**U.S. Public Health Service Engineer Professional Advisory Committee**
**Professional Engineering License Fact Sheet**

The purpose of this Fact Sheet is to inform U.S. Public Health Service (PHS) Engineers of the benefits of Professional Engineer (PE) licensure, the steps and requirements for achieving a PE license, and resources that will assist them.

The preamble of the National Society of Professional Engineers Code of Ethics for Engineers best conveys the role of engineers in society:

> *Engineering is an important and learned profession. As members of this profession, engineers are expected to exhibit the highest standards of honesty and integrity. Engineering has a direct and vital impact on the quality of life for all people. Accordingly, the services provided by engineers require honesty, impartiality, fairness, and equity, and must be dedicated to the protection of the public health, safety, and welfare. Engineers must perform under a standard of professional behavior that requires adherence to the highest principles of ethical conduct.*[1]

Licensure as a Professional Engineer is the clearest public demarcation of this role. PHS Engineers are highly encouraged to earn the PE, which is required for mid-level and senior level positions. Licensed engineers, like medical professionals, are bound by both legal obligations of states overseeing licensure and the fundamental canon to "hold paramount the safety, health and welfare of the public."[2] PE licensure assures the public that individuals have mastered the critical elements of their respective professions and are capable of delivering engineering services to the public.

PHS Engineers should begin focusing on professional licensure and other certifications early in their career. The Engineer Category Promotion Benchmarks provide guidance from category leadership on the experience, achievements and credentials officers should exhibit at progressive stages of their career—including pursuing and achieving professional licensure as a measure for PHS Engineers.[3]

In addition, leadership roles (typically O-5 billets and above) with the Indian Health Service and National Park Service, where over half of the current PHS Engineers are currently assigned, require a PE license. Officers with aspirations for professional growth in these agencies are required to obtain a PE license.

## Obtaining the Professional Engineer License

In the US, engineers are licensed at the state and US territory level by individual professional licensing boards. Once PE candidates meet a combination of education, experience and exam

requirements, they may apply to a specific state's or territory's engineering board, who reviews the application and issues the PE license, if satisfied with the candidate's credentials. See References at the end of this fact sheet for a link to each state's and territory's licensure board.[4] PE candidates must typically pass two examinations and fulfill the professional experience requirements to obtain a PE. The first exam is the Fundamentals of Engineering Exam or FE exam. Normally, engineering students who attend an Accreditation Board for Engineering and Technology (ABET) accredited engineering school attempt the exam in their junior or senior year of undergraduate study. However, in certain states, the FE requirement can be waived if a specified number of years of experience has been achieved.

**Fast FE Exam Facts[5]:**

- Offered to 7 disciplines of Engineering: Chemical, Civil, Electrical and Computer, Environmental, Industrial and Systems, Mechanical and Other Disciplines
- Is a computer-based exam administered year-round at test centers approved by the National Council of Examiners for Engineering and Surveying (NCEES)
- Duration of Exam: 6 hours
- 110 multiple choice questions
- Common test topics: Mathematics (i.e., Calculus and Differential Equations), Probability and Statistics, Ethics and Professional Practice, and Engineering Economics
- In 2019, first time takers who took the exam within 12 months of graduation had about a 72% pass rate

Once candidates pass the FE exam, they are typically given the designation of Engineer in Training (EIT) or Engineer Intern (EI), depending on the state. Some states require an application and approval to earn this designation.

The next step toward licensure is to acquire work experience under the supervision of a licensed PE. Once an engineer has the required experience, they may apply to sit for the Principles and Practice of Engineering Exam, often-abbreviated PE exam. In general, to sit for the PE exam engineering candidates must demonstrate the following:

- A bachelor's degree from an ABET accredited engineering program
- Be a registered Engineer in Training or Engineer Intern (Passed the FE exam)
- Work experience under the supervision of a PE—Typically 4 years, but varies by state

**Fast PE Exam Facts[6]:**

- Offered in 16 disciplines of engineering
- Several disciplines have converted to computer-based testing (CBT) and offer testing year-round. The NCEES website provides detailed information on plans to transition each discipline's exam to CBT in the future and frequency of test offerings
- Duration of Exam: 8 hours
- 80 multiple-choice questions. Method of testing varies amongst the disciplines
- First time takers had a 66% pass rate on average across all disciplines; Repeat takers show an average pass rate of 42% (2018-2019 data)

After passing the PE exam and fulfilling any additional jurisdictional requirements, the engineering candidate can apply for licensure through a state or US territory. Since the FE and PE exams are given nationally through NCEES, the engineer will only need to pass these exams once if seeking licensure in another state. However, certain states may require candidates to take additional sections that are not tested nationally (e.g., seismic activity and surveying in California), and some states require specialty training as a prerequisite for licensure (e.g., passing an Arctic Engineering course in Alaska).

## Maintaining Professional Engineer Licensure

Requirements for maintaining PE licenses vary by state, however, engineers are typically required to complete Professional Development Hours (PDH). While several states do not currently require demonstration of continuing education, to maintain licensure in most jurisdictions, engineers must show evidence of staying current in their respective discipline by attending training, conferences and continuing education courses. Each state specifies what counts towards continuing education credit and how many hours must be earned through various sources. For example, certain states require ethics and legal training as continuous requirements, and New York and Florida specifically require that engineers fulfill their continuing education only through approved providers. In most states, licensed engineers are required to demonstrate between 8 and 15 PDHs per year, which are tracked and reported to their state licensing board on an annual or biennial basis when licensure is renewed.[7]

## Licensure Provisions Specific to Active Duty Members

Of particular note to PHS Engineers, several states offer special licensing provisions for uniformed service members. This includes acceptance of uniformed service education, training and service for the experience qualifications required of a licensure applicant. In addition, some states allow service members to apply for licensure in their state while stationed in another state, giving flexibility to officers in states with more stringent testing and perquisite requirements. Certain states also offer specific provisions for the issuing of temporary PE licenses to service members and extension of renewal deadlines while an officer is deployed. Be sure to check with your state licensing board for any uniformed service-specific licensing rules.

## Getting Licensed in Multiple States – Licensure by Comity

As a PHS Engineer evolves his or her career by taking on new assignments and changing duty locations, a PE license may need to be obtained in additional states or jurisdictions. Known as licensure by comity, each state and US territory offers a process by which an engineer originally licensed in one state can earn licensure in another state without having to re-take exams or wait for licensure board review. As comity licensure requirements vary by state, it is important to check with state licensure boards regarding their specific requirements.

To provide a standardized, expedited path to becoming licensed in multiple jurisdictions, the NCEES has developed the Council Records Program. This program allows engineers to store licensure credentials (education transcripts, experience, professional references, exam results, and licensure status) in NCEES's online database. After establishing a "Record," NCEES can transmit it electronically to multiple states. There is no cost to complete and maintain a Record with NCEES, but a fee is charged each time the Record is sent to a state licensing board.[8]

## PE Licensure Resources

The NCEES is a US nonprofit organization that oversees and administers national examination requirements for professional licensure of engineers and surveyors, regardless of the state in which licensure is applied for. The NCEES website offers a host of information on navigating the path to licensure as well as FE and PE exam preparation materials. [9] Another organization that provides resources regarding professional licensure is the National Society of Professional Engineers (NSPE). NSPE is a membership-based organization for PEs, EITs, and engineering students that provides exam preparation resources and continuing education opportunities.[10] Please see References below for links to these organizations' websites.

## References


1. https://www.nspe.org/categories/code-ethics/preamble
2. https://www.nspe.org/resources/ethics/code-ethics
3. https://dcp.psc.gov/ccmis/promotions/PROMOTIONS_category_benchmarks_m.aspx
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