President’s Message….

Our Spring Technical Symposium with AFAA-NJ, held May 18th at the Hanover Manor was a great success. The speakers were informative, timely and presented very relevant subject matter. We thank Mike Ventola, Morris Stoops, Ben Marshall, Al Thornton and Jerry Naylis for their time and for sharing their expertise and knowledge with the attendees. We also had 30 vendors participate in the Trade Show. Thanks to all of them for making our program such a success. Our annual Meeting is June 19th at the Hanover Manor. We will have election of new Chapter Officers, summary of a great Chapter year, extended food menu and a technical speaker. Start the summer with your peers and come on out and have some fun.

I want to thank all of the Chapter Officers, Directors and support staff for making the past two years of my term very enjoyable and productive. We have accomplished some important goals, the highlight being the establishment of the new SFPE NJ NY Metro Chapters Education Foundation. We have been discussing this Foundation idea with the NY Metro Chapter for years. Through hard work and determination we finally got the Foundation organized and up and running. The Foundation can now move forward and help FPE students financially through our Scholarship Program. The Foundation is also looking into hosting Fire Protection Engineering courses, classes and training to support our members as well as local Engineers, Architects and Code Officials. As event ideas become reality we will be looking for volunteers to participate and to become part of the Foundation community. You will hear more about the Foundation and the programs as the rest of the year progresses. Watch the Fusible Link for details.

To all of the Chapter Members thanks for your continued support. See you all at the June Meeting!!

Rich Reitberger,
Chapter President
ExxonMobil Torrance Refinery
Electrostatic Precipitator Explosion
Torrance, California

Incident Date: February 18, 2015
On-Site Property Damage, Catalyst Particles Released to Community, Near Miss in MHF Alkylation Unit
No. 2015-02-I-CA

KEY ISSUES:
- Lack of Safe Operating Limits and Operating Procedure
- Safeguard Effectiveness
- Operating Equipment Beyond Safe Operating Life
- Re-use of Previous Procedure Variance Without Sufficient Hazard Analysis

Published May 2017
CSB • ExxonMobil Torrance Refinery Investigation Report
1.0 EXECUTIVE SUMMARY

On Wednesday, February 18, 2015, an explosion occurred in the ExxonMobil Torrance, California refinery’s Electrostatic Precipitator (ESP), a pollution control device in the fluid catalytic cracking (FCC) unit that removes catalyst particles using charged plates that produce sparks—potential ignition sources—during normal operation. The incident occurred when ExxonMobil was attempting to isolate equipment for maintenance while the unit was in an idled mode of operation; preparations for the maintenance activity caused a pressure deviation that allowed hydrocarbons to backflow through the process and ignite in the ESP.

The CSB found that this incident occurred due to weaknesses in the ExxonMobil Torrance refinery’s process safety management system. These weaknesses led to operation of the FCC unit without pre-established safe operating limits and criteria for unit shutdown, reliance on safeguards that could not be verified, the degradation of a safety-critical safeguard, and the re-use of a previous procedure deviation without a sufficient hazard analysis that confirmed that the assumed process conditions were still valid.

This report discusses the key factors that caused this incident, which include:

1. ExxonMobil did not establish the safe operating limits for operating the FCC unit in Safe Park—a standby mode of operation—or determine process conditions that required unit shutdown. As a result, the FCC unit was unknowingly placed in an unsafe condition when a critical safeguard—pressure induced by steam flow—was reduced below a safe level;

2. ExxonMobil re-used a procedure developed for a similar maintenance operation in 2012 that allowed deviation from typical refinery safety requirements. ExxonMobil did not, however, perform a sufficient hazard analysis to determine if the unit conditions specified in the 2012 procedure were valid for the 2015 operation. The safeguards specified in the 2012 procedure were not sufficient for the 2015 operation, and they failed to prevent hydrocarbons from backflowing through the process and into the ESP;

3. ExxonMobil operated FCC unit equipment beyond its predicted safe operating life.\(^1\) The failure of the equipment allowed hydrocarbons to reach the ESP;

4. ExxonMobil lacked safety instrumentation to detect flammable hydrocarbons flowing through the equipment and into the ESP. The inability to detect hydrocarbons flowing to the ESP appears to be an industry-wide problem; and

5. ExxonMobil refinery management permitted opening process equipment without conforming to refinery standards.

As a result of this incident, a near miss event occurred in the modified hydrofluoric acid (MHF) alkylation unit when explosion debris nearly hit tanks in close proximity to the ESP, each containing hydrofluoric acid (HF), water, hydrocarbons, and a chemical additive intended to reduce the amount of HF vaporized during a loss of containment event.\(^2\) HF is a highly toxic chemical that can seriously injure or cause death at a concentration of 30 parts per million (ppm).\(^3\) ExxonMobil resisted CSB requests for safety information pertaining to the potential release of HF in the event the tanks were struck by explosion debris. ExxonMobil continues to refuse to provide the CSB with information detailing safeguards to prevent or mitigate a release of HF. The CSB has issued subpoenas for this information, and is pursuing enforcement in US Federal district court.\(^4\)

As a result of the investigation findings of the February 18, 2015 incident, the CSB issues recommendations to ExxonMobil, Torrance Refining Company (the current operator of the refinery), and American Fuel and Petrochemical Manufacturers (AFPM). These recommendations aim to:

- Ensure all ExxonMobil and Torrance refinery safety-critical equipment can effectively perform its safety-critical function;
- Ensure ExxonMobil procedure deviations are analyzed for safety by a diverse, experienced team prior to their approval and implementation;
- Ensure ExxonMobil and Torrance refinery ESPs are assessed for potential siting risks and are designed with safeguards to prevent major consequences of an ESP explosion; and
- Ensure the lessons from this incident are learned broadly throughout the refining industry

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\(^1\) ExxonMobil does not define a piece of equipment’s safe operating life, but the company’s equipment strategy documentation does set forth inspection and maintenance intervals.

\(^2\) The CSB was not provided with documentation quantifying the resulting effect of the chemical additive on a potential HF release, and as such the CSB cannot comment on the effectiveness of this additive.


\(^4\) ExxonMobil has not provided this information to the CSB because they have stated that the requested documents are not within the CSB’s jurisdiction in investigating the causes of the February 18, 2015 incident.
Increased insurance cost due to fires in towers means high prices for flat owners

Dubai: Billions of dirhams in losses from a spate of spectacular skyscraper fires in Dubai and Sharjah have prompted insurance companies to increase premiums on building owner associations and managing developers four fold, heard delegates at the Smart Skyscrapers Summit in Dubai on Thursday.

Summit speaker Michael Kortbawi, Dubai-based corporate lawyer and insurance specialist, said high-profile blazes at Tamweel Tower, the Torch tower and Address hotel in Downtown Dubai and others have raised the risk profiles of tall buildings with insurance companies wanting more money to cover potential damage.

"There has been a substantial increase in the number of fires in the last seven years," said Kortbawi.

The costs could be borne by increased common-area maintenance fees for flat owners to make up for the surge in insurance cover for entire buildings.

Kortbawi said tower insurance is not to be confused with individual content insurance for flat owners and tenants who must take out their own policies to cover their personal belongings.

Kortbawi said building owners of new towers must be more cognisant of the materials they are choosing through architects and contractors to reduce the chance of fire damage.

Flammable cladding used on towers, for example, has been linked to tower fires racing across the exteriors of at least a dozen skyscrapers in recent years.

An estimated 1,000 buildings in the UAE are covered in aluminium cladding which is now being replaced by more fire-resistant composite cladding.

In his remarks to delegates, Kortbawi said the New Year Eve blaze that engulfed the Address hotel in Downtown Dubai was estimated by the insurance industry to have caused $800 million in fire damage as well as another $400 million in lost revenues.

The fire was attributed to an electrical short circuit on a spotlight on the 63rd storey and then shifted to aluminium cladding, sweeping across the facade of the building.

"Insurance building coverage is no longer low. If you want to insure your new building, you are going to have to pay substantially more," he said.

Peter Stephenson, associate director, Fire Engineering, BuroHappold Consulting Engineers, told summit delegates that “it’s important to understand good fire safety management”.

He said that when “looking at litigation and insurance within design costing, there is a professional responsibility” to be embraced.

Stephenson said of the 100 tallest buildings in the world, the majority are not exclusively residential. Of the total, 41 per cent are mixed use and 38 per cent are entirely office space.
Job Openings at Verisk Analytics

Are you an experienced Risk Control professional with proven ability working in a fast-paced environment? Are you looking to utilize your knowledge in fire protection systems, building construction, loss control, and related discipline providing risk analysis, development of policies and practices, conduct research among others? Do you like working in a collaborative environment? If you are looking to further your career in this field, we’d like to hear from you.

At Verisk, you can have a rewarding career with challenging and meaningful work, the chance to make a positive impact on the business, and find the support, coaching, and training it takes to advance your career. Our commitment to individual choice lets you customize aspects of your career path, your educational opportunities. And our culture of innovation means your ideas on how to improve our business efforts will be heard. As key contributors to our success, our team members enjoy working in a business casual, collaborative environment that offers state-of-the-art resources, advanced technologies, and an excellent benefits package

As Risk Control Engineer, you will be responsible for:

Providing technical support and guidance for the development of new and enhanced products
Providing support in the development of loss control policies and practices and assisting in the maintenance of associated technical resources
Conducting research to discover methods, techniques, and/or sources of information related to fire ignition, and sustainment and extinguishment. Researches complex problems, and analyses various related approaches and implements the most effective solutions
Maintaining awareness of emerging issues from a technical and product development perspective
Analyzing and/or identifying underlying principles, reasons, or facts associated with information or data to draw conclusions utilizing engineering knowledge and logic
Working closely and effectively with the following key stakeholders: representatives from the property/casualty industry, municipal leaders, code officials, architects and engineers, governmental representatives, fire service personnel, and ISO staff members
Preparing and presenting clear written and oral communications to external and internal audiences on technical issues

Requirements:

5 years or more experience in risk control with knowledge of the evaluation/design of fire protection systems, fundamentals of building construction and related resistance to fire and natural perils (wind, EQ, flood, etc.)
Degree in fire protection or mechanical or civil engineering with some financial and accounting knowledge
Professional Engineer (P.E.) designation, desirable.
Working knowledge or familiarization with national building codes and standards (ICC), knowledge and understanding of fire and life safety codes including NFPA and other national industry standards (FM), and OSHA.
Working knowledge of the basic processes of fire behavior, prediction of fire department, combustion of materials, effects on and performance of structures in a fire
Knowledge related to the principles of fire water supply and hydraulic analysis with the ability to predict needed fire flows, with knowledge of emergency response and fire service standards and procedures
Strong foundation in fire dynamics with knowledge of principles, methods, and practices of modern fire prevention, fire protection engineering, fire suppression activities, and new construction technology including fire protection and detection systems
Knowledge of risk analysis techniques including predictive and analytic procedures for the assessment of hazards and probabilities with statistical analytic ability
Experience in risk control concepts related to property insurance, workers compensation and liability issues

We are offering an excellent compensation package that includes short-term cash incentive. Our benefits package is competitive and includes full health care options, a 401(k) plan, and a generous Paid-Time-Off program. If this opportunity looks exciting and challenging to you, please click below link to apply.


A leading source of information about risk, Verisk Analytics provides data, analytics, and decision-support services to professionals in many fields, including insurance, finance, real estate, health services, government, human resources, and risk management. Using advanced technologies to collect, analyze, develop, and deliver information, Verisk helps customers evaluate and manage risk. The company draws on vast expertise in actuarial science, insurance coverages, fire protection, fraud prevention, catastrophe and weather risk, predictive modeling, data management, economic forecasting, social and technological trends, and many other fields. See our website at www.verisk.com for information about our company. All members of the Verisk Analytics Family of Companies are equal opportunity employers.

#LI-VD1
SFPE NJ Chapter Nomination of Officers and Directors for the 2017/18 Term

In accordance with the bylaws of the NJSFPE following is the proposed slate of Officers and Directors for the upcoming year. The election is scheduled to be conducted at the Chapter’s annual business meeting to be held on Monday June 19, 2017 at the Hanover Manor.

**OFFICERS**

President, Paul McGrath  
First VP, Chris Vitale  
Secretary, Joe Janiga  
Asst. Secretary, Dave Gluckman  
Treasurer, Marios Michaelides  
Asst. Treasurer, Glenn Buser  
Immediate Past President, Rich Reitberger

**DIRECTORS**

Jim Loftus (2nd year of 2nd term)  
Marvin Maradiaga (2nd year of 1st term)  
Ernesto Vega-Janica (1st year of 2nd term)

**NOMINATING COMMITTEE**

Marvin Maradiaga  
Jim Burge  

As immediate Past President Rich Reitberger will serve as the Nominating Committee Chairman

The Nominating Committee and the Board of Directors encourage volunteers to serve in leadership roles on the Board or Committee activities. Any member who desires to run for chapter office is encouraged to do so by contacting Christopher.vitale@fmglobal.com at least 4 weeks before our business meeting.

Regards,

Joe Janiga, Operations Chief Engineer, FSFPE  
FM Global - New York Operations  
300 Kimball Drive, Suite 200  
Parsippany, NJ 07054  
Ph: 973-541-6774
YOU ARE CORDIALLY INVITED TO THE 2017 NJAFED ANNUAL SUMMER MEETING!
June 14th & 15th
Golden Nugget, Atlantic City

This year’s event includes:

- New location - Golden Nugget, Atlantic City
- Vendor Meet & Greet Event on June 14th
- Numerous seminar sessions (offering CPD and EEC continuing education credits)
- Product vendor and supplier exhibits
- Vendor fish bowl drawing
- Networking opportunities
- See schedule of events below....

This is the registration link:
http://files.constantcontact.com/60bb22b8201/5eaff637-071d-4a81-9682-e1c64796ca94.pdf
New Jersey Association of Fire Equipment Distributors
2017 Summer Meeting
Golden Nugget - Atlantic City, NJ
Schedule of Events

PLEASE JOIN US FOR A VENDOR MEET & GREET!
Wednesday, June 14th
5pm-9pm in Grand Ballroom F
Gather for a casual cash bar and hors d’oeuvres event to network and catch up with vendors and members from around the state!

Thursday, June 15th
Grand Ballrooms C & F

8:00am:
REGISTRATION / CONTINENTAL BREAKFAST - join us for a continental breakfast in Grand Ballroom A – Meet, Greet & Eat!!!

8:45am - 9:15am:
PRESIDENT’S WELCOME ● TREASURER’S REPORT ● ELECTION OF DIRECTORS

9:15am - 10:00am:
SESSION 1 – FIRE EXTINGUISHERS IN THE IFC
Presented by Craig Voelker from Amerex-Fire: So you think you know fire extinguishers? Craig Voelker is going to explain all the other requirements for fire extinguishers in the International Fire Code that go above and beyond NFPA 10 and the general requirements of Chapter 9 of the International Fire Code

30 Minute Break for all Conference Attendees in Grand Ballroom F

10:30am – 11:30am
SESSION #2 – FIRE ALARM DESIGN FOR ELEVATORS
Presented by Jason Lupo from Siemens: This presentation will cover fire alarm design options for elevators.

11:30am - 11:45am:
LEGISLATIVE UPDATE by Paul Bent

Lunch and Vendor Fish Bowl Drawings for all Conference Attendees in Grand Ballroom F

1:15pm – 2:00pm:
SESSION 3 – DRY SYSTEM AIR PRESSURE: THE HIGH ROAD OR THE LOW ROAD
Presented by Karl Wiegand from Globe Fire Sprinkler Corporation: This presentation is intended to differentiate when and why it is more advantageous to maintain a higher system air pressure versus the use of low air pressure in the system.

2:00pm - 2:45pm:
SESSION 4 – CLEAN AGENT RECLAMATION, RECYCLING AND COMPLIANCE WITH NFPA 2001
Presented by John Demeter from Wesco: This presentation will review the entire process that a company like Wesco goes through to bring recycled clean agent to the fire equipment distributor and (most importantly) puts the distributor in compliance with NFPA 2001.

15 Minute Break for all Conference Attendees

3:00pm – 4:00pm:
SESSION 5 – YOUR COMPANY IS ONLY AS GOOD AS YOUR WORST TECHNICIAN ON HIS WORST DAY
Presented by Tim Krulan from NJ Fire Equipment: This presentation will review real world photos of Restaurant Fire System installations and service issues that your technicians may be seeing every day. Photos and discussions to review the Good, the Bad and the Ugly and hopefully you will bring back some important inspection issues to train your technicians on to help them look for these problems when servicing restaurant fire systems.

All Sessions are located in Grand Ballroom C

All seminar sessions will provide a Certificate of Attendance to be used towards the renewal of your NAFED or NICET Certification

Summer Meeting Location:
Golden Nugget – Grand Ballrooms C & F
Hurian & Brigantine Blvd.
Atlantic City, NJ 08401
844.4.NUGGET (Reservations)
www.goldennugget.com

Special NJAFED overnight room rates:
$79 (June 14th & 15th)
Cut Off Date June 1st

NJAFED Exhibitor
Display Hours:
Wed: 5pm-9pm
Thurs: 8am-1:15pm
Vendor Fish Bowl Drawing during Lunch
SFPE NJ / NY Metro Chapters Education Foundation Golf Outing - June 12, 2017

Mark your calendars to hold June 12th for the SFPE joint chapter Education foundation golf outing to be held at the New York Country Club in New Hempstead, NY. Additional details can be found on the three flyers in this edition.

Golfers — http://events.r20.constantcontact.com/register/event?oeidk=a07edyn0viyf65eaa83&llr=gyofskab&showPage=true
Sponsors — http://events.r20.constantcontact.com/register/event?oeidk=a07edyn3m60953521de&llr=gyofskab&showPage=true
The James Goerl Memorial Golf Outing

SFPE NJ / NY METRO EDUCATION FOUNDATION SCHOLARSHIP PROGRAM

Payment:
NAME: __________________________
ADDRESS: __________________________
________________________________________
CITY: _____ STATE: _____ ZIP: ________
EMAIL: __________________________
AMOUNT ENCLOSED: $_____

Please Make Checks Payable To:
“SFPE NJ/NY Metro Chapter Education Foundation”

MAIL form including payment TO
SFPE NJ CHAPTER
P.O BOX 8268
PARSIPPANY, NJ 07054

OR
Pay On-Line Here

http://events.r20.constantcontact.com/register/event?oeidk=a07edyn0vyif65eaa83&llr=gyofsfkab&showPage=true

WHEN: Monday June 12th 2017
WHERE: New York Country Club
103 Brick Church Road
New Hempstead, NY 10977

REGISTRATION: Before June 1st: $145 Per Golfer
After June 1st: $175 Per Golfer
LIMITED TO THE FIRST 144 GOLFERS!

SCHEDULE: 7:00am: Registration & Continental Breakfast
8:30am: Shotgun Start
1:30pm (Approx.): Awards/Luncheon

NAME
COMPANY
CONTACT

GROUP CONTACT
CART 1

CART 1

CART 2

CART 2

P:
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SFPE NJ / NY METRO EDUCATION FOUNDATION SCHOLARSHIP PROGRAM

Payment:
NAME: ____________________________
ADDRESS: ____________________________
________________________
CITY: _______ STATE: _______ ZIP: _______
EMAIL: ____________________________
AMOUNT ENCLOSED: $________

Please Make Checks Payable To:  
“SFPE NJ/NY Metro Chapter Education Foundation”

Date: Monday June 12th 2017

Sponsorship:
Green/ Tee Sponsor: $250

Golf Cart Sponsor: $500
Hospitality Cart Sponsor: $1,000
Registration Sponsor: $500
Breakfast Sponsor: $1,000
Driving Range Sponsor: $500
Cigar Sponsor: $500
Putting Green Sponsor: $500
Barbeque Lunch Sponsor: $2,000

Foundation Sponsor $200
Student Sponsor $100
Student Supporter $50

PLEASE CONTACT RICH REITBERGER FOR SPECIALTY SPONSORSHIP
Richreit522@gmail.com

Benefits for Sponsors:
♦ Pre event emailing of sponsor names
♦ Sponsorship sign on tees & greens throughout facility
♦ Sponsors listed on event brochure to all participants
♦ Sponsors announced during catered luncheon
♦ Includes large sponsor sign
♦ Follow-up mailing/ email after event to participants

http://events.r20.constantcontact.com/register/event?oeidk=a07edyn3m60953521de&llr=gyofskab&showPage=true
REGIONAL MEETING

IT'S ROAD TRIP TIME AGAIN!

North Jersey Chapter of ASCET has added a special meeting to be held on Wednesday, June 14, 2017 at 6:00pm.

We have been invited by Bill Phair and Geoffrey Allen, from Ferguson Fire & Fabrication, to be their guest at their new distribution facility located at:

50 Meadowlands Parkway
Secaucus, NJ 07094
(Across from Meadowlands Hospital Medical Center)

Please see their attached pdf flyer.

Presenters will be Victaulic. Matt O’Gorman and Anthony Ventura will be presenting a whole wave of new products from Victaulic. Including but not limited to 1” pipe grooving carriage for a Power Drive attachment, their new fire lock installation ready grooved fitting line, installation ready Vic Flex flexible drops, New and innovative bracket technology, dry flexible drop heads.

Ferguson will provide food and beverage along with a full tour of their new distribution facility.

We will also be inviting members from other Chapters from the Northeast Region of ASCET, including South Jersey, Delaware, Philadelphia, and New York City, just to name a few, to join us, making this a “Regional Meeting”, that will give Nicet Certified members 3 CPD points.

Please mark your calendar and plan to join us.
Anyone is invited. Please share this notice and any future notices with someone you know who would benefit from this meeting.

Please RSVP so that I can keep a record of who will be attending.

Joseph A. DeLuca, CET
President, North Jersey Chapter of ASCET
EVERYONE IS INVITED!

SAVE THE DATE!

WEDNESDAY, JUNE 14 • 6:00 P.M.

TOUR OUR NEW DISTRIBUTION FACILITY!

Please share this notice and any future notices with someone you know who would benefit from this meeting. Don’t forget to R.S.V.P., we will need an approximate head count. Further information coming soon.

Please R.S.V.P. as soon as possible to jdeluca@metrofirecommunications.com

NORTH JERSEY CHAPTER OF ASCET HAS ADDED A SPECIAL MEETING TO BE HELD AT THE NEW FACILITY AT 6:00 P.M.

NICET CERTIFIED MEMBERS WILL RECEIVE 3 CPD POINTS FOR ATTENDING

FOOD AND BEVERAGES WILL BE PROVIDED

FERGUSONFIRE.COM
**Fires by Occupancy or Property Type 2010-2014**

In March NFPA published the above 54 page titled article, the following will be just the master table from that article. More detailed breaks down of occupancy types can be found by going to NFPA’s web site.

Abstract: This collection of tables shows the estimated average number of fires, associated civilian deaths and civilian injuries, and direct property damage per year reported to local U.S. fire departments during 2010-2014 for structure fires, vehicle fires, and outside or unclassified fires by occupancy or property type. Estimates are presented with three different levels of detail for the property classifications: general, partial, and the full level of detail in NFIRS.

These estimates were derived from Version 5.0 of the U.S. Fire Administration’s National Fire Incident Reporting System (NFIRS 5.0) and the National Fire Protection Association’s (NFPA’s) annual fire department experience survey.

### General Detail – Structure Fires

<table>
<thead>
<tr>
<th>Occupancy</th>
<th>Fires</th>
<th>Civilian Death</th>
<th>Civilian Injuries</th>
<th>Direct Property Damage in Millions</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 - Public Assembly</td>
<td>14,040</td>
<td>5 (0.2%)</td>
<td>174 (1.2%)</td>
<td>$340 (3.5%)</td>
</tr>
<tr>
<td>2 - Educational</td>
<td>4,990</td>
<td>1 (0.0%)</td>
<td>69 (0.5%)</td>
<td>$72 (0.7%)</td>
</tr>
<tr>
<td>3 - Health Care or Detention and Correction</td>
<td>6,390</td>
<td>3 (0.1%)</td>
<td>166 (1.1%)</td>
<td>$52 (0.5%)</td>
</tr>
<tr>
<td>4 - Residential</td>
<td>384,900</td>
<td>2,640</td>
<td>13,217 (90.2%)</td>
<td>$7,059 (72.7%)</td>
</tr>
<tr>
<td>5 - Mercantile or Office</td>
<td>16,980</td>
<td>12 (0.4%)</td>
<td>320 (2.2%)</td>
<td>$716 (7.4%)</td>
</tr>
<tr>
<td>6 - Industrial, Utility, Defense, Agriculture, or Mining</td>
<td>2,620</td>
<td>1 (0.0%)</td>
<td>48 (0.3%)</td>
<td>$222 (2.3%)</td>
</tr>
<tr>
<td>7 - Manufacturing or Processing</td>
<td>4,850</td>
<td>6 (0.2%)</td>
<td>171 (1.2%)</td>
<td>$457 (4.7%)</td>
</tr>
<tr>
<td>8 - Storage</td>
<td>21,130</td>
<td>26 (1.0%)</td>
<td>299 (2.0%)</td>
<td>$590 (6.1%)</td>
</tr>
<tr>
<td>9 - Outside or Special Property</td>
<td>22,480</td>
<td>14 (0.5%)</td>
<td>107 (0.7%)</td>
<td>$107 (1.1%)</td>
</tr>
<tr>
<td>Unclassified or unknown property use</td>
<td>7,310</td>
<td>9 (0.3%)</td>
<td>79 (0.5%)</td>
<td>96 (1.0%)</td>
</tr>
<tr>
<td>Total</td>
<td>485,700</td>
<td>2,716</td>
<td>14,651 (100.0%)</td>
<td>$9,711 (100.0%)</td>
</tr>
</tbody>
</table>

Note: Sums may not equal totals due to rounding errors. Property damage was not adjusted for inflation. Casualty and loss projections can be heavily influenced by the inclusion or exclusion of one unusually serious fire.

Source: NFIRS and NFPA fire experience survey.
SLICER & ASSOCIATES
Fire Protection and Loss Prevention Consulting

J. Sargent “Sarge” Slicer, FSFPE

P.O. Box 1647
West Chatham, MA 02669-1647

Office 508-945-5074
Mobile 973-493-0369
VM & Fax 866-395-6172

Member – SFPE & NFPA
sargeslicer@gmail.com

Associated Fire Protection
ROLAND STRATEN, P.E.

100 Jackson Street
Paterson, NJ 07501

(973) 684-7250 Ext. 150
Fax: (973) 684-4811
rstraten@afpfire.com

JENSEN HUGHES
Advancing the Science of Safety

Timothy R. Costello, PE
Director - Manhattan NY Office

100+ YEARS OF EXPERIENCE
How well does the NEC cover the pot industry?

BY JEFFREY SARGENT- Author(s): Jeff Sargent. Published on November 1, 2016.

In “Growing Pains,” the cover story in the September/October issue of NFPA Journal, associate editor Jesse Roman wrote about the safety issues, electrical among them, associated with the legal growing and processing of cannabis. To get a better understanding of the electrical challenges faced by this industry—one that could be on the brink of significant growth as more states consider legalizing medicinal and recreational pot use—I recently visited Auburn, Maine, including Lifespring Microclimates, an Auburn-based firm specializing in the design of highly efficient grow facilities. Recent legislation allowing legal medical dispensaries has spurred a construction boom of these facilities throughout the state, and Auburn has experienced a surge of activity related to the medical marijuana industry. That may be just a hint of things to come, since Maine voters will consider a referendum question in November seeking to legalize recreational use.

Being that this article was written just before the referendum, it should be noted that the referendum was passed.

The overriding question that I hoped to answer with my visit was whether there is anything associated with the electrical installations in these facilities that is not adequately covered by NFPA 70®, National Electrical Code® (NEC®). While the good news is that there does not appear to be anything unique to the grow facilities that is not covered by the current requirements of the NEC, there are aspects that bear watching.

A few key takeways:

It’s all about power. Most industrial cultivation of cannabis happens in indoor grow facilities where the conditions can be managed and monitored for maximum yield. That means a lot of grow lights, and a huge consumption of power—an important metric for growers is “grams per watt.” Power for the artificial lighting and the air-conditioning needed to maintain the proper growing environment is one of the largest costs associated with growing cannabis.

In some locations, though, the power demands of those facilities are burdening an electrical infrastructure that was not designed to accommodate such heavy loads, particularly where residential and light commercial buildings are repurposed as grow facilities without any upgrade to the electrical supply or distribution system. Additionally, utility infrastructure can also be undersized, as this level of usage was not anticipated, particularly in rural areas. According to Dan Thayer, P.E., owner of Lifespring Microclimates, the electrical load of the air-conditioning systems in modern grow facilities is similar to that of a data center.

Surprisingly, many growers are using old-school lighting technology, as there has been a reluctance to move from the proven technology of high-pressure sodium (HPS) lighting to a more energy-efficient method such as LEDs. Although LEDs have made huge inroads into the residential and commercial lighting markets, the availability of LED technology that would provide a light spectrum quality and operational durability similar to HPS has been limited, and some of the initial LED luminaires proved to be unreliable. The upside to LED technology is longer lamp life, less operational heat (which reduces air-conditioning costs), and the lack of concern over the violent eruption that occurs when HPS lamps are broken.

Electricity and extraction processes may create hazards. Another concern includes the potential explosive environment that is created in some solvent-based extraction processes, where flammable liquids such as acetone are used to separate THC from cannabis buds for use in edibles and other marijuana products. It certainly appears that some electrical area classification is prudent, but unfortunately this is not always done, nor are there any cannabis industry standards that provide area classification information. Safer extraction processes that employ carbon dioxide can double the costs of installation over solvent-based processes.

Product certification should be considered. Lighting control panels are being installed in many of these facilities, and product certification of these industrial control panels is not the norm. Now that electrical infrastructure is becoming more robust across the industry, adequate short-circuit current ratings for these control panels becomes more of a concern.

These are just some of the electrical issues that need to be considered as the cannabis industry matures. Rapid growth has sometimes meant that problems or unsafe conditions are only discovered as a result of a major malfunction or fire, but the fact is that these issues are not insurmountable, and safety and productivity are not mutually exclusive. Like other industries, the cannabis business will profit from facilities that are professionally designed, installed, inspected, and operated.
<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
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<tbody>
<tr>
<td>June 4-7</td>
<td>NFPA Conference, Boston, MA</td>
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<tr>
<td>June 12</td>
<td>NJ NY Metro Chapters Foundation Golf Outing—New York Country Club</td>
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<tr>
<td>June 19</td>
<td>Annual Chapter Meeting</td>
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