

FLASHPOINT

VOLUME 23, ISSUE 1

SEPTEMBER 2017

PHILADELPHIA- DELAWARE VALLEY SFPE

Special points of interest:

- WELCOME BACK!
- DUES WILL BE DUE SOON!

Inside this issue:

MEETING INFO	1
PRESIDENTS SPARK	2
NEW MEMBERSHIP	2
SOLAR PANEL ARTICLE	3
DRONES?	4
CALENDER OF EVENTS	5
BOARD MEMBERS	6

SEPTEMBER 2017 MEETING

SFPE Meetings are back! Please see below for the September meeting agenda.

DATE: TUESDAY SEPTEMBER 12, 2017

LOCATION: JACOBS ENGINEERING GROUP,
THREE TOWER BRIDGE, SUITE 3000,
CONSHOHOCKEN, PA.

TIME:

5:30: FELLOWSHIP TIME

6:00 PM: DINNER

DINNER PROGRAM:

Our speaker will be Bryan Berley. Bryan is the National Technical Representative for Viking for the North East. He is responsible for working with engineers on specifications for Viking, Fireflex, and Minimax products. Brian's presentation will focus on *negative* pressure dry systems.

This will be your opportunity to learn about this new technology, and ask the manufacturer any questions regarding its operation and applications.

COST: \$25.00 FOR DINNER AND PROGRAM

RESERVATIONS BY: 12:00 NOON
FRIDAY SEPTEMBER 8, 2017.

PLEASE RSVP WITH:
JERRY FORSTATER
jif@profsyseng.com

WELCOME BACK!

PRESIDENT'S SPARK

The Grenfell Tower fire in London this summer was tragic reminder of the important role each one of us plays in creating a fire safe environment and in protecting lives. This building had many deficiencies. Although it had recently been renovated the building had only one exit stair, was cited for clutter throughout the corridors and inoperable fire doors, was not sprinklered, had a questionable alarm system, and had an exterior wall (just installed) that created a condition for unchecked vertical fire spread. This was a perfect storm of bad conditions.

While this dramatic event took headlines for a few weeks, locally there are hundreds of fires that occur each day that could be prevented or mitigated by appropriate fire safety systems. There are many lessons to be learned from Grenfell and these other incidents, but the most important is that we cannot be complacent about fire safety. We each have a role to play in the safety of our families and ourselves. As members of the Society of Fire Protection Engineers, we have a greater responsibility than most in educating people about fire safety and in using our knowledge to create fire safe environments.

I am looking forward to the 2017-2018 Chapter year as an opportunity for each one of us to spread the word about fire safety and the SFPE locally, to network with colleagues and members of other affiliated organizations, to learn from technical experts, and to continue the progress we made last spring in growing our scholarship funds.

I look forward to seeing you at an upcoming meeting.

EAGLES TRIVIA!
IN WHAT YEAR
WAS THE PHILA-
DELPHIA EA-
GLES FOUNDED?

ANSWER ON
PG.6



NEW MEMBERSHIP!

SFPE Del-Val is pleased to accept the following members approved by the Board and voting officers on August 8, 2017. All have shown required experience in fire studies and systems to earn this status in the association.

Christopher Zuccarelli works for Oliver sprinkler and has a fire protection engineering Associates degree from Delaware Technical Community College.

Stephen Trimmer, SET, is a design technician working for Oliver sprinkler with NICET level III certification and has a significant fire protection background.

Drew Gerard, PE, CFPS is a fire protection design consultant and area practice leader for Telgian, a code consulting firm. He is a registered engineer in many states in fire protection, an associate member of SFPE and Certified Fire Protection Specialist.

Lawrence Lucier is a level II NICET fire protection engineer with 41 years in the fire alarm and fire suppression industry as well as a graduate of Rensselaer Polytechnic Institute. He works for ORR fire protection.

Matthew Schneider attended Drexel University and worked for several firms as plumbing designer and plumbing department head. He is now plumbing department head at McCue engineering, which includes fire protection and is a member of ASPE and ASHRAE.

We welcome all of you to the best chapter on the east coast and hope you participate in our varied and informative schedule of events.

Best wishes from,
The Board and Officers

FIRE PROTECTION RISKS OF SOLAR PANEL ARRAYS AND SUBROGATION EFFECTS

Solar panel arrays are now ubiquitous for gathering sunlight and converting electromagnetic radiation into energy. But this is not a simple task.

Sunlight must be converted by photon energy - photons - onto large plates which convert into bundles of electricity in a direct current mode. This is converted to alternating current through inverters. This is where conversion get tricky, and we'll come back to this at the end of the story. To continue, NFPA requires that there be fused disconnect at each location. This is no different then air-conditioning starter motors, spas, and outdoor pumps. It makes complete sense. Stop the power where a short-circuit occurs, or where the local live system needs shut down.

Now comes the risk part of the story, and unfortunately this is real and local to Philadelphia. A major corporate center had a large office building and decided to go green. It was part of their social promise. Unfortunately, keeping this social promise undermined business continuity directly due to improper fire and emergency response procedures that were never tested or acted upon within the emergency procedure response plan by first responders, nor the owner.

So here's unfortunate outcome of the story. Let's start with a flat roof, membrane style, and the roof is completely covered with solar panels, fused disconnects, and the soon to be famous inverters. Not to mention conduits running all over the place.

A fire breaks out in one of the electrical systems prior to the fused disconnect. The fire burns for over 15 minutes until fire service comes at which point the roof is fully engaged around the area and fire and is burning through the membrane roof and into the structure below, into the interstitial space, and into the protected areas. I think you know where this might be going.

The fire service, sensing imminent danger to first responders on the roof, decides to turn off all main power to the building. Yep. They got the electrical service disconnected from the entire building and site. The fire burns through the roof while fire service attempts to mount suppression proving not only inadequate, but insurmountable.

No power; no fire pump. No fire pump; no water. No water; no suppression. No suppression; yikes, a catastrophe. Building gone!

Inverters are generally only 50% efficient because they have to cycle through the DC power and it's coming in, and rectified by making the power a sinusoid. You can do this a number of ways. One way is to convert multiple square waves of DC and combine them into one clean sinusoidal wave, or have one massive rectifier, that blows out heat as a byproduct.

Whenever one of these two methods goes awry, the heat buildup is caused by DC flowing where AC should be. Heat, oxygen and readily accessible fuel from plastics, silicon, circuit boards and conductors make a great combination for combustion, which is exactly what happened.

This is a multi million dollar lawsuit with subrogation claims going to the fire alarm contractor, the solar system contractor, the engineer, the fire department, and yes you got it, the "deep pockets" roof manufacturer.

And you know, it's the roof manufacture who had nothing to do with the installation and who strenuously avoids any loads, penetrations and especially solar systems on roofs. Watch for insurance riders in the future on solar panels. Big ones.

Have a safe holiday, and reach out to the needy in Texas.

EYE IN THE SKY: DRONES FOR FIRE SERVICE TRAINING

THOMASA D. KUGLIN

Drones have added tremendous value in the fire service since the beginning of the second decade of this century. In its multitude of uses ranging from a 360-degree size-up tool to delivering high-profile images in real time to commanders as they decide how to respond, conducting flyovers of areas involved in natural disasters, and locating seats of the fire in firefighting operations, to name a few. Drones used for fire service training can also be a substantial value added tool. Drones used in training have many applications and advantages that should be considered as a major component of any training program.

I had the luxury to witness and be a part of training in which a drone was used to capture real time footage. I recently attended an extreme fire extinguisher school in Wisconsin in which all prop evolution footage was recorded using a drone. I did not realize the impact and benefits a drone could provide within a training program. In the age where safety is priority one, using a drone for fire service training provides an increased opportunity to train safer as well as enrich fire service skills and techniques. Drone use for fire service training also provides other valuable benefits:

- Provides a “global” aerial view of training evolutions on the training ground.
- Assist training officers in locating and identifying strengths and weaknesses in technique.
- Used as a reinforcement and evaluation tool to validate and add credibility to a training program.
- Real-time footage capture can be used as an ongoing training evaluation tool for specific programs.
- Incorporate operations to promote firefighter safety.
- Act as an “unmanned instructor” in real-time to correct problems as they occur.
- Provide students with specialized, individual coaching opportunities.



Drones used for in fire service training are cost-effective and provides an ease of use that promotes sound risk management principles and increased situational awareness and control of your training scenarios. Technology in training offers great rewards, optimal training program development, and the ability strengthen your delivery model by enhancing training evaluation.

In the video, footage is captured from various aerial vantage points that reinforce the risk-benefit model of drones in fire service training programs. It allows you to examine and evaluate every aspect of technique, safety practices and demonstrates the use as a virtual instructor in which the human instructor can maintain a position location, have the ability to oversee a training evolution and allow for stoppage of potential unsafe acts.

FLASHPOINT

“The purpose of FLASHPOINT is to provide a forum for the transfer of information between members of the Philadelphia-Delaware Valley Chapter of Fire Protection Engineers (SFPE) and to give the chapter visibility.

Newsletter/Publicity Committee: **Dyllon Slatcher**

Information for Publication can be submitted to: Dyllon Slatcher

EMAIL: dslatcher@OliverFPS.com

This newsletter is published 9 or 10 times per year (September through June) and received as part of membership of the chapter. Membership dues are \$25.00 Collected annually in the fall each year. For an application of membership please contact:

JERRY FORSTATER
jif@profsyseng.com

VISIT OUR WEBSITE AT:
www.sfpephiladelphia.org

Articles written are the views of the Author and not necessarily those of the Philadelphia_Delaware Valley Chapter of SFPE

September 2017

Sun	Mon	Tue	Wed	Thu	Fri	Sat
					1	2
3	4 LABOR DAY	5	6 NJ ASCET MEETING	7	8	9
10	11 PATRIOT DAY	12 PHILA/ DELVAL SFPE CHAPTER MEETING	13	14	15	16
17	18	19 BERKS COUNTY ASCET MEETING	20 DELAWARE ASCET CHAPTER MEETING	21	22	23
24	25	26 PHILADELPHIA ASCET MEETING	27	28	29	30

SEPTEMBER 4: LABOR DAY

SEPTEMBER 6: NJ ASCET MEETING

SEPTEMBER 11: PATRIOT DAY

SEPTEMBER 12: PHILADELPHIA DELAWARE VALLEY SFPE CHAPTER MEETING

SEPTEMBER 19: BERKS COUNTY ASCET MEETING

SEPTEMBER 20: DELAWARE ASCET CHAPTER MEETING

SEPTEMBER 26: PHILADELPHIA ASCET CHAPTER MEETING



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**Society of Fire
Protection
Engineers**

We're on the web at
[Www.sfpephiladelphia.org](http://www.sfpephiladelphia.org)

The 2017 Business meeting was held at the Great American Pub this past may. The night was spent with great friends and good food! Another successful and fun filled evening.

Many scholarships were awarded this year. However, due to scheduling conflicts only one recipient was able to attend. Allison Lowe of Laurel, DE, who attends Eastern Kentucky University and a graduate of Delaware Tech's FET Program.

Thank you to everyone that attended!

PHILADELPHIA DELAWARE VALLEY SFPE 2017 BOARD

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MISSION STATEMENT

The Philadelphia/Delaware Valley Chapter purpose is to advance the art and science of fire protection engineering and its allied fields, for the reduction of life and property losses from fire, to maintain high ethical standards on engineering among its members and to foster fire protection education.

Recognition of fire protection engineering as a discrete engineering discipline is a prime goal. Engineering disciplines exist because there is a special body of knowledge based on the fundamentals of mathematics, physics, chemistry, engineering science and economics.

The chapter strives to facilitate sharing of sound engineering experiences and knowledge between its members and the fire protection community in general with an active program of education and scholarship activities.