



License Engineers and Certify Disciplines

By Timothy A. Lynch, P.E., M. ASCE-SEI

Stating that licensure of structural engineers is necessary to protect the health, safety and welfare of the public is nothing short of professional arrogance. Advocates of the SE license initiative have been attempting to redefine competence; one might suspect the legal community is following suit. Competence is a basic, minimum level of achievement that is required, demonstrated and accepted as legal authority to practice the *profession of engineering*. One does not *increase* competence and one does not lose competence without fundamental personal changes, such as physical or mental health conditions, or unethical behavior.

Fundamentally, an assertion that separate licensure is required to ensure competence is equivalent to a belief that significant structural engineering practitioners are incompetent, or unethical. The result is a self-created dilemma: a claim that our own ethics are insufficient to protect the public from ourselves.

Simply requiring that Engineers pass another exam – be it multiple choice; essay; eight hours; or, sixteen – will not provide the public with adequate protection from failure.

The title “structural engineer” is advertising. It denotes the discipline of engineering in which an individual practices. The motivation of advocates for separate licensure, as stated by Jon Schmidt in the September 2011 *InFocus* column, is a “conviction that such a step is *necessary* for” public safety. This is an overstatement that is detrimental to our profession. We are ethically bound to “perform services only in areas of [our] competence.”

SE licensure is NOT necessary. It *may* be prudent as a certification; it *may* be a beneficial distinction to potential clients and licensees; but, it is *not necessary*. Certifications, such as that provided by the Structural Engineering Certification Board (SECB), or advanced degrees are equal and arguably superior assurance of professional development and expertise, more so than passing a single exam and issuance of a license.

Claiming a governmental restriction on the practice will effectively increase public safety is naïve and potentially unethical in itself. To suggest that our discipline is more important than those who design processes for treatment of

drinking water or the safety measures incorporated in our highways or any of the other health and welfare aspects of our lives is conceited.

A separate, or subsequent, license is an economic restriction – generally as argued by John Mercer in his editorial in the July 2011 issue of *STRUCTURE*. Fundamentally, an initial shortage of structural engineers would tend to increase the market price. Unfortunately, the long run equilibrium would reduce the price as additional engineers seek the benefit. One could argue that supply would not be restricted if a “grandfathering” clause were included; however, one should carefully consider such a clause if one supports the “necessity” claim.

It is unwise for our profession to promote reliance upon regulation as a judge of our competency. That is *our* job. The licensure exam is a *final administrative step* in the exhibition of the mastery of basic skills required to practice. To qualify for the exam, our individual competency must be judged by a registered design professional who accepts the intern engineer’s experience and abilities as representative, relevant and sufficient evidence of competence.

Ongoing evaluation must be performed by ourselves, our peers and, ultimately, the legal system. Unfortunately, the SE exam will not prevent incompetence, mistakes or poor judgment.

Recall statistics – we cannot design to protect against all possible events and we cannot prevent bad engineers. If practicing engineers have evidence demonstrating incompetence, they are ethically and legally bound to report that fact or, perhaps at least, to have a conversation with, enlighten and educate the subject individual.

The implication of the SE initiative is that we are less capable than governmental authorities to judge individuals and enforce the requirements of professional practice. Lawyers, doctors and architects have correctly decided to retain their own control over those decisions. The form of the licensure examination is not why the “analogy breaks down” as Mr. Schmidt contends. It holds true when one considers the *profession of engineering* instead of the specialty of

structures. In New York, in 1996 when I sat for the PE exam, there was no distinction of discipline. The licensed PE is limited by statute to practice only within the area of his or her competence. Certification beyond licensure, preferably by engineers instead of bureaucrats, makes more sense as a means for demonstrating competence in a discipline.

Once licensed, competency should rarely be questioned. Sufficiency of experience and expertise along with continued ethical practice is the question. Further legislation to restrict the practice of engineering will simply put additional incendiary devices in the control of plaintiffs in courtrooms. There are currently more than enough laws on the books available to convict and punish those found responsible for failure, and those who are truly incompetent.

We should be championing motivation for ethical practice. We should be arguing for economic incentives to support our discipline.

Allowing market factors to regulate activity has been shown to be more effective than governmental controls. The liability alone – of practicing the discipline of structural engineering – should be sufficient to restrict the supply of practitioners. We need to educate our fellow professionals, corporate underwriters and public consumers with regard to the increased education and experience that is necessary for proper practice of this complex discipline.

To limit engineering “competence” to only those tasks for which an engineer has demonstrated prior experience is contrary to continued development. If one can only do what one has done before, one will never accomplish anything new. As engineers, we have demonstrated the ability to analyze problems, to research requirements and constraints and to develop solutions.

The successful completion of the SE examination demonstrates a superior level of discipline-specific technical expertise, but it is not sufficient or necessary for the protection of the public. Judgment as to the sufficiency of an engineer’s ability to design structures should not be made by government agencies. As engineers, we need to accept that responsibility as our own. ■

Timothy A. Lynch, P.E., M. ASCE-SEI (tim@talynch.com), is a consultant in the Hudson Valley region of New York.

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