## CHAPTER 61G15-32 RESPONSIBILITY RULES OF PROFESSIONAL ENGINEERS CONCERNING
## THE DESIGN OF FIRE PROTECTION SYSTEMS

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**61G15-32.001 General Responsibility.**
Fire protection engineering documents shall be prepared in accordance with applicable technology and the requirements of the authority having jurisdiction. The documents shall identify the Engineer of Record for the project. Both the engineer of record for the fire protection system and the delegated engineer, if utilized, shall comply with the requirements of the general responsibility rules, Chapter 61G15-30, F.A.C., and with the requirements of the more specific rules contained herein.

*Specific Authority 471.008, 471.033(2) FS. Law Implemented 471.033 FS. History–New 5-19-93, Formerly 21H-32.001.*

**61G15-32.002 Definitions.**
(1) Engineer of Record for the Fire Protection System(s): The Florida Registered Professional Engineer who develops the Fire Protection System(s) design criteria; performs analysis as required: and is responsible for the preparation of the Fire Protection System Engineering Documents.
(2) Fire Protection Component: Any individual part, subsystem or device to be incorporated in a Fire Protection System.
(3) Fire Protection System: Any assembly of Fire Protection components, materials, equipment, which require design to form a fully functional fire protection system.
(4) Listed: A fire protection component tested by a nationally recognized fire protection equipment testing organization. Recognized organizations include, but are not limited to Underwriters Laboratories, Inc. and Factory Mutual Research Corporation.
(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 Section 553.79(6), F.S., 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).
(6) Fire Protection System Layout Documents: Layout drawings, hydraulic calculations, catalog information on standard products, and other construction data prepared by the licensed contractor or Engineer of Record that provides detail on the location of risers, cross mains, branch lines, sprinkler heads, sizing of pipe, hanger locations, and hydraulic calculations and also serves as a guide for fabrication and installation of a fire protection system. 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.
(7) Codes and Standards: Those nationally recognized codes and standards adopted directly or by reference in Chapter 633, Florida Statutes. Applicable codes and standards also include those promulgated by the State Fire Marshal as well as by State and local authorities having jurisdiction. In the event the codes and standards fail to cover or address a specific protection requirement, alternative research, test results, and engineering data may be utilized, relying on the Engineer of Record for Fire Protection to make an informed engineering decision. This definition is not intended to preclude the use of new technologies when said technology has been demonstrated to provide equivalent or improved protection above that of published National Fire Protection standards.

(8) Material Deviation: Any deviation from the design parameters established and documented by the Engineer of Record.
(9) Layout: The location of risers, cross mains, branch lines, sprinkler heads, sizing of pipe, hanger locations, and hydraulic calculations based on engineering documents.

*Specific Authority 471.008, 471.033(2) FS. Law Implemented 471.005(7), 471.033(2) FS. History–New 5-19-93, Formerly 21H-32.002, Amended*
*4-2-00, 6-26-01.*

**61G15-32.003 Common Requirements to All Fire Protection Engineering Documents.**
**(1) The Fire Protection System Engineering Documents shall provide the engineering requirements to be used in the preparation of the Fire Protection System Layout Documents and to indicate the nature and scope of the work, and to describe, detail, dimension, label and define the Fire Protection Components, System(s), materials, assemblies, equipment and its structural and utility support system(s), insofar as they involve the safeguarding of life, health or property.**
(2) The Fire Protection System Engineering Documents shall specify the applicable requirements for the acceptance testing of the fire protection system and components, which shall be based upon applicable codes and standards, where available.
(3) The occupancy of the area or description of a specific hazard being protected by the Fire Protection System(s) shall be shown on the Fire Protection System Engineering Documents.
(4) The applicable code and standard to be used in the preparation of the Fire Protection System Layout Documents shall be shown on the Fire Protection System Engineering Documents. When codes and standards are not available or applicable, and said layout documents are to be based on engineering judgment, any reasons and assumptions made to develop the fire protection concept shall be identified on the Fire Protection System Engineering Documents.
(5) Structural support and structural openings required by the Fire Protection System shall be shown on the Fire Protection System Engineering Documents and shall be referenced on structural engineering documents.
(6) When layout documents contain material deviation from the Engineer of Record's Fire Protection System Engineering Document, such layout documents are not compliant unless they are accompanied by revised Engineering Documents made and sealed by the Engineer of Record for the Fire Protection System.
(7) Requirements for activation control systems, sequence, operating parameters, interlocks, safety related devices, indicators and alarms, shall be shown on the Fire Protection System Engineering Documents, unless shown on other related documents.
(8) Any information deemed appropriate by the Engineer of Record to assist the authority having jurisdiction in understanding the owner's intended use and proposed protection of the building or facility and to provide sufficient direction to the installation contractor or other interested parties regarding the layout of the system(s), shall be included in the Fire Protection System Engineering Documents.
*Specific Authority 471.008, 471.033(2) FS. Law Implemented 471.005(7), 471.033(2) FS. History–New 5-19-93, Formerly 21H-32.003, Amended*
*4-2-00, 6-26-01.*

**61G15-32.004 Design of Water Based Fire Protection Systems.**
**(1) Water Based Fire Protection Systems include, but are not limited to, automatic sprinkler systems of wet, dry, fine water spray (mist), manual, and deluge valve controlled types, pumping systems, standpipes, fire water mains and dedicated fire protection water sources.**
**(2) To ensure minimum design quality in Fire Protection System Engineering Documents, said documents shall include as a minimum the following information when applicable:**
**(a) The Point of Service for the fire protection water supply as defined by Section 633.021(18), F.S.**
**(b) Applicable NFPA standard to be applied, or in the case where no such standard exists, the engineering study, judgments, and/or performance based analysis and conclusions.**
**(c) Classification of hazard occupancy for each room or area.**
**(d) Design approach, which includes system type, densities, device temperature rating, and spacing for each separate hazard occupancy.**
**(e) Characteristics of water supply to be used, such as main size and location, whether it is dead-end or circulating; and if dead-end, the distance to the nearest circulating main, as well as its minimum duration and reliability for the most hydraulically demanding design area.**

**(f) When private or public water supplies are used, the flow test data, including date and time of test, who conducted test or supplied information, test elevation, static gauge pressure at no flow, flow rate with residual gauge pressure, hydrant butt coefficient, and location of test in relation to the hydraulic point of service.**
**(g) Valving and alarm requirements to minimize potential for impairments and unrecognized flow of water.**
**(h) Microbial Induced Corrosion (MIC). The Engineer of Record shall make reasonable efforts to identify water supplies that could lead to Microbial Induced Corrosion (MIC). Such efforts may consist of discussions with the local water purveyor and/or fire official, familiarity with conditions in the local area, or laboratory testing of water supplies. When conditions are found that may result in MIC contamination of the fire protection piping, the engineer shall design corrective measures.**
**(i) Backflow prevention and metering specifications and details to meet local water purveyor requirements including maximum allowable pressure drop.**
**(j) Quality and performance specifications of all yard and interior fire protection components.**
**(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.**

*Specific Authority 471.008, 471.033(2) FS. Law Implemented 471.005(7), 471.033(2) FS. History–New 5-19-93, Formerly 21H-32.004, Amended*
*4-2-00, 6-26-01.*

**61G15-32.005 Design of Gas Agent Fire Suppression Systems.**
(1) Gas Agent Fire Suppression Systems include, but are not limited to, $CO_2$, Halon, inerting and purge gases, and all other gaseous formulations and multi-phase agents released for the purpose of fire control or extinguishment.
(2) The Fire Protection System(s) design specifications shall be based on applicable NFPA standards when available, or alternative engineering sources and good engineering practice when required.

*Specific Authority 471.008, 471.033(2) FS. Law Implemented 471.033 FS. History–New 5-19-93, Formerly 21H-32.005.*

**61G15-32.006 Design of Foam and Foam Water Fire Suppression Systems.**
(1) Foam and Foam Water Fire Suppression Systems include local application, total flooding, high and low expansion foams, and foam-water sprinkler systems.
(2) The Fire Protection System design specifications shall be based on applicable NFPA standards, when available, or alternative engineering sources and good engineering practice when required.

*Specific Authority 471.008, 471.033(2) FS. Law Implemented 471.033 FS. History–New 5-19-93, Formerly 21H-32.006.*

**61G15-32.007 Design of Dry Chemical and Miscellaneous Fire Suppression or Control Systems.**
(1) Dry chemical and miscellaneous systems include, but are not limited to, dry chemical systems, explosion control systems, and fire control structures.
(2) The Fire Protection System design specifications shall be based on applicable NFPA standards, when available, or alternative engineering sources and good engineering practice when required.

*Specific Authority 471.008, 471.033(2) FS. Law Implemented 471.033 FS. History–New 5-19-93, Formerly 21H-32.007.*

**61G15-32.008 Design of Fire Alarms, Signaling Systems and Control System.**
(1) Fire alarms, signaling, and control systems include, but are not limited to, fire protection supervision and alarm circuits, activation controls, and remote signaling.
(2) The Fire Protection System design specifications shall be based on applicable NFPA standards, when available, or alternative engineering sources and good engineering practice when required, and shall comply with the provisions of Rule 61G15-33.006, F.A.C.

*Specific Authority 471.008, 471.033(2) FS. Law Implemented 471.033 FS. History–New 5-19-93, Formerly 21H-32.008.*

**61G15-32.009 Design of Fine Water Spray (Mist) Fire Suppression and Control Systems.**
(1) Fine water spray (mist) systems include water based fire suppression and control systems based on NFPA 750.
(2) The fire protection system(s) shall be based on applicable NFPA standards when available or on alternative engineering sources including full scale fire testing and good engineering practice when no applicable standard exists.
(3) Design of fine water spray systems requires specific knowledge of hazards, physical containment and fire dynamics. A “pre-engineered” listed system shall be installed only after the engineer of record has evaluated the project specific protected hazard.

*Specific Authority 471.008, 471.033(2) FS. Law Implemented 471.005(6), 471.033(2) FS. History–New 4-2-00.*