

Texas PE Exam Decoupling

August, 2015

Concept

The system of licensing and regulation of Professional Engineers is intended to protect the health, safety, and welfare of the public by ensuring the technical competency and professional and ethical behavior of practitioners. The public is better protected if more practicing engineers are licensed under this framework. Therefore, it is critical to consider ways to encourage and facilitate engineering students and new engineers to pursue licensure without reducing the requirements for licensure.

Many engineering graduates start on the path toward licensure but do not complete the process. Recent NCEES data for graduates of six of the largest engineering programs in the US (2011 – 2013) indicates that only 45% of civil engineering graduates actually take the PE exam for licensure. That number decreases sharply to only 15% for Electrical and Mechanical graduates and is even less for other disciplines. This may be due to the combination of waiting to take the PE exam as the “final hurdle” of the licensing process and other factors such as industrial exemptions. Promoting licensure of qualified engineers at early stages of an engineering career will keep a larger number engaged in the process.

At its May Strategic Planning meeting, the Texas Board of Professional Engineers identified increasing the number of licensed engineers across industry sectors and demographic categories (gender, age, ethnicity, etc.) as a primary goal for the next year.

The PE exam is one of the essential qualifying credentials for licensure. While experience records and professional references support an applicant’s professional practice, ethics and character, the PE exam measures technical competence in a given field. PE exams are discipline-specific and are designed to assess a minimum threshold of practical engineering knowledge across all aspects of a particular field of engineering for an engineer that has a solid educational background and has worked in the field for some period of time. Even though exam candidates have been working in the field and gaining practical experience, preparation for the exam requires, in most cases, dedicated study, exam materials, and review courses. The exam format is a combination of academic topics and practical application. NCEES policies expect and allow examinees to use technical reference materials such as text books and code manuals during the exam itself. Even in the more traditionally licensed engineering fields (civil, electrical, mechanical), engineering experience generally becomes more focused over time and is not as broad as the initial scope of the engineering degree programs.

Due to the time and effort to refresh and prepare for the licensure exam, the examination process itself can sometimes be a hurdle for those engineers that are beginning their careers and considering pursuing licensure. Allowing the process to be more flexible so that potential licensees can take the PE exam at the optimum time (when they are ready) instead of only after a set period of time (4 years minimum), should keep more engineering graduates and Engineers-In-Training engaged in the process and result in more qualified licensed engineers.

It is critical to point out that this change would not result in a reduction of the requirements for licensure. All three components for licensure (Education, Experience and Exams) must be completed prior to a license being granted.

“It may provide a measure of convenience for potential licensees whose work experience might be narrowly focused and who might be more apt to take the exam earlier. This could encourage the licensure of more engineers. For a young engineer who passes the exam early, the likelihood that he or she will become a professional engineer is significantly increased.” – NSPE letter to NCEES May, 2012

Requested Input

At its May 2015 meeting, the Licensing Committee directed staff to contact interested stakeholders in the engineering community of Texas to get feedback on this potential change. Although some mixed comments were received, the majority of opinion was favorable.

ACEC – Texas (Steve Stagner, President) -

“This issue was discussed at our board meeting last week and the group did not have any problems with the concept.”

TSPE (Nancy Blackwell, P.E., President) -

“The Texas Society of Professional Engineers is supportive of the proposed change that would allow for the ability to take the P&P exam prior to completing the requirements for the SER.”

ASCE, Texas Section (Crespin Guzman, P.E., Executive Director) -

“Based on the responses received and further discussion at a recent Executive Committee meeting, the majority of the Texas Section ASCE leadership are opposed to the decoupling proposal on the timing and taking of the PE exam as presented. However, this was not an overwhelming display of negative sentiment, those opposed just happened to outnumber those in favor of the change.”

Other comments from individuals –

“I personally am against it - I believe the one of the purposes of the exam at the end of the time requirement is to illustrate your ability to retain the necessary engineering principles learned in school (and gain additional knowledge outside of school) through your time practicing professionally.”

“I did not keep up with when the “coupling” started, but I took the FE exam in the spring, 1974 and the PE exam in 1974 or 1975. I did not apply for licensure for several years, approximately 10-12, because it was not a requirement for my work. If I had to wait for 4 years to apply for the test, I might not ever have applied for licensure.”

"In reference to your June 5, 2015, I believe the health, safety, and welfare of the public are not served by lowering the PE license rigor by allowing early taking of the PE Exam. ... I believe that allowing early taking of the PE Exam will have no measurable impact on the number of licensed engineers. ... Passing the PE Exam right after college is easier because the technical material is still fresh in the candidates' minds. Taking the Exam several years after college is harder and is therefore a discouragement to pursuing a PE license. But the PE Exam should still be taken after 4 years of experience because the Exam documents that the candidate has retained his/her technical knowledge. But more importantly, passing the PE Exam after 4 years of experience shows that the candidate has maintained the skills and initiative to study/review complex technical material years after college. This aspect of "study" years after college is what I believe most in the profession have over looked."

"... if the purpose of the exam is to determine what the candidate has learned academically, then decoupling is a good idea because the information is still fresh in the mind of the applicant."

"Yes I agree with and believe decoupling the exam is a good thing but if the intent of the law is to protect the public by licensing competent engineers, then eliminating the industrial exemption and/or enforcing our existing laws would go a long way to motivating licensure."

"I recall taking the "Principles and Practice" exam while in graduate school. This was a benefit to me while I was still in an academic environment and had recent experience in all applicable analytical methods. If one goes into the workforce and waits a few more years, they may not be regularly using all of the analytical skills and need to spend considerably more time "brushing-up"."

"I personally took the FE exam the fall of 1974 and the P&P exam (as it was known then) in the spring of 1975, both during my senior year of civil engineering study at Texas A&M University. I passed both exams on my first attempt and was thankful to be allowed to take the tests while all the subject matter was still fresh on my mind. ... Through 40-years of practicing engineering I have since observed many young engineers preparing to take the PE exam after gaining their 4 – 5 years of experience, as is currently required. Many of these individuals did so at great personal sacrifice in both cost and time. However, I never felt anything was gained by making them wait to test. In my opinion, if the applicant feels prepared upon college graduation or anytime during the period of gaining their experience, they should be allowed to test. The proposed process changes (3 exam attempts within 4-years, then fulfilling the experience requirements) seem a very reasonable approach to me."

"I am not in favor of the decision to change the process... Ultimately, I believe that the PE license serves as a sign of an engineer's commitment to stand take responsibility for his or her design. Increasing the number of engineers who get their license by any method other than the engineers simply recognizing the value and pursuing licensure on their own would eventually water down that image. So, I think that increasing participation in the program should come not from changing the process but from changing the perception of the value derived from getting the license."

NCEES and Other States

From as early as 2000, NCEES member Boards have been discussing decoupling experience and exams. Changes were made in 2001 and 2003 that resulted in Model Rule changes, but experience was still required prior to the PE exam until 2014. At the August 2014 annual meeting, NCEES approved a change to its Model Law to de-couple experience and timing of the PE exam.

Several other state Boards have or plan to implement the change to allowing the PE exam to be taken prior to the completion of the experience.

- Currently done in Nevada, New Mexico, Kentucky, Louisiana, Illinois, Nebraska, South Carolina, and Wyoming
- California (allows PE exam and licensure at 2 years now)
- Oklahoma, Oregon and North Carolina (pending legislative changes)
- Tennessee and Maine considering

Addressing Concerns

11 state Boards have considered decoupling and decided not to implement at this time. Some concerns were expressed in a letter from the South Dakota Board to NCEES dated April 2014. The following is a combined list of concerns collected from various sources with TBPE staff comments under each.

- Does decoupling lower the standards or qualifications for licensure?
No. By allowing the PE exam to be taken earlier, the current requirements for Education, Engineering Experience and Examinations are adhered to. They are only applied in a slightly different order.
- Does allowing the exam to be taken early make it easier to get a license?
No. The issue addressed by decoupling is not to make the exam or license application process easier. It is specifically intended to address the issue of convenience. By removing the timing issue, more qualified individuals should be able to pursue licensure.
- Do we current accept “early” P&P exams taken in other states?
Yes. If an applicant for licensure in Texas has passed any of the NCEES P&P exams, we accept it regardless of when it was taken relative to the experience obtained.
- Isn’t this the way it used to be done in Texas?
Yes. Prior to the early 1990s, the P&P exam was still not required in many cases. Engineers who were willing, chose to take the PE exam and could take it “early”. Many of our current licensees took the exam before applying for licensure.
- If the PE exam can be taken and passed early, is it doing what it is supposed to do?

Yes. The exam is designed to measure minimum technical competence, not evaluate experience (this is what the written experience record and PE reference statements are for). While some feel that it should only be able to be passed by a person with four years of experience, some applicants can gain the appropriate experience and knowledge prior to four years and successfully complete the examination. Studies show that the optimum timeframe for the examination is at or after four years with a lower pass rate prior to four years, so the exam is performing as designed.

- Completing the 4 years of experience prior to the exam promotes the importance of retaining engineering knowledge beyond the degree and promotes the review of previously acquired knowledge.

Passing the PE exam requires additional study and preparation in most cases. Since the exams are broad in scope, most examinees refresh their education on subjects that they do not use regularly in practice.

- Taking the PE exam early puts more “pressure” on the experience review of an application.

The Texas application review currently places a significant emphasis on the review of experience and would not change with decoupling. Texas does not issue reciprocal or comity licenses based solely on a license issued in another jurisdiction. The experience evaluation will continue to be an essential element in determining an applicant’s qualifications for licensure.

- If the FE and PE exams can be taken so close together, is there a reason to have two exams? Is it challengeable?

The FE and PE exams are both technical exams, but do serve different purposes. The FE exam is intended to assess basic academic knowledge (math, science, basic engineering) and is targeted for a college senior or recent graduate. The PE exam, while still being technical, is intended to assess a more complex set of technical abilities. The questions are developed to assess a thorough understanding of engineering concepts in practical and complex situations. The timing of the exams shouldn’t affect the purpose and intent of each exam.

- Would an early PE exam taker be more apt to start practicing engineering without a license?

No. One of the main goals of allowing the exam to be taken early is to help emphasize Licensure and the associated ethical responsibilities. Someone eager to take the PE exam early is more likely to respect the licensing process and ethical responsibilities.

Schedule

At its May meeting, the Licensing Committee directed staff to gather stakeholder input.

Staff has put together a team to develop the procedural enhancements necessary to implement this change efficiently. The team has met 6 times to map processes and develop procedure and information system changes.

Systems and processes must be in place when rules are effective.

- Bring stakeholder comments and recommendation back to Licensing Committee and Board for approval.
- Move forward with IT development
- Bring draft rules to Licensing Committee for approval to publish rule changes in The Texas Register for comment at the November 2015 Board meetings.
- Evaluate additional comments and make necessary revisions for possible adoption by the Board at its February 2016 meetings.
- Effective date would be 20 days after adoption (March, 2016).

Related exam dates:

- PE Exam administrations set for October 2015 and April 2016, unaffected by this change
- Effective date of rules in March 2016 will be adequate lead time before October 2016 exam date
 - Application deadline July 2016
 - Exam registration deadline September 2016
 - If approved, rule changes would allow “early” takers for the October 2016 exam

Proposed Process Changes

Staff has met to develop the attached flowcharts and developed draft rule revisions that would be required to implement the changes.

The proposed modified process:

- Provides for two paths to PE exam Approval:
 - Initial EIT status; or
 - Application Approval (similar to the current process)
- Makes EIT registration a requirement for “early” exam approval to establish identity and verify education credentials and FE exam
- Allows 3 exam attempts within 4 years regardless of discipline (3 for each Structural component)
– Current process allows 4 consecutive exam opportunities with no exceptions
- Sets 8 year total for exam approval
- Not passing “early” PE exam would require waiting until full experience is obtained (4 or 8 years), application , review and approval

- Not passing PE exam after approval would require obtaining an additional year of engineering experience (not just more time), new application, review and approval

David Howell

From: Cres Guzman [REDACTED]
Sent: Friday, July 31, 2015 9:03 AM
To: David Howell
Subject: FW: Input requested re: Decoupling concept

I forgot to copy you on this transmittal.

From: Cres Guzman
Sent: Friday, July 31, 2015 8:54 AM
To: 'Lance Kinney'
Subject: Input requested re: Decoupling concept

The leadership of the Texas Section of ASCE has reviewed and commented on the TBPE white paper explaining the Decoupling concept as it pertains to licensure requirements. Based on the responses received and further discussion at a recent Executive Committee meeting, the majority of the Texas Section ASCE leadership are opposed to the decoupling proposal on the timing and taking of the PE exam as presented. However, this was not an overwhelming display of negative sentiment, those opposed just happened to outnumber those in favor of the change.

One of ASCE's three strategic initiatives is to "Raise the Bar", based on our analysis that concluded that a bachelor's plus 30 hours is required to adequately cover the body of knowledge for practicing civil engineers. The Decoupling concept was viewed by some ASCE members as a lowering of the bar. Although our membership was split between opposing or favoring the Decoupling concept, there was a total consensus and support with regards to keeping the experience requirement as noted prior to receiving the license to practice. This component was a strong item of interest when discussing the decoupling and the timing of taking the test.

Please let us know if you require any additional information from the Section and we look forward to future opportunities to provide input to TBPE on issues affecting our engineering profession.

Crespin Guzman, PE
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Share with us!



August 4, 2015

Lance Kinney, Ph.D., P.E.
Executive Director
Texas Board of Professional Engineers
1917 IH 35 South
Austin, TX 78741

RE: TBPE Issue – Decoupling the PE Exam and SER

Dear Dr. Kinney:

Thank you for requesting input from the Texas Society of Professional Engineers related to the potential action by the Texas Board of Professional Engineers on the concept of decoupling of the P&P exam and the SER requirements.

The Texas Society of Professional Engineers is supportive of the proposed change that would allow for the ability to take the P&P exam prior to completing the requirements for the SER.

We look forward to working with the TBPE to implement this change through the rule making process, if approved

Sincerely,

A handwritten signature in black ink that reads "Nancy C. Blackwell". The signature is written in a cursive style.

Nancy C. Blackwell, P.E.
2015-16 President