

STRUCTURAL LICENSURE

issues related to the regulation
of structural engineering practice

NCEES Votes on Structural Licensure and Engineering Education

By Marc S. Barter, P.E., S.E., SECB

Marc S. Barter is the president of Barter & Associates, Inc., a structural engineering consulting firm in Mobile, Alabama. He is a past president of NCSEA and chair of the Alabama Board of Licensure for Professional Engineers and Land Surveyors. He can be reached at mbarter@barterse.com.



At its 2015 Annual Meeting in August, the National Council of Examiners for Engineering and Surveying (NCEES) voted on Motion 1 submitted by the Advisory Committee on Council Activities (ACCA) (see www.structuremag.org/downloads/NCEES_Committee_Report.pdf for the full text of the committee's charge and rationale). If passed, Motion 1 would have ultimately modified the Model Law and Model Rules to limit both the use of the structural engineer title and the practice of structural engineering. The motion stated:

Move that the Generic P.E. Licensure Plus Protected S.E. Title and Restricted S.E. Practice approach as defined under Charge 2 of the ACCA report be incorporated into the Model Law and Model Rules and that the appropriate committee or task force be charged to develop specific language for that purpose, including the Thresholds definition as described under Charge 2. Further, move that the language be presented to NCEES for approval before being charged to the UPLG Committee for final incorporation into the Model Law and Model Rules.

Unfortunately, after no debate whatsoever, the motion failed by a single vote. Debate did not take place because no one rose in opposition to the motion, which under the NCEES rules, prevented a need for a statement of support or rebuttal. Moreover, the overwhelming majority of the boards had already decided how to vote before the meeting started.

The failure of the motion was disappointing, but an understandable and even expected outcome. Just the fact such a motion was presented is a victory for proponents of structural licensure. Opposition within NCEES has been deep, persistent, and unabashed for many years. It was thus an accomplishment for the S.E. licensure movement to have a committee charged with the issue, and an even greater accomplishment for a committee composed of non-structural engineers and land surveyors to recognize that the threat to the public from unqualified practitioners is real and should be addressed by NCEES.

NCEES is composed of members of 70 separate licensing boards representing all fifty states plus other United States jurisdictions. Of the 70 boards, 56 license engineers and 14 license surveyors. 31 boards voted in favor of Motion 1 and 32 opposed it; six boards abstained and one was absent. Three boards from states that currently recognize structural engineering to some degree opposed the motion. Of the 14 surveyor boards, eight opposed the proposal, one abstained, and five voted in the affirmative. Removing the

surveying boards from the voting, the measure would have passed, 26 to 24.

The primary opposition to structural licensure is from civil engineers and NSPE members. Despite the best efforts of ASCE to be supportive of the SEI position, many of ASCE's members are opposed to any recognition of structural engineers or any restriction on the practice of structural engineering. By and large, the vote of each surveying board mirrored the vote of the engineering board from the same state. Where it did not, the engineering board abstained. The takeaway is to convince the engineering licensing boards of the need for structural licensing, and the surveying boards will likely follow their lead the next time such a measure is proposed.

Of particular interest, considering the surveying board votes, is the composition of the ACCA. Six of the eight members are licensed as surveyors, as is the president of NCEES. Based on this demographic, the lack of support from the surveying boards is not systemic of surveyors, but rather more of a "me too" approach.

Based on comments from the incoming NCEES president, Michael J. Conzett, in his acceptance speech following his induction as president, the matter is not dead and will be raised again in the future. This is good news in that board memberships are constantly changing, with older engineers leaving and (marginally) younger professionals replacing them. With this transition, this proposal (or a similar one) has a better chance for passage in the future.

ACCA Motion 8 is also of interest to the structural engineering community, because it dealt with engineering education (see www.structuremag.org/downloads/NCEES_Committee_Report.pdf for the full text of the committee's charge and rationale). This motion was pulled from the NCEES meeting's consent agenda and voted on separately. The motion is as follows:

Move that Position Statement 35 be adopted as follows:

PS 35 Future Education Requirements for Engineering Licensure

One of the goals of NCEES is to advance licensure standards for all professional engineers. Those standards describe the technical and professional competency needed to safeguard the health, safety, and welfare of the public. The Council recognizes that future demands for increasing technical and professional skills and the reduction that has occurred in the formal education requirements needed to obtain a bachelor's degree in engineering from a program accredited by the Engineering Accreditation Commission of ABET (EAC/ABET) have resulted in the need for additional education beyond the bachelor's degree for those entering the

engineering profession. NCEES has identified several future pathways by which a candidate for licensure as a professional engineer might obtain the body of knowledge needed to meet these educational requirements, including the following:

A. A bachelor's degree in engineering from a program accredited by EAC/ABET and a master's or earned doctoral degree in engineering in the same technical area from an institution that offers EAC/ABET accredited programs, or the equivalent.

B. A bachelor's degree and a master's degree in engineering from a program accredited by EAC/ABET.

C. A bachelor's degree from a program accredited by EAC/ABET that has a minimum of 150 semester credit hours, of which at least 115 semester credit hours are in mathematics, science, or engineering combined and at least 75 of these semester credit hours are in engineering.

D. A bachelor's degree in engineering from a program accredited by EAC/ABET and at least 30 additional semester credit hours of upper-level undergraduate or graduate-level coursework in engineering on topics relevant to the practice of engineering (e.g., engineering-related science, mathematics, or professional practice topics such as business, communications, contract law, management, ethics, public policy, and quality control) from approved course providers (e.g., institutions that have EAC/ABET-accredited programs, or institutions or organizations accredited by an NCEES-approved accrediting body).

NCEES will continue to explore alternative educational pathways for candidates for licensure as professional engineers to develop the body of knowledge needed for entry into the profession. These alternatives will be developed through collaboration with technical engineering societies and other stakeholders engaged with the engineering profession.

Position Statement 35 was proposed after last year's vote by NCEES membership removing Model Law language requiring a master's degree for engineering licensure starting in 2020. Removal of the Model Law language was in response to the fact that very few (if any) boards were proposing legislative changes accordingly.

Position Statement 35 passed, but only after an amendment was defeated that removed language regarding ABET that

also watered down the proposition. Although less potent than the original Model Law provision, the position statement is an affirmation of what NCSEA's Basic Education Committee has proposed for the last dozen years or more: the curriculum for a bachelor's degree in civil engineering does not prepare the civil engineering graduate to practice structural engineering; more education is needed.

On balance, the NCEES meeting was good for issues that concern the structural engineering profession. ACCA Motion 1 failed, but in failing it provided proponents of structural licensure a roadmap for the future, as did the passing of the education position statement. NCSEA's Structural Licensure Committee learned which state boards are receptive to structural engineering licensure, and the NCSEA Basic Education committee received validation of their work for the last decade or more.

Structural engineers view their license as critical to their livelihoods. Many of the other disciplines view it more as a merit badge. They never use their seal, their jobs are with industry or government, and they do not perform design or analysis whereby a professional credential is required. Additionally, many accepted jobs after college that required

a technical degree, but relied on extensive on-the-job training. Increased education requirements are not supported by these individuals to the extent that civil engineers – especially structural, geotechnical, and environmental engineers – support them.

The demographics of the attendees at NCEES meetings also play into the decision-making process. A significant number of NCEES members graduated when a BS degree required 145 semester hours or more of coursework, versus the current trend toward only 120 semester hours. They do not support, nor will they ever support, any change perceived to diminish the significance of the P.E. license. They also view education through a historically unadjusted viewport. Change does not come easy and is seldom embraced.

To them, and everyone concerned with structural licensing, both in favor and opposed, I say wait; time is on the side of the public's best interest. After all, engineering licensure is about protection of the public, and its future can only be assured if it holds true to that purpose. Increased engineering education and structural licensure are changes that will demonstrate adherence to that purpose; the status quo does not. ■

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