



2639 N Monroe St., Suite B-112
Tallahassee, FL 32303
Phone: (850) 521-0500
Fax: (850) 521-0521
fbpe.org

RON DeSANTIS, GOVERNOR
STATE OF FLORIDA

HALSEY BESHEARS, SECRETARY
DEPT. OF BUSINESS AND PROFESSIONAL REGULATION

December 10, 2019

David Cox, CEO
NCEES
P. O. Box 1686
Clemson, SC 29633

Dear Mr. Cox:

The Florida Board of Professional Engineers (FBPE) recently received a request from the American Society of Plumbing Engineers (ASPE) to support the society's efforts to have a plumbing/piping option included in the NCEES Mechanical Engineering Principles and Practice Examination. The ASPE presented their justifications for the plumbing option at FBPE's regular board meeting on August 7, 2019. At that time, FBPE voted unanimously to support ASPE's efforts to include the plumbing option in the NCEES Mechanical Engineering Principles and Practice Examination.

According to ASPE, the following outlines include proof of such need, estimate of usage, and impact on safeguarding the health, safety, and welfare of the public:

Proof of such need

- If one uses the standard definition of "plumbing" as the apparatus (i.e., piping and fixtures) concerned in the distribution of water in a building and the transportation of sanitary and waste fluids, a unique knowledge and skill set support a basic understanding of the code. Note that the underlying principles of the code and/or technical documents come from the engineering principles that are the foundation of any engineering discipline.

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ZANA RAYBON
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- However, the design of plumbing systems beyond the standard definition requires a deep understanding of the interaction of such systems within the environment in which they are being applied. The more technical systems require greater knowledge and skills, such as:
 - Domestic and process water treatment requirements and systems (e.g., soft, reverse osmosis, distilled, and deionized water)
 - Water distribution systems on a macro scale
 - Specialized waste systems and treatment (e.g., fats, oils, and grease [FOG], petroleum-based oils, solid and corrosive wastes)
 - Fuel gas systems (e.g., natural gas and liquified petroleum gas [LPG])
 - Medical, laboratory, and service gas systems
 - Water reclamation systems (e.g., rainwater, grey, and black water sources)
- Consider the City of Flint, MI, in which appropriate evaluation of the impact of switching water systems was neither understood nor considered. Changing the pH of the water allowed the protective lining of the lead piping to be stripped from the existing piping, permitting lead to enter the drinking water of the consumer. This has had and will continue to have a negative impact on public health, safety, and welfare (which is the paramount, and underlying, concern that ASPE is attempting to address).
- Legionella continues to have an adverse impact on public health, safety, and welfare. Initially this was thought to be associated with cooling towers and in some cases continues to be. However, the Legionella bacterium is a naturally occurring condition in all water. The lack of understanding as to how to adequately monitor and control such bacterium within water will continue to have a negative impact on public health, safety, and welfare.
- The level of knowledge needed for modern and complex water and sanitary systems continues to increase. The continued growth in complexity will continue to mandate a need for specialized knowledge that differs from engineers who specialize in environmental conditioning.
- No engineer, professional or degreed, can be knowledgeable of all aspects of a given area of engineering. That is why Professional Engineers focus on their core competencies: those competencies that are verified when one's peers are in agreement that the person has demonstrated sufficient knowledge in the product/work they produce and are consistent with safeguarding public health, safety, and welfare.
- A large portion of Florida's economy is due to the tourism industry including multiple theme parks in Central Florida. Theme parks have various attractions in which the plumbing engineer must design complex systems that may include the compressed air that may be used for the braking of a roller coaster plus water filtration and chlorination systems utilized on water rides and attractions. These systems are critical to the enjoyment of the guests at the parks, while also protecting their health and safety.

Plumbing engineering includes a vast array of systems, requiring a unique knowledge and skill set.

Estimate of usage

- Plumbing should attract 50 to 150 first-time takers on a national level once it is developed and placed in the NCEES exam process. We estimate that, for the State of Florida, Plumbing should attract 9 per session and 18 per year of first-time test takers.

Impact on safeguarding the health, safety, and welfare of the public

- The ultimate goal of ASPE's initiative is the establishment of a verifiable measure of competency for the discipline of Plumbing and the continued, even enhanced, protection of the health, safety, and welfare of the public at large

Please let me know if you need any further information.

Sincerely,

FLORIDA BOARD OF PROFESSIONAL ENGINEERS



Zana Raybon
Executive Director

cc: Kenneth Todd, PE, FBPE Chair
Billy Smith, ASPE Executive Director