

## Board Opinion

### **NCEES Exam Appropriate for Licensure**

It is the Board's opinion that applicants for licensure should choose the examination that is most closely aligned with their chosen area of practice. The selection of an exam in a loosely related or even non-related practice area is not in keeping with the spirit of the law and the ethical obligation of the examinee.

NCEES offers exams in 25 separate areas of engineering practice. In doing so NCEES recognizes the specialization of the engineering profession through the offering of practice specific exams. These 25 exams are meant to fulfill the licensing requirement to test the individual's ability to competently practice a particular engineering specialization or discipline. The State of Alabama licenses engineers as professional engineers, but in doing so engineers choose an area of specialization. Within most of the primary disciplines of engineering, there are at least two separate specialties. Chemical is the only major discipline that does not have a specialty exam offered.

As an example, mechanical engineering is a single engineering discipline as studied in a university; however, when a mechanical engineer is licensed by exam, that person is required to choose one of three separate specialized NCEES exams classified under mechanical engineering. Civil and electrical engineering examinees select from similar specialized examinations. The general practice exams once offered have been replaced with the practice specific exams due in large measure to the increased complexities in the codes, building, mechanical, electrical, etc., and the frequent revision of those codes as well as changes in the education process.

There has been a reduction in the curriculum taught at the bachelor's level with a subsequent reduction in the credit hours required for a bachelor's degree. While slightly over ½ of all students awarded a bachelor's degree continue their education and obtain a master's degree, their post graduate course of study leads to further specialization, which in turn points them towards a career based on that specialty.

The NCEES exams are practice based exams. They are intended to test the applicant's abilities in their chosen area of practice. Engineers practicing in the power area of electrical engineering are expected to test in that area and not the Electrical and Electronics area. Similarly, engineers practicing in the area of civil structures would be expected to take the civil exam with the structural emphasis and not the structural exams. Engineers designing buildings and major bridges are expected to take the two day structural exam and not the civil exam with the structures option because this exam does not test the structural engineer adequately. The taking of an exam with a lesser emphasis on

structures is inappropriate and violates the spirit of the examination requirement in the licensing law.

Considering the availability of the examinations for specialization, and Alabama Law requiring that licensed professional engineers only practice in their area of expertise, it is only reasonable that applicants for licensure be tested accordingly. Professional licensure relies on the proverbial three legged stool; education, experience, and examination. If the applicant's education is broad based, which the baccalaureate degree has become, then the experience and the examination must be given considerable weight when a determination is made as to the engineer's chosen practice area and whether or not they are indeed practicing in an ethical manner.

When reviewing a complaint against a licensee, the Board has an obligation to review all aspects of the licensee's credentials, including examinations taken. A licensee may very well violate the spirit of the law by purposely testing in one area, yet practicing in another. The time period over which all three legs of the stool were attained would surely enter into any determination involving the licensee. Engineers educated, tested and licensed decades ago would rely on recent experience more than examination and education to justify their right to practice in a given area. The more recent licensees, especially those tested after an applicable specialized exam has been introduced, would have their chosen practice area evaluated with more weight given to their examination and their education.

Adopted by the Board  
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