the batteries.” This results in longer-than-normal suppression times and reignitions after the fire appears to be suppressed. There have been multiple cases of EV fires that have been put out only to reignite later—sometimes days later, when the vehicle’s already been removed from the scene.

“The inability to detect the amount of energy stranded in the damaged battery unit coupled with the lack of guidance on how to safely remove the stranded energy presents significant challenges to the fire service when responding to EV incidents and creates uncertainty in terms of when the scene is safe,” said Hutchison.

Watch a video from NFPA about stranded energy and thermal runaway in electric vehicles.

The National Transportation Safety Board (NTSB) has announced it will investigate the recent Texas incident, making it the 28th Tesla crash the NTSB has investigated.
In January, the board published a report on EV fire safety, which concluded that manufacturer guidance and federal safety standards are lacking when it comes to emergency response to EV fires.

“While the emergency response guides from electric car manufacturers are adequate in some respects, they’re lacking in others,” NTSB

board member Jennifer Homendy said in a video produced by the NTSB about the report. “For example, they contain almost no information about how to handle stranded energy. Second, federal safety standards don’t address high-speed, high-severity crashes involving cars powered by lithium-ion batteries.”

To address the gaps in safety, the report recommends that EV manufacturers like Tesla enhance their vehicles’ emergency response guides, that the National Highway Traffic Safety Administration consider the quality of those guides in their new car scores, and that organizations like NFPA continue to inform their stakeholders of the fire risk of EVs.

Since 2012, NFPA has offered training to first responders on responding to emergencies involving alternative fuel vehicles, including EVs, and Hutchison said the foundation is hopeful it will soon secure federal grant funding to launch a new research project related to EV firefighting techniques and technologies. That research could help inform future iterations of the training, she said.

Read more about the complex issue of EV crashes and fires in the January/February 2020 NFPA Journal cover story, “Stranded Energy.”

TX Chief Talks Challenges of Tesla Crash Fire

Source: Firehouse Magazine

Car fires are a common occurrence on the job for firefighters, and in many cases, they're routine calls that can be quickly handled.

But the new generation of electric vehicles can create new challenges for crews, as a Texas department discovered over the weekend. The Woodlands firefighters responded to a fiery crash involving a Tesla Model S on Saturday. The car had crashed into a tree and burst into flames, killing the two people inside.

"All the damage that you see in the pictures happened in the first few minutes of the fire," Chief Palmer Buck told Firehouse.com, adding that the fire didn't have a lot of additional fuel despite crashing in a grassy vacant lot. "I was impressed by the amount of heat ... that really destroyed the car in a relatively quick time."

Even though the flames and intense heat flared only for a very brief time, leaving nothing but the vehicle's charred skeletal frame. Initial reports had said crews spent four hours extinguishing the fire, but Buck said they were able to put out the flames within four minutes of arriving at the scene.

But firefighters did remain at the scene, passively cooling the vehicle as the battery continued to reignite. The circumstances of the incident--the car's position blocking direct access to the battery and the bodies of the two occupants still inside--prevented them from immediately getting to the battery pack.

"Our problem was, we had an accident/crime scene that needed to be investigated--we still had two bodies in the car--we couldn't be aggressive with our firefighting efforts, so we just did some passive cooling," Buck said. "That went on for a couple hours, where we just ran a passive hose line to it."

The car also had an "autopilot" driver-assistance feature, but it's not clear if it was engaged or if it contributed at all to the accident.

Massive Blaze Burns Through QVC Warehouse in NC

Source: Fox 8

ROCKY MOUNT, N.C. (WNCN) – Crews from six counties and 45 different agencies battled a massive fire at the QVC Distribution Center

located on QVC Boulevard, off Highway 64 in Rocky Mount Saturday morning.

One worker was reported missing by family members, but there were no injuries during the fire, officials said Saturday afternoon. The blaze damaged 75 percent of one building of the distribution center for the home-shopping television network.

QVC officials reported that all workers were accounted for, but one family later said they had not been in contact with a relative they knew was working when the fire broke out, officials said.

Rocky Mount fire officials said Saturday afternoon that firefighting efforts were defensive from the start of the blaze just after 2 a.m. There were 47 water drops on the fire from aircraft overnight, officials said.

Rocky Mount fire officials said the fire was still not under control as of 3 p.m. Saturday when smoke could still be seen from the building and fire officials said there were active “hot spots” they were trying to access.

By 7 p.m. Saturday, the Edgecombe County Sheriff’s Office said only 60 to 70 percent of the fire has been contained and crews are still actively working it.
Reports across social media said flames could be seen for miles during the night. During the blaze, video showed large fireballs rolling upwards from the structure.

According to a Facebook post from the Rocky Mount Area Chamber of Commerce, up to 2,500 families will be affected by the fire.

“It’s a sad day for Rocky Mount,” Mike Causey, North Carolina Commissioner of Insurance and State Fire Marshal, said at a news conference. Causey said it was the largest fire he had seen during his lifetime.

“My heart goes out to the folks that right here at Christmas that lost jobs — at least temporarily,” Causey added.

Officials said Saturday afternoon that the building had a sprinkler system and it was working during the fire until the massive blaze “overtook” the sprinklers.

A drone was used during the fire to help fire crews direct water streams on the blaze, officials said.

Additional Stories About the QVC Fire can be found here:
Firehouse Magazine
CBS 17

Totally Vulnerable – Another Fire Involving Combustible Cladding

Source: NFPA Journal

After fire tears through a Milan apartment building, the high-rise’s cladding is now under scrutiny

On August 29, a fire destroyed a 20-story apartment building in Milan, Italy, and experts say combustible components in the building's facade was likely the cause of how rapidly the blaze spread.

Videos posted online show flames consuming the entire outside of the building in just over three minutes as large, smoldering chunks of the structure's exterior walls break off and fall to the ground—an observation often seen in large-scale facade fires. Although it appears the building will be a total loss, no deaths or injuries have been reported.

Comparisons to Grenfell

In the hours following the recent Milan blaze, several building safety experts and non-experts alike shared their thoughts about how a combustible materials on the outside of the building likely fueled the fire.

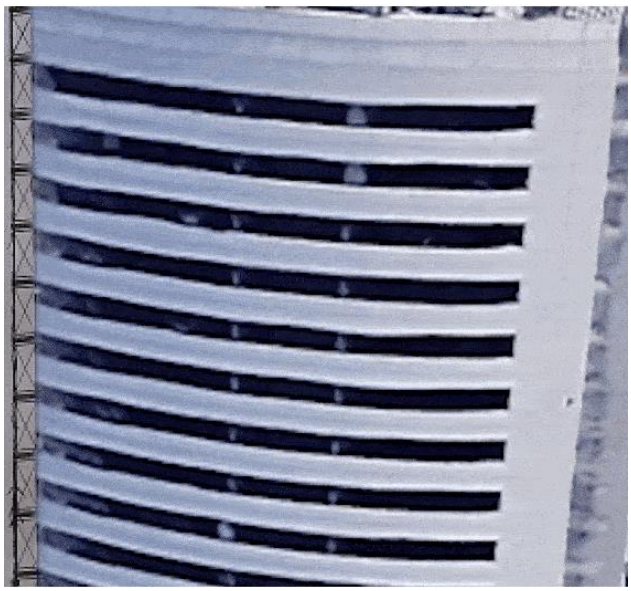
"The facade of the building was built with combustible materials," Angelo Lucchini, professor of technical architecture at The Polytechnic University of Milan, told a local news outlet, according to The Guardian.

"Is flammable cladding more common than we think?" wondered one person on Reddit, a popular social media, news, and discussion website. "How does the entire building go up like that otherwise?"

Many people, including the mayor of Milan, likened the recent fire to the catastrophic Grenfell Tower fire, which killed more than 70 people in London in 2017. In that incident, cladding and insulation containing high levels of combustible plastics were blamed for the fire's rapid spread.

RELATED: Listen to an NFPA podcast about the Grenfell Tower fire, which marked its four-year anniversary in June

Mayor Beppe Sala wrote on Facebook, according to Reuters. "The tower was built just over 10 years ago and it is unacceptable that such a modern building should have proved totally vulnerable."



BEFORE & AFTER Images from Google Earth and Getty Images show the 20-story tower's light-gray cladding before and after Sunday's massive blaze.

"What was clear from the start was that the building's outer shell went up in flames far too quickly, in a manner reminiscent of the Grenfell Tower fire in London a few years ago," Milan

A growing global threat

Fires fueled by combustible exterior wall assemblies—which are often added to buildings to improve aesthetics and energy efficiency—used to be uncommon, but the number of

incidents has risen drastically in the past 30 years, according to Birgitte Messerschmidt, director of Applied Research at NFPA.

"According to research done at Imperial College in London, the frequency of facade fires in large buildings has increased by seven times in the last three decades," Messerschmidt writes in an article published in NFPA Journal in May 2020. "Other researchers have identified 59 fires involving external walls on high-rise buildings between 1990 and 2018, with 36 of these occurring since 2010." And as global trends favoring urbanization bring more people to cities and more high-rises are constructed to house those people, Messerschmidt said this problem will only get worse in the coming years.

One of the first steps needed to address the problem is collecting more data about facade fires. "It is important to recognize that there is an opportunity to learn from failures, and even successes, and develop strategies based on real-world fire incidents," Messerschmidt writes. "The education of stakeholders, growth from previous failures, and quantification of this global issue demand much more data than are currently available today."

Read the full article here, and watch a related video from NFPA Journal about facade fires below.

Editor's Note: The Fire Bucket has had numerous articles about combustible exterior wall panels. See the following editions for details:

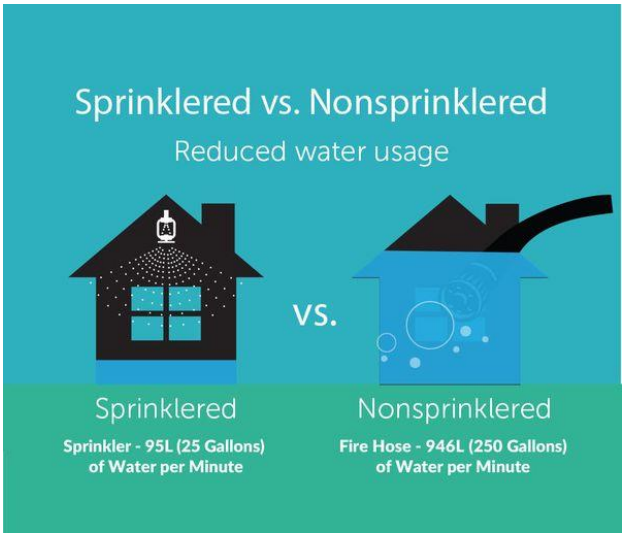
Grenfell Tower – October 2017
Bellagio Monte / Carlo Hotel - May 2017
Combustible Walls - March 2018

Did You Know

Source: National Association of State Fire Marshalls – Facebook

November 3, 2021 - Myth #3 – Water damage from sprinklers is worse than fire damage.

Fact - A sprinkler flows 10-26 gallons of water per minute. A fire hose flows 250 gallons of water per minute. The property loss in a sprinklered home fire is a small fraction of the typical loss in an un-sprinklered home fire.



The Power of a Fire Hose

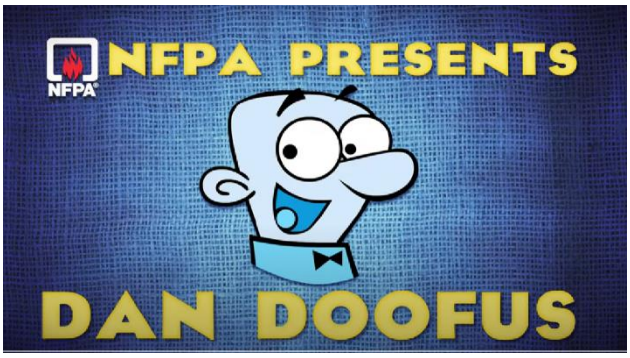
Source: Firefighter Page – Facebook Novernber 1, 2021

Click Here or on the picture for Video

Dan Doofus Realizes Smoke Alarms Are an Alarming Trend

Source: NFPA

Click on the picture to see an NFPA video.



Web Links

SFPE Central Ohio Chapter
www.sfpecoc.webs.com

Society of Fire Protection Engineers (National) www.sfpe.org

American Fire Sprinkler Association
www.firesprinkler.org

ICC Website
www.iccsafe.org

National Fire Sprinkler Association
www.nfsa.org

Ohio State Fire Marshal
www.com.state.oh.us/sfm

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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 _____

COMPANY _____

ADDRESS _____

PHONE NUMBER _____

E-MAIL ADDRESS _____

ARE YOU A NATIONAL MEMBER IN SFPE? ☐ YES ☐ NO

For this year, the annual chapter dues will be $10. This is a reduction from our normal fee of $20. This was based on many of you paying dues last year, and us not being able to meet due to the pandemic. The One-Pay option is back for this year. For $98, you get you annual dues and 5 chapter meetings. The MCACO meeting is not included. You must pay the full $98.00 with this membership application or renewal to take advantage of this program.

You can pay your annual dues on our Chapter On-Line Payment Center. This secure site is operated by Square. https://sfpe-centralohio.square.site/

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

PLEASE MAIL APPLICATION TO:

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Central Ohio Chapter SFPE
5700 Cali Glen
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.

September 2021 – August 2022