

ANSWER SHEET

First Name: _____ Last Name: _____ Date: _____

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FL Laws & Rules for Florida Pes (0010134)

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PDH Academy

Laws and Rules Update for Florida PEs

Course Number 0010134

Course Material and Final Exam

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Laws and Rules Updates for Florida PEs

Objectives of the Course:

1. Review recent changes to the Florida Administrative Code: Rule 61G15-34 Chapter: Mechanical Systems
2. Identify how these changes will affect the practice of PEs in Florida.
3. Discuss recent Disciplinary Cases and their applicable law references.

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Part 1

Application

Chapter 61G15-34 of the Florida Administrative Code that relates to “responsibility rules” for mechanical engineers. The responsibility rules are found in Chapters 61G15-30 through 61G15-36, F.A.C. The purpose of the responsibility rules is defined in 61G15-30.001, F.A.C.:

- (1) The Board has adopted these responsibility rules pursuant to section 471.033(2), Florida Statutes, to safeguard the life, health, property, and welfare of the public by promoting proper conduct in the practice of engineering and due care and regard for acceptable engineering principles and standards. The Board considers that professional engineers may avoid disciplinary actions by observing the procedures set forth herein. Failure to comply with these rules may be considered as noncompliance with subsection 61G15-19.001(4), F.A.C., unless the deviation or departure therefrom is justified by the specific circumstances of the project in question. Furthermore, these rules are intended to apply as general guidelines where no contractual relationship exists between the parties addressed herein. These rules are not intended to take precedence over contractual relationships developed between the parties addressed herein, so long as those contractual relationships do not violate Chapter 471, F.S., or the stated purpose of these responsibility rules. These responsibility rules shall apply to every person holding a license as a professional engineer, and every qualified engineering business organization, as appropriate. A professional engineer’s practices, education, training, experience, qualifications, technical competence, conduct, and responsibilities in connection with his authorized engineering practice, services, and creative work are subject to regulation solely by the Board of professional engineers, the courts, and local jurisdictions.*

These rules help in identifying and maintaining a minimum standard of care. They eliminate the question of what a “reasonable professional” would do and will help with the avoidance of disciplinary actions. As a Florida professional engineer, it is important to know what these minimum standards are as failure to comply with these responsibility rules may be considered non compliance and can result in disciplinary action. The remainder of these responsibility rules can be found at: <https://fbpe.org/legal/statutes-and-rules/>

Part 2

Rules Adopted, Amended or Repealed by the Florida Board of Professional Engineers

The following excerpts are recent changes to Chapter 61G15-34. Words ~~stricken~~ have been deleted from the rules, and words underlined have been added to the rules.

I. 61G15-34.002 Definitions.

Effective Date: 8/29/2021

Purpose and Effect: the purpose of the amendment is to update the responsibility rules.

Full Text: 61G15.34.002 Definitions

(1) Appliances. A device or apparatus that is manufactured and designed to utilize energy and specifically regulated by codes and standards.

(2) Codes and Standards. Those nationally recognized Codes and Standards adopted directly or by reference in Florida Building Code (including Florida Energy Efficiency Code, Chapter 13) and Florida Fire Prevention Code set forth in Chapter 69A-60, F.A.C.

(3) Component. Any individual device to be part of a mechanical system.

(4) Engineer of Record for the Mechanical Systems. The Florida Professional Engineer who is in responsible charge for the preparation, signing, dating, sealing and issuing of any engineering document(s) for mechanical systems design criteria or performs the analysis and is responsible for the preparation of the mechanical documents for the project.

(5) Equipment. All piping, ducts, vents, control devices and other components of systems other than appliances which are permanently installed and integrated to perform its intended function.

(6) Fuel Gas. A natural gas, manufactured gas, liquefied petroleum gas or mixtures of these gases, intended to be used as a source for thermal energy and not for motor fuel.

(7) Mechanical. Any device or mechanism that operates due to the action of the material forces in nature acting on bodies or masses.

(8) Mechanical Delegated Engineering Documents. Mechanical Engineering Documents prepared by a delegated engineer to whom the Engineer of Record for the Mechanical System has delegated responsibility for the design of a mechanical component or system and which are signed, sealed and dated by the delegated engineer.

(9) Mechanical Engineering Documents. All mechanical drawings, specifications, reports, calculations, data and other documents utilized to establish the overall design and requirements for the construction, alteration, modernization, repair, demolition, arrangement, and/or use of the mechanical system(s) or analysis or recommendations, as prepared by the Engineer of Record for the mechanical system. Mechanical Engineering Documents shall additionally meet the requirements of Rule 61G15-30.003, F.A.C., Engineering Documents.

(10) Point of Delivery. For natural gas systems, the point of delivery is the outlet of the service meter assembly or the outlet of the service pressure regulator or service shutoff valve where a meter is not provided. Where a valve is provided at the outlet of the service meter assembly, such valve shall be considered to be downstream of the point of delivery. For undiluted liquefied petroleum gas systems, the point of delivery shall be considered to be the outlet of the service pressure regulator, exclusive of line gas regulators, in the system.

(11) Service Pressure Regulator. For natural gas systems, a device installed by the serving gas supplier to reduce and limit the service line pressure to delivery pressure. For undiluted liquefied petroleum gas systems, the regulator located upstream from all line gas pressure regulators, where installed, and downstream from any first stage or a high pressure regulator in the system.

(12) Shop Drawings. Submittals, catalog information on standard products, or drawings prepared solely to serve as a guide for fabrication and installation and requiring no engineering input. These submittals do not require the seal of a Florida Professional Engineer.

(13) System. Any assembly of components, materials, appliances, equipment, work systems, machines, products or devices which require design in accordance with mechanical engineering standards in order to perform its intended function.

(14) No later than December 31, 2024, the Board shall review and consider amendment, modification, or repeal of this rule if review determines this rule creates barriers to entry for private business competition, is duplicative, outdated, obsolete, overly burdensome, or imposes excessive costs.

Rulemaking Specific Authority 471.008, 471.033(2) FS. Law Implemented 471.033 FS. History--New 11-16-94, Amended 2-5-96, 11-13-08, 4-25-21, 8-20-21

II. 61G15.34.003 Design of Heating, Ventilation, Air Conditioning, and Refrigeration Systems

Effective Date: 11/24/2021

Purpose and Effect: the purpose of the amendment is to update the responsibility rules.

Full Text: 61G15.34.003 Design of Heating, Ventilation, Air Conditioning, and Refrigeration Systems.

(1) Heating, Ventilating and Air Conditioning (HVAC) Systems include those systems that control the temperature, humidity, or indoor air quality of a particular space, building or network of buildings. Items to be considered in the design and analysis of HVAC systems are, as applicable to the particular project: peak and block load characteristics and capacities; minimum ventilation; filtration; heat or energy transfer; movement of air, water, or other fluids associated with HVAC processes; pressure drop; instrumentation and control; performance requirements; and installation requirements.

(2) The HVAC System(s) shall be based on and shall reference the Florida Building Code, the Florida Fire Prevention Code, any other applicable standards (such as ASHRAE, NFPA, ASME, ANSI, etc.); or if no other such standards are available on alternative engineering sources and good engineering practice.

(3) For Mechanical Engineering Documents pertaining to HVAC systems exempted by the threshold requirements for mandatory use of professional engineering services, the Engineer of Record shall determine the level of detail shown on plans for HVAC systems. All such plans include a disclaimer stating the HVAC systems are exempt from professional engineering services and shall provide a clear understanding of the minimum system requirements expected to be installed by the contractor and permitted by the authority having jurisdiction (AHJ). In the event the Engineer of Record provides more information and direction than is minimally required, he or she shall be held responsible for the technical accuracy of the work in accordance with applicable codes, standards and sound engineering principles.

(4) Mechanical Engineering Documents pertaining to HVAC systems that exceed the threshold requirements for mandatory use of professional engineering services, the plans must include the following information, if applicable to the particular project:

(a) Demonstrate and provide adequate information for the AHJ to determine compliance with codes and ordinances. These may include test methods and results; or data and tabulations that are results of the design.

(b) Equipment selection schedule for each piece of mechanical equipment. All equipment must include the following information, if applicable to the particular equipment:

1. Equipment efficiencies.
2. Electrical requirements based on voltage and phase.
3. Fuel requirements.
4. Static pressure and fan air quantities.
5. Fluid flow and pressure head quantities.
6. Heat transfer capacities.
7. Cooling coil requirements based on sensible heat, latent heat, and total heat gains.
8. Filtration requirements.
9. Motor sizes and quantities to demonstrate compliance with the Florida Building Code, Energy Conservation.

(c) Floor plans; site plans; and building and mechanical system sections or elevations as appropriate to provide the minimum system requirements expected to be installed by the contractor.

(d) Ventilation requirements based on natural or mechanical means, as necessary for demonstrating compliance with the Florida Building Code, Mechanical.

(e) Energy recovery requirements.

(f) Outside and inside design conditions for cooling, heating, dehumidification, evaporation, and humidification processes, as applicable.

1. Processes affecting sensible heat only may specify outside dry bulb temperature only.
2. Processes affecting latent heat only may specify outside humidity ratio only.
3. Processes affecting total heat must specify outside dry bulb temperature and at least one other coincidental psychrometric state point.
4. Inside design conditions must include dry bulb temperature and either wet bulb temperature or relative humidity for cooling and heating conditions, as applicable. Where inside design conditions are setback based on occupancy, both occupied and unoccupied design conditions must be listed.

(g) Duct riser diagrams when ductwork travels vertically more than three stories.

(h) Process schematic flow diagrams with pipe sizes and fluid flow quantities.

(i) Condensation discharge piping layout with pipe sizes.

(j) Instrumentation and Control System requirements, unless included on either Electrical or on Instrumentation and Control plans to ensure intentional operation of the system.

(k) Unless included on plumbing system plans, design for fuel gas system, including piping layout and sizes; isometric or riser diagram with pipe sizes; and fuel gas capacity and pressure for each pipe section.

(l) Ductwork layout and sizing; insulation requirements; supply, return, and exhaust inlet and outlet sizes; and outside air intake sizes. Air quantities shall be specified for inlets and outlets.

(m) Piping layout and sizing; and insulation requirements.

(n) Materials for all HVAC systems shall be specified.

(o) All data needed to complete the calculations for compliance with Florida Building Code, Energy Conservation as applicable.

(p) Identify and locate required fire protection devices, such as fire dampers, smoke dampers, and smoke detectors.

(q) A list, description, or details of through-penetration firestop systems as applicable.

(r) Building pressurization criteria as applicable.

1. Overall building net pressurization consisting of an air balance summary of outside (fresh) ventilation air quantities versus exhaust air quantities. For existing facilities where only a portion of the building is being renovated, the air balance summary must include all affected areas, which may not require an air balance summary for the entire building.

2. In spaces with critical pressurization requirements, such as in health care facilities, pharmaceutical facilities, and laboratories, a pressurization summary or diagram depicting pressure relationship with adjacent spaces. Supply, return, exhaust, and make-up air quantities, overall room pressurization, and make-up (transfer) air pathways shall be specified. For spaces with varying conditions, the pressurization summary shall include scenarios at both maximum and minimum design conditions.

(s) Systems commissioning requirements for demonstrating compliance with the Florida Build Code, Energy Conservation.

(5) No later than December 31, 2024, the Board shall review and consider amendment, modification, or repeal of this rule if review determines this rule creates barriers to entry for private business competition, is duplicative, outdated, obsolete, overly burdensome, or imposes excessive costs.

Rulemaking Specific Authority 471.008, 471.033(2) FS. Law Implemented 471.033 FS. History--New 11-16-94, Amended 11-13-08,_____.

III. 61G15-34.004 Design of Process and Fluid Flow Systems

Effective Date: 11/24/2021

Purpose and Effect: the purpose of the amendment is to update the responsibility rules.

Full Text: 61G15-34.004 Design of Process and Fluid Flow Systems.

(1) Process and Fluid Flow Systems include those systems that move fluids either by pumps, fans, or gravity as part of an industrial, commercial, or cogeneration process. Items to be included in the design and analysis of these systems are, as applicable to the particular project: load characteristics and capacities; process type; fluid type and characteristics; distribution of fluids; pressure drop; instrumentation and control; performance requirements; and installation requirements.

(2) The Process and Fluid Flow System(s) shall be based on and shall reference the Florida Fire Prevention Code, any other applicable standards (such as ASHRAE, NFPA, ASME, ASSE, ANSI, etc.); the Florida Building Code (where applicable); or if no other such standards are available on alternative engineering sources and good engineering practice.

(3) Mechanical Engineering Documents pertaining to Process and Fluid Flow Systems must include the following information, if applicable to the particular project:

1. Equipment efficiencies.
2. Electrical requirements based on voltage and phase.
3. Fuel requirements.
4. Motor sizes and quantities.
5. Fluid flow and pressure head quantities.
6. Tank capacities for storage.

(c) Floor plans; site plans; and building and mechanical system sections or elevations as appropriate to provide the minimum system requirements expected to be installed by the contractor.

(d) Process schematic flow diagrams with pipe sizes and fluid flow quantities.

(e) System piping or ductwork layout, sizing, and insulation requirements.

(f) Specific system design requirements to allow for independent project review.

(g) Instrumentation and Control Systems requirements, unless included on either Electrical or on Instrumentation and Control plans, to ensure intentional operation of the system.

(h) Required fire protection systems and devices.

(i) Materials for all Process and Fluid Flow Systems shall be specified.

(j) All data needed to complete the calculations for compliance with Florida Building Code, Energy Conservation as applicable, unless the process or environment justifies an exemption by engineering design.

(k) A list, description, or details of through-penetration firestop systems as applicable.

(l) System commissioning requirements for demonstrating compliance with the Florida Building Code, Energy Conservation.

(4) No later than December 31, 2024, the Board shall review and consider amendment, modification, or repeal of this rule if review determines this rule creates barriers to entry for private business competition, is duplicative, outdated, obsolete, overly burdensome, or imposes excessive costs.

Rulemaking Specific Authority 471.008, 471.033(2) FS. Law Implemented 471.033 FS. History--New 11-16-94,_____.

IV. 61G15-34.005 Design of Heat and Energy Transfer Systems

Effective Date: 4/25/2021

Purpose and Effect: the purpose of the amendment is to update the rule language.

Full Text: 61G15-34.005 Design of Heat and Energy Transfer Systems.

(1) Heat and Energy Transfer Systems include those systems that transfer heat or energy from one fluid to another, as part of an industrial, commercial, or cogeneration process. Items to be included in the design and analysis of these systems are, as applicable to the particular project: load characteristics and capacities; process type; fluid type and characteristics; distribution of fluids; pressure drop; instrumentation and control; performance requirements; and installation requirements.

(2) The Heat and Energy Transfer System(s) shall be based on and shall reference the Florida Fire Prevention Code, any other applicable standards (such as ASHRAE, NFPA, ASME, ASSE, ANSI etc.), the Florida Building Code (where applicable); or if no other such standards are available on alternative engineering sources and good engineering practice.

(3) Mechanical Engineering Documents pertaining to Heat and Energy Transfer Systems must include the following information, if applicable to the particular project:

(a) Demonstrate and provide adequate information for the AHJ to determine compliance with codes and ordinances. These may include test methods and results or data and tabulations that are results of the design.

(b) Equipment schedule for each piece of mechanical equipment including, not limited to, pumps, fans, apparatuses, heat exchangers, or tanks. All equipment must include the following information, if applicable to the particular equipment.

1. Equipment efficiencies.
2. Electrical requirements based on voltage and phase.
3. Fuel requirements.
4. Heat transfer capacities.
5. Motor sizes and quantities.
6. Fluid flow and pressure head quantities.
7. Tank capacities for storage.

(c) Floor plans; site plans; and building and mechanical system sections or elevations as appropriate to provide the minimum system requirements expected to be installed by the contractor.

(d) Process schematic flow diagrams with pipe sizes and fluid flow quantities.

(e) System piping or ductwork layout, sizing, and insulation requirements.

(f) Specific system design requirements to allow independent project review.

(g) Instrumentation and Control System requirements, unless included on either Electrical or on Instrumentation and Control plans to ensure intentional operation of the system.

(h) Required fire protection systems and devices.

(i) Materials for all Heat and Energy Transfer Systems shall be specified.

(j) All data needed to complete the calculations for compliance with Florida Building Code, Energy Conservation as applicable.

(k) A list, description, or details of through-penetration firestop systems as applicable.

(l) System commissioning requirements for demonstrating compliance with the Florida Building Code, Energy Conservation.

(4) No later than December 31, 2024, the Board shall review and consider amendment, modification, or repeal of this rule if review determines this rule creates barriers to entry for private business competition, is duplicative, outdated, obsolete, overly burdensome, or imposes excessive costs.

Rulemaking Specific Authority 471.008, 471.033(2) FS. Law Implemented 471.033 FS. History--New 11-16-94,_____.

V. 61G15-34.006 Design of Material Transfer Systems

Effective Date: 4/25/2021

Purpose and Effect: The purpose of the amendment is to update the rule language.

Full Text: 61G15-34.006 Design of Material ~~and Human~~ Transfer Systems.

(1) Material Transfer Systems are those systems that are designed to move materials or humans from one place to another as a part of an industrial or commercial process. Items to be included in the design and analysis of these systems are, as applicable to the particular project: load characteristics and capacities; material type and characteristics; elevator and conveyor types; ventilation requirements; instrumentation and control; performance requirements; and installation requirements.

(2) The Material Transfer System(s) shall be based on and shall reference the Florida Fire Prevention Code, any other applicable standards (such as ASHRAE, NFPA, ASME, ASSE, ANSI, etc.), the Florida Building Code (where applicable); or if no other such standards are available on alternative engineering sources and good engineering practice.

(3) Mechanical Engineering Documents pertaining to Material Transfer Systems must include the following information, if applicable to the particular project:

(a) Demonstrate and provide adequate information for the AHJ to determine compliance with codes and ordinances. These may include test methods and results or data and tabulations that are results of the design.

(b) Equipment selection schedule for each piece of mechanical equipment. All equipment must include the following information, if applicable to the particular equipment.

1. Elevator, conveyor, or vacuum type of conveyance system.

2. Electrical requirements based on voltage and phase.

3. Hydraulic requirements.

4. Motor sizes and quantities.

5. Material type, weight, and flow quantities.

(c) Floor plans; site plans; and building and mechanical system sections or elevations as appropriate to provide the minimum system requirements expected to be installed by the contractor.

(d) Process schematic flow diagrams with pipe sizes and fluid flow quantities.

(e) System conveyor and/or elevator layout.

(f) System piping or ductwork layout, sizing, and insulation requirements.

(g) Specific system design requirements to allow for independent project review.

(h) Instrumentation and Control System requirements, unless included on either Electrical or on Instrumentation and Control plans to ensure intentional operation of the system.

(i) Required fire protection systems and devices.

(j) Materials for all Material Transfer Systems shall be specified.

(k) A list, description, or details of through-penetration firestop systems as applicable.

(4) No later than December 31, 2024, the Board shall review and consider amendment, modification, or repeal of this rule if review determines this rule creates barriers to entry for private business competition, is duplicative, outdated, obsolete, overly burdensome, or imposes excessive costs.

Rulemaking Specific Authority 471.008, 471.033(2) FS. Law Implemented 471.033 FS. History--New 11-16-94,_____.

VI. 61G15-34.007 Design of Plumbing Systems

Effective Date: 11/24/2021

Purpose and Effect: The purpose of the amendment is to update the responsibility rules.

Full Text: 61G15-34.007 Design of Plumbing Systems.

(1) Plumbing Systems are those systems within or adjacent to a building that convey fluids and gases in connection with sanitary drainage, storm drainage, specialty drainage, venting, water supply, water heating, vacuum, and compressed gases for medical and non-medical applications. Items to be considered in the design and analysis of plumbing systems are, as applicable to the particular project: load characteristics and capacities; distribution of fluids; pressure drop; instrumentation and control; performance requirements; and installation requirements.

(2) The Plumbing System(s) shall be based on and shall reference the Florida Building Code, the Florida Fire Prevention Code, applicable standards (such as ASHRAE, ASME, ASPE, ASSE, ANSI, NFPA, etc.); or on if no other such standards are available alternative engineering sources and good engineering practice.

(3) For Mechanical Engineering Documents pertaining to Plumbing Systems exempted by the threshold requirements for mandatory use of professional engineering services, the Engineer of Record shall determine the level of detail shown on plans for a plumbing system. All such plans shall include a disclaimer stating the Plumbing systems are exempt from professional engineering services and shall provide a clear understanding of the minimum system requirements expected to be installed by the contractor and permitted by the authority having jurisdiction (AHJ). In the event the Engineer of Record provides more information and direction than its minimally required, he or she shall be held responsible for the technical accuracy of the work in accordance with applicable codes, standards, and sound engineering principles.

(4) Mechanical Engineering Documents pertaining to Plumbing Systems that exceed the threshold requirements for mandatory use of professional engineers services must include the following information, if applicable to the particular project:

(a) Demonstrate and provide adequate information for the AHJ to determine compliance with codes and ordinances. These may include test methods and results or data and tabulations that are results of the design.

(b) Equipment selection schedules for each piece of plumbing equipment, including but not limited to, plumbing fixtures, apparatuses, tanks, or drains. All equipment must include the following information, if applicable to the particular equipment:

1. Equipment efficiencies.
2. Electrical requirements based on voltage and phase.
3. Fuel requirements.
4. Fixture flow or flushing rates.
5. Fluid flow and pressure head quantities.
6. Heat transfer capacities.
7. Motor sizes and quantities.
8. Tank capacities for storage, expansion, or compression.
9. Interceptor and separator capacities.

(c) Floor plans, site plans, and building and plumbing system sections or elevations as appropriate to provide the minimum system requirements expected to be installed by the contractor.

(d) Isometric or riser diagram with pipe sizes as follows:

1. Potable water.
2. Sanitary and vent.
3. Storm water.
4. Other fluids and gases.

(e) Piping layouts and sizing; and insulation requirements.

(f) Total or cumulative plumbing capacities as follows, either listed on the isometric or riser diagrams or in table form on the plans.

1. Total water supply fixture units and coincidental flow rate in gallons per minute.
2. Total drainage fixture units.
3. Cumulative area in square feet and coincidental flow rate in gallons per minute for each roof drain or storm drain. Total flow rate in gallons per minute for each storm water conductor discharging from the building.

(g) Design data for septic tank drain field sizing, when applicable.

(h) Portable water system design for minimizing bacteria growth (Legionella), based on heat, chemicals, or other means.

(i) Domestic hot water system design to prevent scalding, when applicable. Designs shall include, but not be limited to:

1. Design temperatures.
2. Temperature monitoring points necessary to confirm temperatures throughout the system.
3. Mixing valves or temperature-limiting devices.

(j) Design shall be in accordance with requirements for accessibility by individuals with disabilities adopted by the authority having jurisdiction.

(k) Unless included on HVAC system plans, design for fuel gas system, including piping layout and sizes; isometric or riser diagram with pipe sizes; and fuel gas capacity and pressure for each pipe section.

(l) Instrumentation and Control requirements, unless included on either Electrical or on Instrumentation and Control.

(m) Identify and locate plumbing fixtures, valves, pumps, tanks, accessories, specialties, enclosures, and such equipment.

(n) Materials for all plumbing systems shall be specified.

(o) All data needed to complete the calculations for compliance with Florida Building Code, Energy Conservation as applicable.

(p) A list, description, or details of through-penetration firestop systems as applicable.

(q) System commissioning requirements for demonstrating compliance with the Florida Building Code, Energy Conservation.

(5) No later than December 31, 2024, the Board shall review and consider amendment, modification, or repeal of this rule if review determines this rule creates barriers to entry for private business competition, is duplicative, outdated, obsolete, overly burdensome, or imposes excessive costs.

Rulemaking Specific Authority 471.008, 471.033(2) FS. Law Implemented 471.033 FS. History–New 11-16-94, Amended 11-13-08,_____.

VII. 61G15-34.008 Design of Mechanical Machines and Motion Systems

Effective Date: 4/25/2021

Purpose and Effect: The purpose of the amendment is to update the rule language.

Full Text: 61G15-34.008 Design of Mechanical Machines and Motion Systems.

(1) Mechanical Machines and Motion Systems include any and all mechanical systems, devices, machines and equipment used by the public for conveyance, amusement, transportation, or facilitation of any process. These systems include elevators, escalators, moveable walkways, amusement park rides, etc. Items to be included in the design and analysis of these systems are, as applicable to the particular project: load characteristics and capacities; accessibility requirements for persons with disabilities; system type and characteristics; instrumentation and control; operating dynamics requirements; structural requirements; and installation requirements.

(2) The Mechanical Machines and Motion System(s) shall be based on and shall reference the Florida Building Code, the Florida Fire Prevention Code, any other applicable standards (such as ASHRAE, NFPA, ASME, ANSI, etc.); or if no other such standards are available on alternative engineering sources and good engineering practice.

(3) Mechanical Engineering Documents pertinent to Mechanical Machines and Motion Systems must include the following information, if applicable to the particular project:

(a) Demonstrate and provide adequate information for the AHJ to determine compliance with codes and ordinances. These may include test methods and results or data and tabulations that are results of the design.

(b) Equipment schedule for each piece of mechanical equipment. All equipment must include the following information:

1. Elevator or conveyor type.

2. Electrical requirements based on voltage and phase.

3. Hydraulic requirements.

4. Motor sizes and quantities.

5. Gear and drive sizes.

6. System weight loading requirements.

(c) Floor plans; site plans; and building and mechanical system sections or elevations as appropriate to provide the minimum system requirements expected to be installed by the contractor.

(d) System schematic diagrams with sizes and fluid flow quantities.

(e) System piping or ductwork layout, sizing, and insulation.

(f) Specific system design requirements to allow for independent project review.

(g) Instrumentation and Control System requirements, unless included on either Electrical or on Instrumentation and Control plans to ensure intentional operation of the system.

(h) Required fire protection systems and devices.

(i) Materials for all Mechanical Machines and Motion Systems shall be specified.

(j) A list, description, or details of through-penetration firestop systems as applicable.

(k) Coordination with life safety means of egress requirements in NFPA 101.

(4) No later than December 31, 2024, the Board shall review and consider amendment, modification, or repeal of this rule if review determines this rule creates barriers to entry for private business competition, is duplicative, outdated, obsolete, overly burdensome, or imposes excessive costs.

Rulemaking Specific Authority 471.008, 471.033(2) FS. Law Implemented 471.033 FS. History--New 11-16-94,_____.

VIII. 61G15-34.009 Design of Instrumentation and Control Systems

Effective Date: 4/25/2021

Purpose and Effect: The purpose of the amendment is to update the rule language.

Full Text: 61G15-34.009 Design of Instrumentation and Control Systems.

(1) Instrumentation and Control Systems are used to automate processes; control and monitor HVAC, plumbing, or electrical systems; and monitor fire protection systems where applicable. Items to be included in the design of control systems are reliability of control of critical processes; design parameters of systems being controlled; safety of personnel; suitability of instruments and control devices in the environment in which they are to be installed; performance requirements; and installation requirements.

(2) The Instrumentation and Control System(s) shall be based on and shall reference the Florida Building Code, the Florida Fire Prevention Code, and another applicable standards (such as ASHRAE, NFPA, ASME, ASPE, ANSI, etc.); or if no other such standards are available on alternative engineering sources and good engineering practice.

(3) Mechanical Engineering Documents pertaining to Instrumentation and Controls Systems must include the following information, if applicable to the particular project.

(a) Demonstrate and provide adequate information for the AHJ to determine compliance with codes and ordinances. These may include test methods and results or data and tabulations that are results of the design.

(b) A description of the control systems functions, sequence of operation, or a functional diagram for each system to be controlled in order to provide the minimum functional requirements and as necessary for demonstrating compliance with the Florida Building Code, Energy Conservation.

(c) Materials for all instrumentation and control systems shall be specified.

(d) Floor plans, site plans, and building sections or elevations as appropriate showing the location of major control components.

(e) Location of all instrumentation and control components shall be identified.

(f) System network architecture riser diagram for instrumentation and control systems.

(g) Control and Process System Diagrams.

(h) Electrical requirements including conductors and cables (may be on electrical drawings).

(i) All data needed to complete the calculations for compliance with Florida Building Code, Energy Conservation as applicable.

(j) A list, description, or details of through-penetration firestop systems as applicable.

(k) System commissioning requirements for demonstrating compliance with the Florida Building Code, Energy Conservation.

(4) No later than December 31, 2024, the Board shall review and consider amendment, modification, or repeal of this rule if review determines this rule creates barriers to entry for private business competition, is duplicative, outdated, obsolete, overly burdensome, or imposes excessive costs.

Rulemaking Specific Authority 471.008, 471.033(2) FS. Law Implemented 471.033 FS. History--New 11-16-94,_____.

IX. 61G15-34.010 Design of Fuel Gas Systems

Effective Date: 4/25/2021

Purpose and Effect: The purpose of the amendment is to update the rule language.

Full Text: 61G15-34.010 Design of Fuel Gas Systems

(1) Fuel Gas Systems include those systems that convey or utilize gaseous fuels as a source of potential energy as part of an energy transfer process, applying from the point of delivery up to and including the appliances and related accessories. Items to be considered in the design and analysis of fuel gas systems are, as applicable to the particular project: load characteristics and capacities; distribution of gases; pressure drop; instrumentation and control; performance requirements; and installation requirements.

(2) The Fuel Gas System(s) shall be based on and shall reference the Florida Building Code, the Florida Fire Prevention Code, any other applicable standards (such as NFPA, ASME, ANSI, etc.); or if no other such standards are available on alternative engineering sources and good engineering practice.

(3) Mechanical Engineering Documents pertaining to Fuel Gas Systems must include the following information, if applicable to the particular project:

(a) Demonstrate and provide adequate information for the AHJ to determine compliance with codes and ordinances. These may include test methods and results or data and tabulations that are results of the design.

(b) Equipment selection schedule for each piece of fuel gas equipment, including but not limited to, pumps, apparatuses, or tanks. All equipment must include the following information, if applicable to the particular equipment:

1. Equipment efficiencies.

2. Electrical requirements based on voltage and phase.

3. Fuel requirements.

4. Motor sizes and quantities.

5. Fluid flow and pressure head quantities.

6. Tank capacities for storage.

(c) Floor plans; site plans; and building and mechanical system sections or elevations as appropriate to provide the minimum system requirements expected to be installed by the contractor.

(d) The Point of Delivery for the fuel gas system.

(e) Isometric or riser diagrams with sizes as follows:

1. Fuel gas piping.

2. Venting systems.

(f) Piping layouts and sizing.

(g) Total or cumulative fuel gas capacities and pressure for each pipe section either listed on the isometric or riser diagrams or in table form on the plans.

(h) Venting layout and sizing, based on natural, induced, or mechanical means, as necessary for demonstrating compliance with the Florida Building Code, Fuel Gas.

(i) Design data for fuel tank sizing, when applicable.

(j) Instrumentation and Control requirements, unless included on either Electrical or on Instrumentation and Control plans.

(k) Identify and locate all fuel gas valves, pumps, tanks, accessories, specialties, enclosures, and such equipment.

(l) Materials for all fuel gas systems shall be specified.

(m) A list, description, or details of through-penetration firestop systems as applicable.

(4) No later than December 31, 2024, the Board shall review and consider amendment, modification, or repeal of this rule if review determines this rule creates barriers to entry for private business competition, is duplicative, outdated, obsolete, overly burdensome, or imposes excessive costs.

Rulemaking Authority 471.008, 471.033(2) FS. Law Implemented 471.033 FS. History--New, _____.

Part 3

Disciplinary Cases

I. Case Number 2019052377; Violating Sections 471.033(1)(g), Florida Statutes, and Rule 61G15-19.001(4), Florida Administrative Code

Case Summary: Licensee was charged with violating Section 471.033(1)(g), Florida Statutes, and Rule 61G15-19.001(4), Florida Administrative Code; negligence in the practice of engineering. Licensee signed and sealed permit documents involving a septic system in Apopka, Fla., without performing engineering analysis as required by accepted engineering standards.

Ruling: The case was presented to the full Board upon a Settlement Stipulation. The Board imposed an administrative fine of \$1,000 and costs of \$3,376.20; an appearance before the Board when the stipulation was presented; and successful completion of the Board's Study Guide and a Board-approved online course in basic engineering ethics and professionalism. Final Order was issued March 3, 2021.

II. Case Number 2019060873; Violating Sections 471.033(1)(a), Florida Statutes, and Rule 61G15-19.001(6)(s), Florida Administrative Code

Case Summary: Licensee was charged with violating Section 471.033(1)(g), Florida Statutes, and Rule 61G15-19.001(4), Florida Administrative Code; negligence in the practice of engineering, failure by a Professional Engineer to use due care in performing in an engineering capacity or failing to have due regard for acceptable standards of engineering principles.

Licensee signed, dated, and sealed deficient engineering documents for a fire alarm system for a building in Winter Park, Fla.

Ruling: The case was presented to the full Board upon an amended Settlement Stipulation. The Board imposed an administrative fine of \$1,000 and costs of \$7,349.05, a two-year probation, a review of fire system engineering projects at six- and 18-month intervals, and successful

completion of the Board's Study Guide and a Board-approved course in engineering ethics and professionalism. Final Order was issued March 3, 2021.

III. Case Number 2020044838; Violating Sections 471.033(1)(g), Florida Statutes, and Rule 61G15-19.001(4), Florida Administrative Code; and Section 471.033(1)(a), F.S., Section, 471.025(1), F.S., and Rule 61G15-23.001, F.A.C

Case Summary: Licensee was charged with violating Section 471.033(1)(g), Florida Statutes, and Rule 61G15-19.001(4), Florida Administrative Code, negligence in the practice of engineering, failure by a Professional Engineer to use due care in performing in an engineering capacity, or failing to have due regard for acceptable standards of engineering principles; and Section 471.033(1)(a), F.S., Section, 471.025(1), F.S., and Rule 61G15-23.001, F.A.C., not dating signed and sealed engineering documents files for public record.

Licensee signed and sealed deficient engineering documents for structural designs for concrete masonry unit screen walls and an aluminum fence in Winter Haven, Fla. In addition, the engineering documents were not dated.

Ruling: The case was presented to the full Board upon a Settlement Stipulation. The Board imposed an administrative fine of \$1,000 and costs of \$5,025.76, an appearance before the Board, structural engineer project reviews at six- and 18-month intervals, and successful completion of the Board's Study Guide and a Board-approved online course in engineering ethics and professionalism. Final Order was issued Aug. 20, 2021.

Part 4

Final Exam

1. Under the definitions in Florida Administrative Code: Rule 61G15-34.002, what is a device or apparatus that is manufactured and designed to utilize energy and specifically regulated by codes and standards?
 - a. Component
 - b. Appliance
 - c. Equipment
 - d. Shop Drawing

2. Under Rule 61G15-34.002, _____ can be natural gas, manufactured gas, liquified petroleum gas or a mixture of these gases, intended to be used as a source for thermal energy and not for motor fuel.
 - a. Fuel Gas
 - b. Equipment
 - c. Service Pressure Regulator
 - d. System

3. Heating, Ventilating and Air Conditioning (HVAC) Systems include those systems that control which of the following?
 - a. Temperature
 - b. Humidity
 - c. Indoor Air Quality
 - d. All of the above

4. Which type of system moves fluids either by pumps, fans, or gravity as part of an industrial, commercial or cogeneration process?
 - a. Ductwork Layout systems
 - b. Heat Transfer Systems
 - c. Process and Fluid Flow Systems
 - d. Material Transfer System.

5. Which of the following systems are designed to move materials or humans from one place to another as a part of an industrial or commercial process?
 - a. Heat and Energy Transfer Systems
 - b. Material Transfer Systems
 - c. Process and Fluid Flow Systems
 - d. None of the above

6. _____ Systems are within or adjacent to a building and convey fluids and gases in connection with sanitary drainage, storm drainage, specialty drainage, venting, water supply, water heating, vacuum, and compressed gases for medical and non -medical applications.
 - a. Plumbing
 - b. Heating
 - c. Material Transfer
 - d. Equipment

7. The purpose and effect of the update to section 61G15-34.008 Design of Mechanical Machines and Motion Systems is to:
 - a. Update the rule language
 - b. Update the plumbing fixtures
 - c. Create barriers
 - d. Design Temperatures

8. Instrumentation and Control Systems are used to _____ processes.
 - a. Determine
 - b. Build
 - c. Automate
 - d. Comply with the

9. A fuel gas system shall be based on and shall reference which of the following?
- a. The Florida Building Code
 - b. The Florida Fire Prevention Code
 - c. Any other applicable standards (such as NFPA, ASME, SNSI, etc.)
 - d. All of the above
10. The _____ are found in Chapters 61G15-30 through 61G15-36, F.A.C.
- a. Responsibility Rules
 - b. Professionals
 - c. Circumstances
 - d. Disciplinary actions