



STATE OF IOWA

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PROFESSIONAL LICENSING & REGULATION

JEFF PLAGGE
SUPERINTENDENT

March 24, 2020

David Cox, CEO
NCEES
P. O. Box L686
Clemson, SC 29633

Dear Mr. Cox:

The Iowa Engineering and Land Surveying Examining Board 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's request was presented at the Board's regular meeting on March 12, 2020. At that time, Iowa Engineering and Land Surveying Examining Board voted unanimously to support ASPE's efforts to include the plumbing option in the NCEES Mechanical Engineering Practice Examination.

1. 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.
- 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.


2. **Estimate of usage**

- We estimate that, for the State of Iowa, Plumbing should attract 5 - 7 per session and 10 - 14 per year of first-time test takers.

3. **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. As Registered Engineers, should we be expected to do any less?

Best regards,

A handwritten signature in cursive script that reads "Robert E. Lampe".

Robert E. Lampe
Executive Officer
Iowa Engineering and Land Surveying Examining Board

Cc: Paul Baker
David Dexter
Ron Bartley
Billy Smith