

backdraft

The newsletter of Fire Protection Engineering / Code Consulting



Fire Protection Engineering
viewpoint
Elliot Gittleman, FPE - Principal ESH Consultants

From the Editor

Greetings and welcome to the Summer 2004 issue of *Backdraft*, a publication of ESH Consultants. I could start off this issue by discussing the war in Iraq and how it is being reported by the news media, or the “election”, or whether ribbons are medals or medals are ribbons; however I will leave that to FOX News, MSNBC, CNN and others. Instead I wish all of are soldiers and civilians in Iraq and Afghanistan a safe stay and a safe return to their families, and thank them all for their sacrifices.

On the local front it appears that the fire service is in for a busy wildfire season. Large fires have already occurred in California and it is only the beginning of May. This past Mother’s Day while traveling in Marin County California, I noticed a fire being extinguished just north of Sausalito. With the winds from the Northwest, a pale of smoke traversed San Francisco Bay.

Here in California two important issues are still in progress since the last issue: First the adoption of NFPA 1 and NFPA

5000, and second, Professional Engineering registration and how it affects fire protection engineers. Both issues are proceeding forward and will be reported later in this issue.

Recently a fire sprinkler system extinguished a fire in a government facility. The source of ignition was a candle. One of our readers has provided a copy of the news article about the fire. The article implies that the water damage would have been much less if the sprinkler system had not been installed. Our reader submitted his response to the article. Both the article and the response are reprinted in this issue with their permission.

Please enjoy this issue of *Backdraft*. Continue to submit ideas, questions or comments. I hope to see you at the Salt Lake City NFPA Conference. Have a safe and healthy summer.

Elliot Gittleman, FPE

Code Discussions

Last issue we informed our readers that California had adopted NFPA 1 and NFPA 5000 as the basis of the next version of the California Fire and Building Codes. This took place under the rule of former Governor Gray Davis with four state agencies recommending adoption of the ICC and one agency recommending adoption of NFPA. Yes, you read that correctly, it appears that in our state politics, 1 beats 4.

Since that time, work has started on the process of adopting and modifying these two NFPA codes into a California building and fire code. To assist in the more than 1,000 expected changes, NFPA has opened an office in Sacramento. So where does that leave us, the users and enforcers of the building and fire codes? It leaves us with a current direction. We can now proceed knowing which code will be the basis of the local regulations, or does it? Rumor has it that ICC may still push for adoption of their codes and they may either take legal action or ask the present administration (Schwarzenegger) to review the prior selection process. Time will tell, but for the moment it is the NFPA codes. All we the users ask is that a final decision be made so that we know how to proceed on behalf of our clients and employers.

Assuming the state continues with the present direction, when should we expect to begin using the new code? At a recent Northern California Fire Prevention Officers (NORCAL FPO) meeting, state fire marshal representatives submitted a timeline for the completion of the process. As-

suming there are no further delays, it is expected that on March 21, 2007 the code will be published. One hundred and eighty days later the code will become effective as law. Thus for at least two more years California will continue to use the 2001 edition of the building and fire

California Code Time Line

- July 29, 03 to Nov. 22, 05
 - Phase I Code Development Planning
 - Phase II Draft Amendments
 - Phase III Stakeholder Review
- Nov. 22, 05
 - Phase IV Rulemaking Development
- Jan. 30, 06
 - Phase V CBSC Code Advisory Committee Review
- May 29, 06
 - Phase VI Agency Rulemaking
- July 21, 06
 - Phase VII Administrative Procedures Act Process
- March 21, 07
 - Phase VIII Publication followed by 180 day to publication date
- Oct. 1, 07
 - New Code Effective

codes. In the interim suggestions for changes to the current code may still be submitted to the State Fire Marshal for evaluation and adoption into the present code.

PE Registration - California

A few years ago the state board that licenses professional engineers was instructed to review the engineering licensing to make a recommendation to the legislature. The recommendations of the board will affect the licensing of Fire Protection Engineers doing business within California.

For the past few years Tim Callahan, FPE, owner of Fire Protection Consultants Inc. has donated many hours of his time on this issue. He attends PE board meetings, has met with Society of Fire Protection Engineering members and provides summaries of his findings. The following is a summary of one his most recent updates. Thank you Tim for all your hard work.

The Board has adopted and will soon forward recommendations to the Legislature to resolve the Title-Practice Act licensure issue. The recommendations call for the legislature to consider converting all Title Act engineering disciplines to Practice Disciplines and granting responsible charge authority to all converted branches. Legislative hearings will occur in the fall to determine which branches will be converted to practice with the potential that some will be eliminated. A bill to execute the changes will be introduced in Feb '05 to execute the changes.

The PE Board adopted the following recommendations regarding the Title Act issue.

Overlap

Some overlap should be allowed for all Practice Act disciplines.

Overlap amongst Practice Acts should be limited to being "in connection with and incidental to" the specific discipline/branch.

Board Rule 415, Practice Within Area of Competence, or some form of a requirement to practice only within the area of one's competency, should be moved to statute, and should be connected to the allowance for overlap.

Responsible Charge

Responsible charge will be required of those disciplines that are converted to practice acts.

**Eliminate Protection of Only the Title and Offer
Practice and Title Protection to all Regulated Disciplines**

Stand alone Title Acts should be abolished leaving only Practice Acts. Existing Title Acts should go through the legislative Sunrise process at the same time to determine whether specific disciplines should be converted or eliminated.

During the Sunrise process, the Board will provide testimony and may make recommendations to the Legislature regarding whether a specific discipline should be converted to a practice act or eliminated.

The Legislature should consider using the existing Title Acts discipline definitions as contained in Board Rule 404, Definitions.

What does that mean to users of Fire Protection Engineering services? It means that you may no longer be able to obtain the services of a fire protection engineering specialist. If you do not reside in California you may say, “so what, it does not affect me”. But it may affect you in the future. Do not be surprised if other states decide to follow California’s example and eliminate all but the major engineering disciplines (Civil, Electrical, Mechanical, and Structural).

If Fire Protection Engineering is eliminated as a professional engineering branch, then within the next decade, there will be few if any Professional Engineers practicing fire protection within California. The numbers will decrease as new licenses will not be issued, engineers will retire, and those that forget or fail to pay license fees on time will no longer be able to pay a late payment penalty to reinstate their license.

Tim Callahan has been working with CLCPE (California Legislative Council of Professional Engineers) to protect Title Acts from elimination. Tim believes the recommendations will be followed. This means fire protection engineering will either be converted to a practice act or eliminated. If eliminated, it will be necessary to persuade the Legislature to Sunrise Fire Protection into the Practice status.

NCN SFPE (Northern Cal. Nevada Society of Fire Protection Engineers) has established a special fund to cover the costs associated with CLCPE activities on behalf of fire protection engineering. Monies in that fund have been raised by donation and with the assistance of the national office of SFPE. Recently CLCPE requested \$5,000 to start their efforts. Additional funding, which may exceed \$25,000 will be needed. Also, to assist CLCPE,

NCN SFPE is compiling a list of names, addresses and phone numbers of business, industry and government contacts that use fire protection engineering services. NCN SFPE will need letters of support to show the Legislature that there is a demand for fire protection engineering services, and that the lack of those services could affect businesses operating in the state.

Please submit contact names, business name and type, address, phone numbers, letters of support (in .rtf, .txt, .pdf, .doc formats) to CAFPE@SBCGLOBAL.NET (an email address provided and administered by ESH Consultants).

If possible a suggested donation of \$100 or more would be greatly appreciated. Please contact Dave Shelton, NCN SFPE V.P. (dbs@abdi.com), for information on where and how to send funds. Please support and preserve fire protection engineering in California.

Mobile Refueling – Continued

One lesson I learned when I started in the fire service in 1970 was that the fire services is locked into tradition, and slow to make changes. The fire service waits to adopt new fire fighting technology or standards while waiting to see if someone else will try it first. I remember when no one would carry supply line greater than 3 inch however it was a good thing for the profession when some departments had the fortitude to be first and try something new.

The previous issue of *Backdraft* discussed mobile refueling, fueling trucks at commercial or industrial sites, from a mobile fueling tanker. As fuel prices continue to rise, mobile refueling is one method available to the commercial/industrial consumer to reduce fueling costs and to remain competitive. At some distribution sites, fixed fueling stations have been installed so that their drivers can refuel the delivery vehicles on site. Others send their fleet of vehicles to a local fueling company (a.k.a. gas station).



Mobile refueling saves the user with labor costs and downtime. During off hours, usually at night, a vendor can fuel all the vehicles in the fleet thus saving the customer the labor costs associated with having drivers pumping fuel or waiting at a fueling facility to be refueled.

Look around your community. If there are warehousing or a large delivery services (UPS, FedEx, DHL etc) operating in your community, it is very possible that mobile refueling is occurring without your knowledge or without a permit. You make the decision. Which is a safer operation; uncontrolled, unregulated refueling or granting a permit using suggested regulations from a model code?

Some cities have already made that decision. They are issuing fueling permits using either ICC or NFPA model code requirements while waiting for a permanent change to the fire codes. For more specific information on mobile refueling see the article, ***High Octane***, from Fire Chief Magazine (http://firechief.com/mag/firefighting_high_octane/).

The following is a comparison of the NFPA and ICC IFC requirements for mobile refueling.

Summary of NFPA with actual code language in quotes

NFPA 1 Uniform Fire Code Chapter 42 Refueling

42.2.1.2 “If approved by the AHJ, mobile fleet fueling at commercial, industrial, and governmental sites shall be conducted in accordance with NFPA 30A, *Code for Motor Fuel Dispensing Facilities and Repair Garages*”.

NFPA 30A, Code for Motor Fuel Dispensing Facilities and Repair Garages

“9.6 Refueling from Tank Vehicles. The dispensing of Class I and Class II liquids in the open from a tank vehicle to a motor vehicle located at commercial, industrial, governmental, or manufacturing establishments and intended for fueling vehicles used in connection with their businesses shall be permitted only if all

of the requirements of 9.6.1 through 9.6.7 have been met”.

9.6.1 Inspection of premises and operations by AHJ. No fueling until approved by AHJ.

9.6.2 Tank vehicle to comply with NFPA 385 Standard for Tank Vehicles for Flammable and Combustible Liquids

9.6.3 Maximum hose length 50 feet (15 meters)

9.6.4 Listed, automatic closing dispensing nozzle without latch-open device

9.6.5 Nighttime deliveries in AHJ approved lighted area

9.6.6 Vehicle flashers in operation during dispensing

9.6.7 Leave expansion space in each tank to prevent overflow due to temperature changes

Summary of ICC International Fire Code with actual text in quotes

IFC 2001 and 2002 Section 3406.5.4.5 “**Commercial, Industrial, Governmental or Manufacturing.** Dispensing of Class II and Class III motor vehicle fuel from tank vehicles into the fuel tanks of motor vehicles located at commercial, industrial, governmental or manufacturing establishments is allowed where permitted, provided such dispensing operations are conducted in accordance with the following:”

1. Site must be permitted
2. Owner of mobile fueling operation shall provide AHJ with written response plan for fuel spills

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3. Provide a detailed site plan drawing to the AHJ. Show buildings, structures, storm drains, water or wet lands, adjacent uses, etc.
4. AHJ can restrict times and days, and can specify actual location of refueling
5. Refueling shall take place in an area not accessible to the public
6. Refueling may not take place within 15 feet of a building, property line, or combustible storage
7. Tank vehicle shall comply with NFPA 385 as well as all local and state regulations
8. Post signs prohibiting smoking or open flames within 25 feet of tank vehicle or point of fueling
9. Provide a minimum 40:BC fire extinguisher with a sign indicating its location
10. Dispensing nozzle and hose must be approved and listed
11. Dispensing hose shall not extend more than 100 feet from the reel
12. Provide spill containment equipment
13. Tanker shall have a fuel limit switch (except where the operator has a constantly carried shutoff device)
14. Operators must have training on mitigating actions for fire, leak or spill
15. Operators must have in their possession emergency communication devices to notify authorities in the event of an incident
16. Tank vehicle must be constantly attended during fueling
17. All ignition sources shall be removed prior to fueling
18. Engines of vehicles being fueled shall be shut off
19. Night time refueling in lighted areas only
20. Position tank vehicle to prevent

other vehicles from driving over the hose or driving between the tank vehicle and the vehicle being fueled

21. Set brakes, chocks and flashing lights while fueling
22. No topping off
23. No moving of the fuel truck until the hose is properly stowed
24. Notify fire officials or other agencies in the event of a spill

Both the NFPA and the ICC have criteria for allowing mobile fueling from tank vehicles. NFPA has a shorter list of criteria than the ICC. The most critical issue is identified by both, that being the requirement to meet or exceed the requirements of NFPA 385.

What if the code in your jurisdiction does not even address mobile refueling operations at commercial, industrial, governmental or manufacturing locations? Your code should have a section that allows users to apply for approval of alternative methods and materials. If a constituent submits a request for approval of mobile refueling, they should cite which of the two model codes, NFPA or ICC IFC, they wish to apply as an acceptable method. Failure to work with users may only lead to mobile refueling that has not been permitted, thus a more risky situation.

If your jurisdiction does not regulate mobile refueling operations, and is willing to allow mobile refueling without using either NFPA or ICC IFC criteria, then you should seriously consider enforcing NFPA 385 as the minimum criteria for tank vehicles moving about and operating in your area.

Blame it on the Fire Protection Sprinklers, or How Dumb Can They Get

A few years ago this courthouse was severely damaged by a fire. During the rebuild a sprinkler system was installed to prevent any future large fire losses.

The following article was submitted by one of *Backdraft's* readers along with his letter to the editor. It appears that they are trying to blame the damage on the sprinkler system rather than looking at the root cause of the fire; management's failure to enforce the rules prohibiting open flame devices in the building. The fire was started by unattended burning of a candle.

The following article is reprinted with the permission of the Spokane Washington *Spokesman-Review*.

John Craig

Staff writer

Wednesday, March 24, 2004

Sprinklers become Catch-22 for county

In wake of 1995 fire, courthouse's new water system causes extra \$400K damage

The Lincoln County courthouse in Davenport, gutted by fire in December 1995, faces an estimated \$300,000 to \$400,000 in repairs from another fire.

Almost all of the new damage was caused by the sprinkler system that put out the March 14 fire. The sprinkler system was installed during the \$4.5 million renovation that followed the 1995 arson fire.

"It cuts both ways," County Commissioner Ted Hopkins said, noting damage this time might have been limited to \$300 for a scorched counter top if there had been no sprinkler. "But we still have a building."

There is no way of knowing whether the fire -- caused by a candle -- would have burned itself out before igniting something else, Hopkins said.

He said a candle on a metal stand apparently was inadvertently left burning in the Superior Court clerk's office when employees went home a week ago last Friday. On the following Sunday, the candle ignited plastic decorative material at its base, Hopkins said.

A sheriff's deputy on routine patrol spotted the fire, but it was out by the time firefighters

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arrived. The sprinkler directly above the candle continued to operate for 20 to 30 minutes before it could be turned off, causing water damage on three floors.

"That pretty much wrecked the floor of the clerk's office and the floor of the treasurer's office, which is directly under the clerk's office," Hopkins said.

He said walls in the two offices and in the basement also were damaged. The county's \$67,000 central computer server, in a small room next to the Superior Court clerk's office, was destroyed. A number of personal computers, telephones and other electronic devices also were ruined by the water.

Hopkins estimated the equipment loss could total \$100,000. All of the county's losses will be covered by a \$1,000-deductible insurance policy.

Repairs are expected to take about 11/2 months. Meanwhile, employees from the clerk's and treasurer's offices will continue to work in conference rooms and the offices of other departments.

Hopkins said county officials discussed the need to keep cigarettes and other fire hazards out of the courthouse after the 1995 fire, but didn't get around to putting the policy in writing. There is now a formal ban on open flames in the courthouse, he said.

Superior Court Clerk Peggy Semprimoznik said she was unaware of any previous policy against candles. Hers was not the only office that burned candles, she said. She said she doesn't plan to discipline any of her staff for the fire, and Hopkins said commissioners agree with that decision.

"It was accidental," Semprimoznik said. "Periodically, we have had a candle burning in the office, and we all have lit it. I really don't know who lit it that day. All I know for a fact is that I didn't light it that day."

Semprimoznik said she and her staff "feel very bad about the unfortunate accident and the upheaval in the courthouse that it has caused."

Letter to the editor, reprinted with the permission of the author, Dan Shier

Let's see if I read John Craig's article "Sprinklers become Catch-22 for county" (March 24, 2004) correctly. In 1995, Lincoln County's courthouse building was severely damaged by fire. In rebuilding, the County made the

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decision to include fire protection sprinklers throughout as protection from a similar disaster. After reopening the new courthouse, County officials discuss, but "never quite get around" to banning smoking and "other fire hazards" in the building. Meanwhile, various county employees burn candles within the building. On March 14, one of those candles is accidentally left unattended as everyone leaves for the night. The candle burns down, fire spreads, and a sprinkler head operates. The sprinkler extinguishes the fire and, though not mentioned in the article, presumably sends an alarm -- automatically. Water flows for 20 to 30 minutes. Total damages run in excess of \$300,000.

All this is the poor little sprinkler's fault? Try again! That system saved the building.

Put the blame where it belongs. Blame County officials for not banning open flames within the building long ago. Blame County personnel for not using common sense with burning materials inside the building. Blame whoever was responsible for not shutting down the sprinkler system, and draining it, *after* the fire was out.

Do not blame the sprinkler. It did exactly what it was supposed to do. The fire was hot enough to fuse its operating element. When that happened, it put water on the blaze and extinguished it. Fire damage was limited to the room of origin. All damage was incidental to the fire, not the sprinkler.

Dan Shier

Thank you Dan for allowing *Backdraft* to reprint your letter.

ESH Consultants

ESH Consultants will be entering its fourth year of business this October. What is our history and what are our objectives for the future?

History

We opened the doors on the business with our first client, Ball Western Can Corporation, a division of The Ball Corporation. This was an interesting project to relocate a sheet metal coating process from the San Francisco Bay area to another location. The process included application of flammable liquids, flammable liquid storage and dispensing, code review and interpretation, negotiation of alternative methods with the local authority having jurisdiction. Special fire protection for the process included foam sprinkler systems for both interior and exterior flammable liquid storage operations.

Other projects were developed with Safeway Inc. to renovate sprinkler systems for various warehouses. Working with a local sprinkler contractor, the local AHJ and a fire pump supplier, nine sprinkler systems were modified and a pre-fabricated pump house was installed. Other work for Safeway included plan review for a major data center, specification preparations for sprinkler system and pump installation at an east coast warehouse, surveys of grocery and frozen food warehouses for proposed sprinkler system changes suggested by their insurer. A hazmat template was prepared for use by local Safeway staff rather than having each location create their own document.

Projects during the past three years included:

- The inspection of a new sprinkler system to determine whether sprayed on fireproofing material had caused the pipe to rust,
- Fire/life safety plan review for the California Division of the State Architect (educational occupancies) Oakland and Sacramento regions,
- Development of client permit templates for permit applications for mobile refueling,
- Code evaluation and recommendations for a kitchen cabinet manufacturing operation (sprayed on flammable finishes),
- Code consulting,
- Contract HPR inspections for worldwide insurance company,
- Research and evaluation on monitoring fire alarm systems using the Internet,
- Consulting to other engineers and architects.

Outside of work, I am involved with the Northern California/Nevada Chapter of the Society of Fire Protection Engineers where I am the Secretary of the Board, and Chair of the Relationships Committee, and a member of the PE Rewrite Committee. I represent both NCN SFPE and ESH Consultants at the monthly meetings of the Northern California Fire Prevention Officers (NORCAL FPO) meetings where I am a member of the Building Standards Committee. I also attend the quarterly meetings of the Silicon Valley Engineering Council.

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The Future

ESH Consultants is interested in expanding our services to our clients, to provide a one stop shop for engineering and emergency preparedness/business continuity consulting. The company is working to develop relationships with other consultants, to work together as a joint venture, or to subcontract services to each other so that larger projects can be handled by the group. By establishing these relationships we can approach our clients and offer a full package of services including architectural design and project management, electrical and mechanical engineering, process safety, emergency preparedness and business recovery planning.

With that format, we can work with our clients to complete an entire package of services not just related to mitigation and suppression, but extending into developing risk management strategies and pre-plans for business recovery should a disaster occur. Presently we find our clients must work with multiple consultants, and then try to coordinate the efforts. The website will announce the establishment of these working relationships as they occur.

ESH Consultants is also expanding into inspection of industrial and commercial properties. In the past, companies either wait until they are cited by the AHJ, or if an HPR insured, they wait until a report issues a recommendation. We believe it is a good business practice to conduct inspections with our clients in order to identify areas of risk, and to provide sound business recommendations to reduce the risk by either operation or policy changes, or by recommend additional means of protection. Identifying

these risks and developing a plan of action is better than the typical panic approach of reacting to code violation notices or insurer notifications of premium surcharges.

Special Notice

This offer is available to new clients and members of NORCAL FPO. **For the next 6 months, or next 100 hours of billable work, whichever occurs first, ESH Consultants will donate \$10 per hour (for services provided in-house and not subcontracted) to either the NORCAL Charlie Gray Fund, or to the PE Rewrite Fund at NCN SFPE, as designated by the client.**

Our billing rate will not be marked up to compensate for this donation. Rates for 2004 were established at the beginning of the year. If desired by the client, billing will be broken down into fees for services minus \$10 per hour, and indicate the amount for donation (based on \$10 per hour). The client would submit two payments, one for ESH Consultants and the other made out to the appropriate organization (allowing the client tax credit for the donation). ESH Consultants will forward the funds to the organization on your behalf.