

# **Understanding 61G15-32**

## **Florida Laws and Rules Concerning Fire Protection Plans**

By Steve Kowkabany, P.E.  
Neptune Fire Protection Engineering

### **Welcome!!!**

- **Highly interactive format**
- **Who do we have here in terms of background?**



## Steve Kowkabany, P.E.



- **Owner/President of Neptune Fire Protection Engineering**
- **President of NEFL SFPE Chapter**
- **20 years as practicing engineer**
- **Came to FP through manufacturing**
- **Specializes in heavy industrial and chemical industries**

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## Legal Structure - Florida Law 101

- **Florida Constitution**
- **Florida Statutes**
  - <http://www.leg.state.fl.us/Statutes>
  - **Chapter 471 – Engineering**
  - **Chapter 633 – Fire Prevention and Control**
  - **Chapter 553 – Building Construction Standards**

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## **Florida Law 101 Cont' d**

- **Florida Administrative Code**
  - **61G15 – Florida Board of Professional Engineer Rules**
  - **Provides detailed guidance on how exactly to enact requirements of Florida Statutes**

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## **Why 61G15-32?**

- **A line had to be drawn between engineers and contractors**
- **Prevent bad behavior**
  - **Under-specification “Design per 13”**
  - **Over-specification without responsibility**
  - **Plan stamping**
  - **Contractors in engineering business**

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## History of 61G15-32

- **Henn Rebane, Buddy Dewar, Don Wiginton, a condo in South Florida, and a really mad legislator**
- **What can happen when people work together**

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## Purpose

**To Protect the Public.**



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## Premise

- **#1**
  - **Most people are honest and want to follow the rules as long as they make sense and can be understood.**
- **#2**
  - **Everyone on the team is important and no one is more important than the other.**

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## Permitting Process

- **Mater permit is applied for using “contract drawings” – includes engineering “criteria” for fire protection systems**
- **Trade permits include detailed shop drawings by contractor**
- **Where is the line drawn between the two?**
- **61G15-32 tells us**

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## **Requirements for All FP Drawings (61G15-32.003)**

- **Applicable codes and standards**
- **Occupancy**
- **Structural support and openings**
- **Activation and controls requirements**

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## **Requirements for Water Based Systems (61G15-32.004) “A-J”**

- **A - Point of Service as defined by Section 633.021(18)**
- **B - Applicable standard or eng. judgment**
- **C - Hazard classification of each area**
- **D - Design approach of system**
- **E - Water supply characteristics**
- **F - Flow test**

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## **Requirements for Water Based Systems (61G15-32.004) “A-J”**

- **G - Valving and alarm requirements**
- **H - MIC evaluation**
- **I - Backflow prevention requirements including maximum pressure drop**
- **J - Quality and performance specifications of all components**

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## **Requirements for Clean Agent, Foam, and Dry-Chem Systems (61G15-32.005, 006, 007)**

- **Design per applicable NFPA standard**
- **No further guidance provided by 61G15-32**
- **These systems are often pre-engineered or manufacturer specific**

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## **Requirements for Fire Alarm Systems (61G15-32.008) “A-O”**

- **A – Plans must include:**
  - **Symbol legend**
  - **Riser diagram showing all devices**
  - **Survivability requirements and fire ratings**
  - **Occupancy of building or areas**
- **B – Locate initiation and notification devices**
- **C – Identify strobe intensity and speaker output ratings for each device**

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## **Requirements for Fire Alarm Systems (61G15-32.008) “A-O”**

- **D – Identify circuit class for each circuit**
- **E – Identify the functions of the fire alarm system (logic?)**
- **F – Indicate if system is conventional or addressable and all zoning**
- **G – Locate all surge suppressors**
- **H – Identify environmentally affected devices and required protective features**

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## **Requirements for Fire Alarm Systems (61G15-32.008) “A-O”**

- **I – Site plan showing surrounding area when devices are required outside the building**
- **J – Detail on installation of smoke detection where ceiling obstructions, beams, or pitched roofs will complicate placement**
- **K – Design accounting for smoke stratification where this is anticipated (i.e. tall spaces)**

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## **Requirements for Fire Alarm Systems (61G15-32.008) “A-O”**

- **L – Performance-based design criteria shall be identified**
- **M - Identify if general or zoned activation**
- **N - Wiring requirements for underground and wet locations including protection against damage and burial depths**
- **O – Operations and maintenance requirements**

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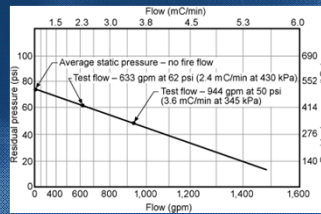
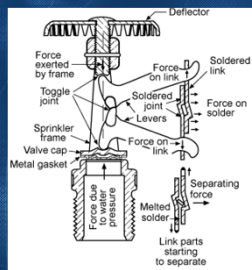


# Real Life Examples

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# Design Versus Layout



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## The Role of the Engineer



**As a minimum prescribed  
by law.**

**Purpose: To protect the  
public**

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## Professional Engineer

- **Florida does not license engineers by discipline.**
- **An engineer who specifies the fire protection system design parameters, a.k.a. the engineer of record for fire protection, must be a licensed PE in Florida.**
- **A Fire Protection Engineer (FPE) is an engineer who has successfully passed the Profession Engineer (PE) exam in fire protection engineering.**
- **In Florida, it is not necessary to be a FPE to do the fire protection design, only a PE competent by education, experience or knowledge in fire protection.**

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## **Florida Building Code Section 105.3.1.2 Continued:**

- **Fire sprinkler documents for any new building or addition which includes a fire sprinkler system which contains 50 or more sprinkler head. A Contractor I, Contractor II, or Contractor IV, certified under s. 633.521, may design the alteration of an existing fire sprinkler system if the alteration consists of the relocation, addition or alteration or deletion of not more than 49 head, notwithstanding the size of the existing fire sprinkler system.**

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## **Summary**

- **For building construction or alterations:**
  - **Requires full set of documents including Fire Sprinkler Design Documents**
    - **Prepared by a licensed engineer or a licensed contractor (small installations of 49 sprinklers or less).**
  - **Requires review and acceptance by both a building code official and a fire safety code official.**
  - **Requires Compliance to the Florida Building Code, the Florida Fire Prevention Code and the Life Safety Code**
  - **Refers to the General Building Permit only.**

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# What Constitutes Engineering Documents?

- **Definition**

- **61G15-32.002 (5) - Fire Protection System Engineering Documents:** The fire protection system engineering drawings, specifications, prescriptive and performance criteria, water supply analysis and other materials or representations, which are submitted with the general construction documents pursuant to 553.79(6)(c), FS, that set forth the overall design requirements and provide sufficient direction for the contractor to layout the construction, alteration, demolition, renovation, repair, modification, permitting and such, for any public or private fire protection system(s), which are prepared, signed, dated and sealed by the Engineer of Record for the Fire Protection System(s).

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# Engineering Documents (continued)

- **Other Clarifications Regarding Minimum Information Required on Documents – 61G15-32.004**
  - **(3) Contractor submittals which deviate from the above minimum design parameters shall be considered material deviations and require supplemental engineering approval and documentation.**
  - **(4) In the event the Engineer of Record provides more information and direction than is established above, he or she shall be held responsible for the technical accuracy of the work in accordance with applicable codes, standards, and sound engineering principles.**

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## **Other Responsibilities and Duties**

- **When elements of the project are shown on an engineering document only for information or clarification and the Engineer does not intend to accept responsibility for the elements, the engineer shall clearly note on the documents the extent of his responsibility. 61G15-30.003**
- **Engineers shall clearly note on any preliminary engineering documents that such documents are not in final form, but are being transmitted to the public agency to receive agency reviews, comments and interpretations. 61G15-30.004**

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## **Who Designs Fire Sprinkler Systems?**

- **Affixing or permitting to be affixed his or her seal, name, or digital signature to any final drawings, specifications, plans, reports, or documents that were not prepared by him or her or under his or her responsible supervision, direction, or control. 471.033 (j) FS (grounds for disciplinary action)**
- **A professional engineer may only seal an engineering report, plan, print or specification if that professional engineer was in responsible charge of the preparation and production of the engineering document and the professional engineer has the expertise in the engineering discipline used in producing the engineering document in question. 61G15-23.002(2)**

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## Who Designs Fire Sprinkler Systems?

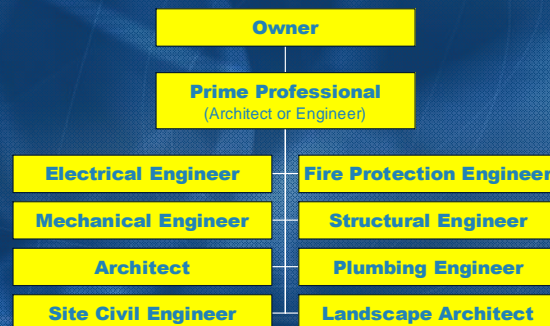
- ... persons certified as a Contractor I, Contractor II, or Contractor IV under this chapter may design fire protection systems of 49 or fewer heads, and may design the alteration of an existing fire sprinkler system if the alteration consists of the relocation, addition, or deletion of not more than 49 heads, notwithstanding the size of the existing fire sprinkler system. Such plans may not be required by any local permitting authority to be sealed by a registered professional engineer. 633.021(5) FS
- A Contractor I, Contractor II, or Contractor IV, certified under s. 633.521, may design a fire sprinkler system of 49 or fewer heads and may design the alteration of an existing fire sprinkler system if the alteration consists of the relocation, addition, or deletion of not more than 49 heads, notwithstanding the size of the existing fire sprinkler system. 553.79(6)(c) FS

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## Who Designs Fire Sprinkler Systems?

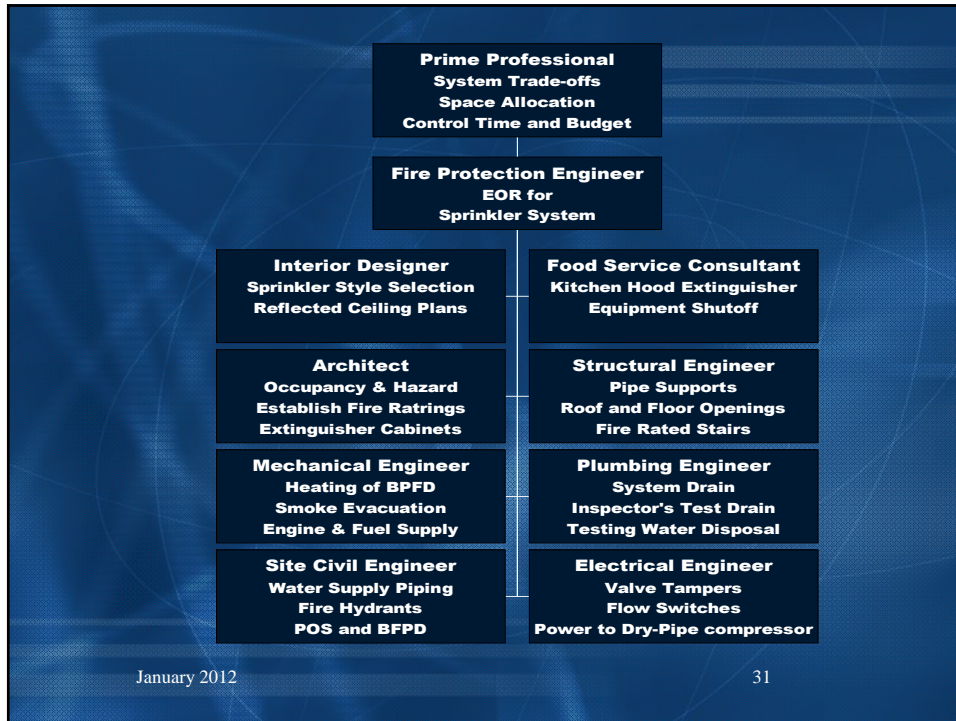
- It is the responsibility of the prime professional engineer to retain and coordinate the services of such other professionals as needed to complete the services contracted for the project. 61G15-30.007



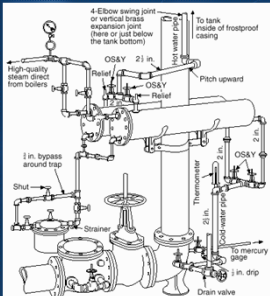
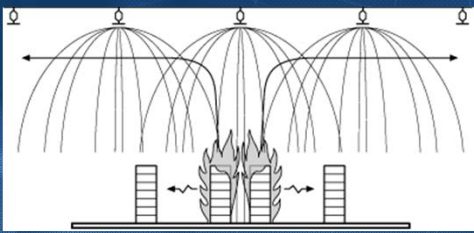
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## The Role of the Fire Sprinkler Contractor

**As a minimum prescribed by law.**

**Purpose: To protect the public**

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## Layout Documents Required

- **633.551 County and municipal powers**
  - Nothing in this act limits the power of a municipality or county to adopt any system of permits requiring submission to and approval by the municipality or county of plans and specifications for work to be performed by contractors before commencement of the work, except that no municipality or county shall require a fire protection system contractor's shop drawings to be sealed by a professional engineer.
  - Any official authorized to issue building or other related permits shall ascertain that the applicant contractor is duly certified before issuing the permit. The evidence shall consist only of the exhibition to him or her of current evidence of certification.
- **633.539 Requirements for installation, inspection, and maintenance of fire protection systems.--**
  - Equipment shall be installed in accordance with the applicable standards of the National Fire Protection Association and the manufacturer's specifications.

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## Summary

- **Local municipalities have the right to control the layout and installation of fire sprinkler systems through permitting.**
  - Includes submissions of Shop Drawing (layouts) prior to installation.
  - Requires local jurisdiction to assure the contractor is duly licensed to perform the work.
  - Disallows local jurisdiction to require engineer seals on the contractor's work product.
- **Work has to be installed correctly regardless**

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## The Big Questions

- **What constitutes a fire sprinkler system layout?**
  - Answer – See 633.021(14) FS and Administrative Rule Section 61G15-32.
- **Who can legally provide this layout document?**
  - Answer – See chapter 633 FS and Administrative Rule Section 61G15.
- **What engineering involvement is required?**
  - Answer – See chapter 633 FS and Administrative Rule Section 61G15-32.

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## What Constitutes Layout Documents?

- **Definition**
  - **633.021 (14)**

"Layout" as used in this chapter means the layout of risers, cross mains, branch lines, sprinkler heads, sizing of pipe, hanger locations, and hydraulic calculations in accordance with the design concepts established through the provisions of s. 553.79(6)(c).

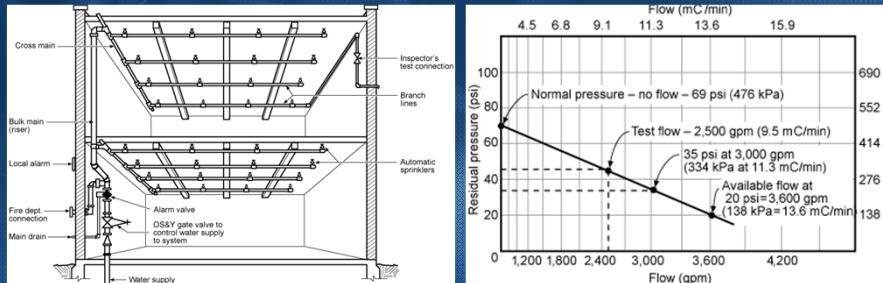
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# What Constitutes Layout Documents?

- See Chapter 8 of NFPA 13 2010 ed.



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# Who can perform layout?

- 633.541 FS
  - It is unlawful for any organization or individual to engage in the business of layout, fabrication, installation, inspection, alteration, repair, or service of a fire protection system, other than a pre-engineered system, act in the capacity of a fire protection contractor, or advertise itself as being a fire protection contractor without having been duly certified and holding a valid and existing certificate, except as hereinafter provided.
- 633.021 (7) FS
  - The definitions in this subsection <sup>1</sup>must not be construed to include fire protection engineers or architects and do not limit or prohibit a licensed fire protection engineer or architect from designing any type of fire protection system.

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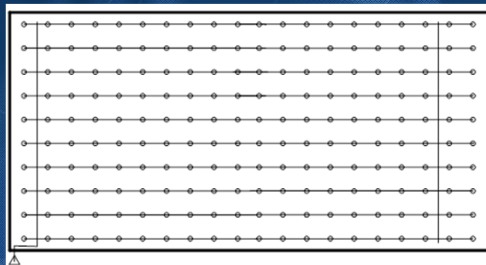
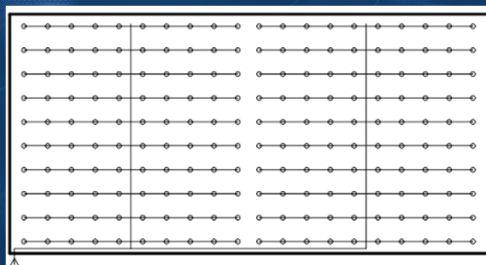


# What engineering involvement is required?

- **633.511 FS**
  - ...no municipality or county shall require a fire protection system contractor's shop drawings to be sealed by a professional engineer.
- **61G15-32**
  - Fire Protection System Layout Documents are based upon engineering direction provided in the Fire Protection System Engineering Documents and require no additional engineering input. These documents do not require the seal of a Florida registered engineer.

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## Variables involved in layout:

- Structural Details
- Exact Locations of all obstructions
- Selection of allowable technology
- Selection of allowable materials
- Selection of allowable fabrication methods
- Three dimensional pipe routing
- Managing hydraulic pressures
- Job Site Conditions
- Construction Sequencing
- **Question:** Which one of these layouts is best?
- **Question:** How many other code complying layouts might there be that could be better?

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## The Role of the Code Official



**As a minimum prescribed  
by law.**

**Purpose: To protect the  
public**

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## Enforce the Process

- **553.80 Enforcement.--**
  - **Except as provided in paragraphs (a)-(e), each local government and each legally constituted enforcement district with statutory authority shall regulate building construction and, where authorized in the state agency's enabling legislation, each state agency shall enforce the Florida Building Code required by this part on all public or private buildings, structures, and facilities, unless such responsibility has been delegated to another unit of government pursuant to s. 553.79(9).**

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## **Exclusive Engineering Decisions**

- **Diagnosis of the Issue**
  - **Classification of the hazard**
  - **Circumstances unique to the project**
  - **Applicable standard(s) to be applied**
- **Prescription for adequate protection**
  - **Desired result to be achieved regardless of variables which could be applied.**

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## **Where is there only one right answer?**

- **Code Relevant**
  - **The water supply**
  - **The occupancy**
  - **The standard to be applied**
  - **The environmental precautions**
- **Contractually Relevant**
  - **Plans for future expansion**
  - **You name it**

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## **Where might there be a variety of right answers?**

- **Density point on specified curve**
- **Head selection and spacing within specified Occupancy class**
- **Pipe selection, routing and sizing**
- **Fabrication methods**

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## **Complaints - Engineers**

- **Contact the Florida Board of Professional Engineers and they will investigate all violations that are brought to its attention.**
- **The investigative process includes evaluation of plans and specifications by a competent engineer specialist assigned by the Board**
- **For Emergencies, contact the Florida Engineers Management Corporation (FEMC) staff immediately and they will assess the situation and take appropriate action.**

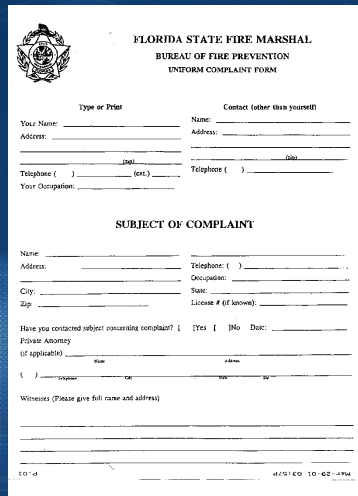
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# Complaints - Contractors

- **State Statute 633.547** requires that the State Fire Marshal's office shall investigate the alleged illegal action of any fire protection system contractor certified under this chapter and hold hearings pursuant to chapter 120. The process is started by contacting the local office of State Fire Marshal, Fire prevention Section.



**FLORIDA STATE FIRE MARSHAL**  
BUREAU OF FIRE PREVENTION  
UNIFORM COMPLAINT FORM

Type or Print Contact (other than yourself)

Your Name: \_\_\_\_\_ Name: \_\_\_\_\_  
Address: \_\_\_\_\_ Address: \_\_\_\_\_  
Telephone ( ) \_\_\_\_\_ ( ) \_\_\_\_\_ Telephone ( ) \_\_\_\_\_  
Your Occupation: \_\_\_\_\_

**SUBJECT OF COMPLAINT**

Name: \_\_\_\_\_ Telephone ( ) \_\_\_\_\_  
Address: \_\_\_\_\_ Occupation: \_\_\_\_\_  
City: \_\_\_\_\_ State: \_\_\_\_\_  
Zip: \_\_\_\_\_ License # (if known): \_\_\_\_\_

Have you contacted subject concerning complaint? ( ) Yes ( ) No Date: \_\_\_\_\_  
Please identify (if applicable) \_\_\_\_\_  
( ) \_\_\_\_\_ ( ) \_\_\_\_\_ ( ) \_\_\_\_\_  
Witnesses (Please give full name and address)  
\_\_\_\_\_  
\_\_\_\_\_  
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# Web Sites

<b>Sponsors</b>	FFMIA - <a href="http://www.ffmpegia.org/">http://www.ffmpegia.org/</a> AFSA - <a href="http://www.firesprinkler.org">http://www.firesprinkler.org</a> NFSA - <a href="http://www.nfsa.org">http://www.nfsa.org</a> FES - <a href="http://www.fleng.org">http://www.fleng.org</a>
<b>Florida Statutes</b>	<a href="http://www.leg.state.fl.us/Statutes/index.cfm">http://www.leg.state.fl.us/Statutes/index.cfm</a>
<b>Florida Administrative Codes</b>	<a href="http://fac.dos.state.fl.us/fac/">http://fac.dos.state.fl.us/fac/</a>
<b>Florida Building Code</b>	<a href="http://www.dca.state.fl.us/fhcd/fbc/">http://www.dca.state.fl.us/fhcd/fbc/</a>
<b>Florida Fire Prevention code</b>	<a href="http://www.fsfc.ufl.edu/Firecode/NFPA-1Pres/slide1.htm">http://www.fsfc.ufl.edu/Firecode/NFPA-1Pres/slide1.htm</a>
<b>Instructors</b>	Stephen Kowkabany - <a href="mailto:steve@neptunefpe.com">steve@neptunefpe.com</a>

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**THE END!!!**

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