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FUSIBLE LINK

JANUARY 2016

President's Message…

Happy New Year !

We are off to a fine start for 2016 with great technical presentations coming up this year and a truly outstanding Technical Symposium scheduled for May 4th at the Hanover Manor in East Hanover, NJ. More to follow. The Chapter Holiday Party in December was well attended and a wonderful time spent with friends and Chapter members. The Technical Presentation on the Tyco Quell System for freezer warehouses was outstanding and very informative. Overall an enjoyable meeting.

Our January meeting will be held on Monday January 11th at the Parsippany, NJ offices of FM Global. Wes Baker of FM Research will present changes and updates to FM Data Sheet 8-9 and storage occupancy protection. Please note that this meeting is a breakfast meeting kicking off at 9 am in the morning. This is a change from our regular time and venue so please mark your calenders accordingly. See you all there.

From all of us at the New Jersey Chapter have a Happy and Healthy New Year !!!

Rich Reitberger
President

Chapter Meeting Minutes
December 7, 2015

President Rich Reitberger convened the meeting at 6:00 PM with a salute to the flag and customary introductions.

A video was shown discussing the "Hope for Veteran's" Program.

A motion was made and carried to accept the treasurer's report from October and November.

Rich Reitberger talked about the SFPE meeting in Philadelphia and mentioned that we were presented with a Gold Chapter Award. The 2016 SFPE meeting will be in Denver and the 2017 SFPE meeting will be in Montreal.

Rich Reitberger presented the James Tolos Service Award to: Paul McGrath, Gerry Naylis, Joe Janiga and Glenn Buser.

Vicki Serafin was presented with a gift card for all the help and support she provides to the chapter.

Paul McGrath spoke about the upcoming Fire Facts Seminar #23 being held in Princeton on January 7 and at Seton Hall University on January 8. This year's instructor is John Drucker, the Fire Protection Sub-code Official of Red Bank, NJ. He will be presenting on the Fire Sub-code Update: 2015 NJ Uniform Construction Code.

May 4th will be the annual symposium at the Hanover Manor.

Gerry Naylis provided us with several legislative updates including residential sprinklers, recent legislation requiring the installation of carbon monoxide detectors in commercial buildings, legislation regarding the use and installation of light weight building construction material and a bill to require planning/zoning boards to have the advice of a fire official or fire service professional considered as part of their decision making process.

Philip M. Gunning, P.E., Sr. Manager of Services, Tyco Fire Protection Products gave us a presentation on the Quell Fire Sprinkler System – performance based fire protection for cold storage, outdoor and unheated warehouse facilities. Phil discussed Quell methodology, the science and engineering behind the system design and testing, installation requirements, contractor training, and the commodities the system can protect.

The Quell Fire Sprinkler System is the first of its kind for cold storage, outdoor and unheated warehouse facilities. In terms of performance, the Quell Fire Sprinkler System effectively addresses a fire with a volume of water with a "surround and drown" configuration to rapidly reduce the heat release rate. This fire protection approach minimizes damage to storage facilities and valuable goods. It also provides the following:

- Does not require expensive antifreeze, which can leak and damage storage commodities.
- Ceiling-only coverage eliminates costly in-rack sprinklers and increases storage array flexibility.
- Provides fire protection for Class I, II, III and group A plastic commodities.
- Provides the lowest installation and maintenance costs.
- Backed by the industry's best 10-year limited warranty.

Additional information including an advertisement, brochure, press release, specifications and performance based design definition is available at: http://www.tyco-fire.com/index.php?P=quell

Various door prizes were distributed after the presentation.

The meeting was adjourned at 7:45 PM.

January 11th Chapter meeting will be a breakfast meeting at FM Global - Changes to FM Data Sheet 8-9

Members. Just a reminder our next Chapter monthly meeting will be held Monday January 11th at 9 am and will be a breakfast meeting at the FM Global Offices, 300 Kimball Drive, Parsippany, NJ.

Our guest speaker will be Wes Baker, AVP, Sr. Engineering Technical Specialist, Engineering Standards Group, FM Global Research. Wes's topic will be Changes to FM Data Sheet 8-9 which includes Rack Sprinkler Protection. Come to the meeting and hear from "the" expert on storage protection and what's new in protection of this challenging occupancy.

Mark your calendars. Also please let Vicki know you are coming so we can get an accurate count for the caterer.

Blast causes massive fire at chemical plant in northeastern China

A blast has been reported at a pesticide plant in the city of Jilin, Jilin Province in northeastern China. A fire broke out following the explosion, with emergency crews working at the scene.

At least four people were injured in the blast, CCTV reported.

Authorities have issued a warning for locals not to approach the plant, Chinese *Sina news* reported.

There have been no immediate reports of toxic leaks.

The incident reportedly happened around 8pm local time on Wednesday Dec 9th, with a large fire starting after the explosion. A video emerged online showing an orange glow lighting up the sky and emergency crews rushing to the scene but the video was quickly removed by China authorities.

The following Chapter Officers and Past Board Members recieved Jim Tolos Sevice Awards during the December Meeting for their dedication and service to the New Jersey Chapter, SFPE. They are Paul McGrath, Jerry Naylis, Joe Janiga and Glenn Buser

Sao Paulo fire wrecks historic railway station

According to the Sao Paulo Fire Department one fire-fighter died in the blaze

A fire in the Brazilian city of Sao Paulo has destroyed parts of a historic 19th Century railway station housing a popular museum.

The museum, which documents the history of the Portuguese language, was severely damaged.

The blaze destroyed the roof of the "Station of Light" which was originally built by the British.

It was constructed in 1901 during the coffee boom to transport the beans to the Atlantic port of Santos.

Flames engulfed the third floor of the museum which is closed on Mondays, the day of the fire

One fireman was killed in the enormous blaze which raged unchecked for hours despite a heavy downpour. The "Station of Light" was named after the neighbourhood it was built in.

It was designed and built in 1901 by a prominent British railway station architect, Charles Henry Driver.

The subway station next to the burning building was closed for safety

With its railway clock tower and its classic steel arched roof it was thought to have been modelled on British railway stations of the same period.

However, some historians say it was inspired by Finders Street station in the Australian city of Melbourne.

The following is a white paper on corrosion and solutions in wet pipe sprinkler systems. This will be discussed in detail at our April 4th Chapter meeting by the author of this article.

White Paper

The Chemistry of Oxygen Corrosion in Wet Pipe Fire Sprinkler Systems and Wet Pipe Nitrogen Inerting (WPNI) for Corrosion Control

(May 2015)

Jeffrey T. Kochelek

There is a lot of misinformation circulating within the fire sprinkler industry regarding oxygen corrosion of steel sprinkler piping and the mechanisms associated with that process. Oxygen is a highly reactive gas constituent of the air we breathe (21%) and is the primary cause of corrosion in fire sprinkler piping. There are three physical attributes of oxygen gas that greatly affect the corrosion reaction with steel pipe.

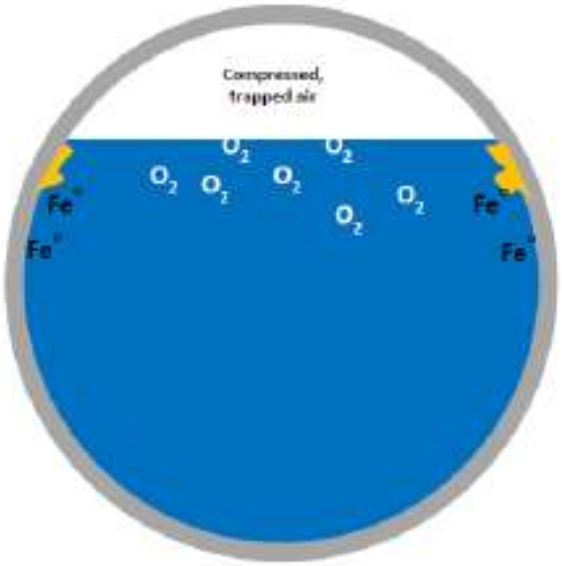

Figure 1: Corrosion Reaction at the Trapped Air Pocket

First, oxygen gas exhibits very low solubility in water. This is important because until oxygen gas dissolves into the water it cannot participate in the corrosion reaction. The saturation limit, i.e. the point at which no more oxygen can dissolve into the water, is approximately 10 parts per million (0.001%) at room temperature and pressure[1]. Increasing the pressure can increase the amount of oxygen that can dissolve into the water and at 150 psig the saturation limit increases to about 40 parts per million (0.004%).

Second, once the dissolved oxygen in water contacts the steel pipe, the reaction between the oxygen and the iron occurs in minutes. A common example of this reaction occurs on the brake rotors of your vehicle at the car wash. After contact with the warm oxygen saturated water for only a few minutes a sheen of rust forms.

Third, oxygen molecules that are dissolved in water have very poor mobility in stagnant water. As a result, the corrosion reaction that occurs in wet pipe fire sprinkler systems generally occurs in very close proximity to the trapped air pocket. It occurs in other locations, but this is the primary location where oxygen corrosion will occur[2].

These three physical attributes clearly explain why almost all of the corrosion that occurs in wet pipe fire sprinkler systems occurs in close proximity to pockets of trapped air within the water filled piping.

The sequence of steps in the oxygen corrosion reaction in a wet pipe systems is as follows:

1. As the system is filled with water the air that originally filled the empty pipe gets trapped and creates a void space directly above and in **intimate contact** with the water surface.
2. Some of the oxygen molecules in the trapped air **dissolve** into the water.
3. The dissolved oxygen concentration at the water surface quickly rises until it reaches its **saturation limit**. The remaining oxygen in the trapped void space remains as a gas.
4. The dissolved oxygen molecules in the water mobilize and **react with the iron** molecules in the pipe wall – once the dissolved oxygen contacts the iron, this reaction happens in minutes.
5. As a result of the chemical reaction between dissolved oxygen and iron, a **physical particle of iron** metal is removed from the pipe wall and creates a void called a pit.
6. The product of the chemical reaction between dissolved oxygen and iron is a **physical particle of iron oxide** (hematite or rust) which precipitates inside the pipe.
7. As the first dissolved oxygen molecules in the water are consumed by the corrosion reaction, the dissolved oxygen concentration in the water **falls below the saturation limit**.

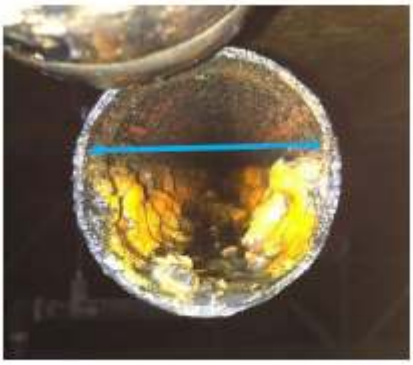

Figure 2: Air-Water Interface with Significant Oxygen Corrosion

8. **More oxygen** from the trapped air pocket dissolves into the water until the saturation limit is again reached.
9. As the process continues, all of the molecules of oxygen in the trapped air dissolve in to the water and are eventually consumed by the iron in the pipe wall – in the closed pipe, this consumption of the oxygen can take **90 – 120 days** depending on the pressure, the temperature, the total water surface area and the chemistry of the water.

Some in the industry who are unfamiliar with oxygen corrosion chemistry have suggested that it is necessary to remove the dissolved oxygen from fire sprinkler supply water before it is used to fill the sprinkler system piping. However, a simple analysis of the total amount of oxygen in the piping reveals the following:

- 1000 gallons of water completely saturated with dissolved oxygen to 40 parts per million (0.004%) contains <u>0.04 gallons of oxygen</u> (assumes 150 psig pressure in the pipe)
- 1000 gallons of air that originally filled the pipe and is compressed and trapped in the piping after filling with water contains <u>210 gallons of oxygen</u>

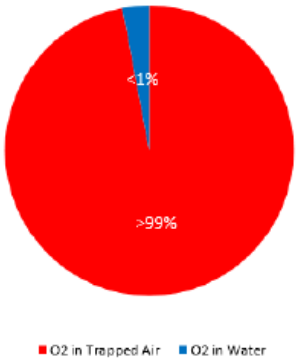

Figure 3: Source of Oxygen in Wet Pipe Fire Sprinkler Systems

Therefore, there is at least 5000 times more oxygen available for corrosion in the trapped gas of a wet pipe fire sprinkler system than there is in the fill water. Focusing on the very small amount of oxygen contained in the incoming water supply is costly, inefficient, and unproductive.

If all of the oxygen in the wet pipe fire sprinkler system piping is displaced with nitrogen gas before the system is filled with water, oxygen corrosion can be completely stopped[3]. This is at the heart of the wet pipe nitrogen inerting (WPNI) process. This specific process has been used in over 1000 wet pipe zones in the past 5 years with complete elimination of oxygen corrosion in every system.

References: [1] US Geological Survey Dissolved Oxygen Tables - http://water.usgs.gov/software/DOTABLES/

[2] Research Technical Report "Corrosion and Corrosion Mitigation in Fire Protection Systems" FM Global, Paul Su and David Fuller, July 2014.

[3] Engineered Corrosion Solutions Wet Pipe Nitrogen Inerting (WPNI) Case Histories

Employment Opportunities

ARUP is looking for a Senior Fire Consultant/Engineer - Tri State Region - offices in Edison and NYC

At Arup, our innovative spirit compels us to express our ingenuity in unique ways —developing many of the world's most innovative and sustainable buildings, transport and civil engineering projects. Arup is a global engineering and consulting firm of 11,000 creative minds.

Our integrated approach to engineering and design brings together the best professionals to meet our clients' needs.

We are currently seeking a Senior Fire Consultant/Engineer to play a very active role in the continued development of Arup's fire engineering practice in the Americas and will work closely with many of the world's leading architects and building owners developing innovative, performance based design solutions for a wide range of building, industrial and transport projects.

Your responsibilities will involve:

- Provide fire safety consulting engineering services to a variety of potential clients, including but not limited to architects, developers, owners, government and insurers.
- Consulting on building codes and standards including IBC, NFPA codes and tri-state jurisdictions (NYC, NYS, NJ).
- Develop fire strategies for projects across all markets
- Fire alarm design and construction administration support including reviewing shop drawings, submittals, RFIs and conducting field reports for large rail projects.
- Responsible for project management of multiple projects to ensure successful delivery on time and budget.
- Developing client relationships and pursuing new business opportunities.
- Contributing to our research and development activities.

Qualified professionals will have a Bachelors or Master's degree in Fire Engineering or related field. PE license in fire protection engineering desired. Candidate must possess good communication skills essential for team-based working, excellent planning and organization skills required for our fast-paced environment, and must be highly motivated, proactive and willing to take on new challenges.

Share your passion and experience in a global culture that believes your potential to achieve is endless. This is your opportunity to shine.

Arup is proud to be an equal opportunity employer.

APPLY at: https://arupjobs.taleo.net/careersection/jobdetail.ftl?job=NEW000037&lang=en

Lockton Northeast Series – Property Risk Control Consultant

Location: Hartford (Farmington)/New York City/Philadelphia (Blue Bell)

About Lockton:

More than 5,300 professionals at Lockton provide 41,000 clients around the world with risk management, insurance, and employee benefits consulting services that improve their businesses. From its founding in 1966 in Kansas City, Missouri, Lockton has attracted entrepreneurial professionals who have driven its growth to become the largest privately held, independent insurance broker in the world and 10th largest overall. Independent researcher Greenwich Associates has awarded Lockton its Service Excellence Award for risk management for large companies. For five consecutive years, Business Insurance magazine has recognized Lockton as a "Best Place to Work in Insurance." To see the latest insights from Lockton's experts, check Lockton Market Update.

Lockton is known throughout the insurance industry as an entrepreneurial, progressive and successful insurance broker. As a result of continued individual and group accomplishments, Lockton has a record of steady and substantial growth. Unlike publically held companies that have to report to public shareholders on a quarterly basis, Lockton operates on a long term goal basis over years, not quarters. If you are a committed professional with a passion for delivering unparalleled service, Lockton is interested in hearing from you.

Job Description:

Responsibilities: Lockton is searching for an experienced property risk control consultant to work in a fast-paced team environment to support the insurance placement process, participate in the acquisition of new business and advocate for the client with insurers and support their risk management/property loss prevention processes and programs.

Qualifications:

- 5+ years of insurance carrier, broker or risk management property risk control experience.
- Bachelor's Degree in Engineering or Applied Science or equivalent
- PE license or CFPS certification a plus
- Strong oral and written communications skills
- Proficiency in knowledge and application of National Fire Protection Association (NFPA) Standards and FM Global Data Sheets
- Strong interpersonal skills to communicate effectively with clients
- Expertise in development and analysis of property insurance industry loss estimates including MFL's, PML's and LE's.
- Strong advocacy skills in working with FM Global insured clients
- Self-motivated individual with successful ability to work in a team environment
- Microsoft Office and internet proficiency

Interest candidates should contact David A. Larson, SVP - Risk Services Practice Leader, Lockton Companies, 1185 Ave of the Americas, New York, NY 10036; E-mail: dlarson@lockton.com; Office: (646) 572-7367.

Lockton Companies, LLC is an equal opportunity employer. As a privately held company, we offer a competitive compensation and benefits package reflecting our commitment to attracting and retaining great individuals. This includes health and dental coverage, which begins on your first day of work, 401(k) with match and immediate vesting, a competitive vacation plan and unrivaled career advancement opportunities.

Vicki Serafin
Affiliated FM Insurance
FM Global
300 Kimball Drive, Suite 200
Parsippany, NJ 07054-1196
Phone: (973) 541-6771
Fax: (973) 541-6909

MEETING NOTICE

Date: Monday, January 11, 2016

Place: FM Global
300 Kimball Drive
Parsippany, NJ

Price: $30.00

Time: 9:00 a.m.—This will be a breakfast meeting at FM Global Offices, 300 Kimball Drive, Parsippany, NJ

Topic: Changes to FM Data Sheet 8-9 which includes Rack Sprinkler Protection

Speaker: Wes Baker, AVP, Sr. Engineering Technical Specialist, Engineering Standards Group, FM Global Research.
Come to the meeting and hear from "the" expert on storage protection and what's new in protection of this challenging occupancy.
Please contact Vicki if you are coming so we can get an accurate count for the caterer.

PLEASE COMPLETE AND RETURN WITH YOUR CHECK PAYABLE TO "SFPE NJ CHAPTER" TO:

Vicki Lynn Serafin
Affiliated FM Insurance
300 Kimball Drive
Suite 200
Parsippany, NJ 07054
Phone: 973-541-6771 / Fax: 973-541-6909
vicki.serafin@affiliatedfm.com

OR PAY AT THE DOOR

NAME: _____

Meeting Dates/Programs 2015-2016

Jan 11	**FM DS 8-9 Changes and Rack Sprinkler Protection—Wes Baker, AVP, Sr. Engineering Technical Specialist, Engineering Standards Group, FM Global Research—Note: Meeting will be a breakfast meeting at FM Global Offices, 300 Kimball Drive, Parsippany, NJ**
Feb 1	**ARUP—Egress Modeling on Large Projects**
March 7	**John Drucker—NJ Code Update**
April 4	**"Managing corrosion in water-based sprinkler systems—the causes, the myths, and to how to assess" - Jeff Kochelek, CEO of Engineered Corrosion Solutions**
May 4	**Seminar**
June 6	**Annual Golf Outing**
June 20	**Annual Meeting—Use of Large Capacity Lithium Batteries in NYC Buildings**

2015-2016 Chapter Committees

STANDING COMMITTEES

Program
Mike Newman

Arrangements
Vicki Serafin, Chairperson

Membership
Paul McGrath, Chairman

Nominating
Joe Janiga, Chairman (IPP)
Chris Vitale
John Antola, Jr.

Auditing
Vanessa Gallagher, Chairman
Rich Reitberger

Archivist/Historian
Jim Tolos, Vicki & Nicole

Speakers Gifts
Rich Reitberger

Communications
Fusible Link—Brad Hart
Ana Crisostomo—Coordinator

Communications-Other
Paul McGrath
Mike Newman

Mailing/Automation/e-mail—Vicki Serafin, Chairperson

Webmaster—Mike Newman & Paul McGrath

SPECIAL COMMITTEES

Spring Seminar
Ed Armm—Chairman
Dave Kurasz—Sprinkler Speakers Coordinator
Jim Loftus—Alarm Speakers Coordinator
Paul McGrath—Vendor Coordinator

Bylaws
Jim Tolos, Chairman
Joe Janiga
John Antola

Career Recruitment
Tim Costello, Chairman
Donna Spano
Marios Michaelides

Chapter Excellence Awards
Ernesto Vega-Janica

PE Examination
Donna Spano

Chapter Seminar/Field Trip
Richard Reitberger, Chairman
Ed Armm , CoChairman
Dave Gluckman
Nathan Gorey

Legislative
Rich Reitberger, Chairman
Jerry Naylis
Dave Kurasz

Finance
Rich Reitberger - Chairman
Vanessa Gallagher
C. Patel

HELPFUL LINKS

ADAAG http://www.access-board.gov/adaag/about/index.htm
AFAA National http://www.afaa.org/
AFSA http://www.firesprinkler.org/
ANSI http://web.ansi.org/
ASHRAE http://www.ashrae.org/
Campus-Firewatch http://www.campus-firewatch.com/
Coffee Break Training http://www.usfa.dhs.gov/nfa/coffee-break/
CPSC http://www.cpsc.gov/
CSAA http://www.csaaul.org/
Municipal Codes (E Codes) http://www.generalcode.com/Webcode2.html
FDNY http://nyc.gov/html/fdny/html/home2.shtml
FM Global http://www.fmglobal.com/
FSDANY http://www.fsdany.org/regs.htm
FSI http://www.firesprinklerinitiative.org/
FSSA http://www.fssa.net/
Fire Tech Productions—Nicet Training (FTP) http://www.firetech.com/
Home Fire Spklr Coalition http://www.homefiresprinkler.org/
HVAC Bld. Control Fire Safety http://www.iklimnet.com/hotelfires/hotelfiresmain.html
AFAA-NJ http://www.afaanj.org/
International Code Council - http://www.iccsafe.org/
International Code Council Residential Sprinkler Exam - http://www.iccsafe.org/news/nr/2009/0709_ResidentialSprinklerExam.pdf
The Joint Commission (JCAHO) - http://www.jointcommission.org/www.JointCommission.org/
Material safety data Sheets (MSDS-OSHA Site) - http://www.osha.gov/SLTC/hazardcommunications/index.html
National of Fire Equipment Distributors (NAFED) - http://www.nafed.org/index.cfm