

# Structural Licensing: The Current State of US Practice

## Part 2 of 2

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### Structural Engineering Practice Restriction versus Title Restriction

One must be aware of the difference in the two types of state-adopted legislation or regulation in order to understand the following state by state discussion. (US territories are also included.)

1. Under a structural engineering practice restriction, one must possess a valid structural engineering license in order to provide the state-defined structural engineering services. The scope of such a limitation can vary from certain types of structures (hazardous, high occupancy, fire suppression, etc) to any and all structures within the state that require design by a professional engineer.

2). Under a structural engineering title restriction, an engineer must pass the state-designated structural engineering exam in order to be titled as having an SE license, but this designation is not required to design any given type of structure; anyone with a PE license may do so, usually those who have passed the civil PE exam.

Both types of licensees may place "SE" after their name for practice in that jurisdiction. Only seven states currently have structural engineering practice restrictions (two full and the others partial), and only three states have structural engineering title restrictions while three states and two territories have SE discipline or branch recognition.

## Practice Restrictions

The most straightforward requirements for structural engineers are in states that have adopted a full SE practice restriction. To design *any* type of structure that requires design by a professional engineer, the person must be licensed as a structural engineer by either having passed the previous Western States Exam, the current NCEES SE I and II exams, and/or the SE II in conjunction with the SE III exam provided in Oregon, Washington, and California. (Hawaii accepts all options. Illinois will only accept the first two options. Therefore, an SE currently licensed in Oregon, Washington or California who did not attain their license through the original Western States exam, must still take the 8-hour SE I exam to become licensed in Illinois.)

A few other states have adopted partial practice SE restrictions. Those who hold a civil PE license may design any structure *except* those specific types of structures that are legally required to be designed by a licensed SE. In some cases, the description of the type of structure is somewhat open to interpretation. No two states with a partial practice restriction have adopted that same language for the description of structures required to be designed by a structural engineer.

## Illinois and Hawaii

Hawaii and Illinois have adopted a full SE practice act as described above. Illinois even has a completely separate licensing board for structural engineers. These states use the NCEES SE I and II exams for the basis of licensure.

## California and Nevada

Both of these states have had partial SE practice restrictions in place for many years as either a licensing restriction (California) or a licensing rule (Nevada). In California, an engineer must be licensed as a structural engineer (SE) in order to be in responsible charge of the design of schools and hospitals. California is currently proposing legislation to include structures similar to those noted below for the other western states with partial SE practice restrictions. In Nevada, design by an SE is required for structures requiring special expertise such as radio towers and buildings more than 3 stories or 45 feet in height.

## Oregon, Washington, and Utah

Partial practice acts have been legislated in these states over the last decade, starting in the late 1990s with Oregon. In Oregon, an SE license is required to design the primary framing and lateral-load-resisting systems for

designated hazardous facilities and special occupancy structures, any essential facilities over 4,000 square feet in plan area or 20 feet in height, structures with irregular features, and occupied buildings more than 4 stories or 45 feet in height.

Washington similarly requires an SE license for design of hazardous facilities, essential facilities over 5,000 square feet in plan area or 20 feet in height, as well as standby power equipment, air traffic control towers, critical national defense structures, structures exceeding 100 feet in height, occupied buildings of more than 4 stories, bridges with total span over 200 feet and piers with surface area over 10,000 square feet, and structures where over 300 people congregate.

Utah only recently changed its title restriction to a practice restriction. In 2008, it required an SE license for the design of structures similar to those identified in Oregon and Washington and added even more definition and refinement to the specific size, height, use, occupancy, and type of structures in the list.

## **Title Restrictions**

In the following states, the NCEES I and II SE exam is administered and the title of structural engineer (SE) may be legally used by the practitioner, in addition to or instead of professional engineer (PE), after his/her name to designate a licensed professional who has passed a state-approved 16-hour SE exam. However, there is no restriction for design of any type of structures associated with the title.

### **Idaho and Nebraska**

Idaho and Nebraska recognize the SE designation. However, Idaho requires that the applicant already hold an Idaho PE license prior to applying to take the current SE I and II exams. Both of these states will consider reciprocity from structural engineers in other states from applicants who have passed 16 hours of SE exams when they obtained their original SE license, either the SE I and II or SE II and III exam combination or the older Western States Exam. Based on the exams taken and the amount of experience in structural engineering that an applicant can demonstrate, the Idaho PE license may still be required prior to comity being granted for the SE license.

### **Arizona, Vermont, Louisiana, Guam and North Mariana Islands**

These states and territories specifically license engineers by branch or discipline and recognize structural engineers in this way. However this is not considered separate licensure because there is no restriction in the states' statutes or regulations that explicitly distinguishes structural engineers from other professional engineers.

### **New Mexico**

No SE exam is administered by the state. However, the state allows an "R" on the states licensed professional engineer roster indicating structural engineering is the PE area of practice as a specialty sub-discipline. The Board Rules explicitly recognize structural engineering, unlike any of the other disciplines. Ruling for a designation as a structural engineer for either a state license and for comity is based on alternate options for combinations of education, experience and testing.

### **Other Structural Exam Use**

Additionally, 39 states currently offer the SE I and SE II but do not have an in-state SE practice or title restriction. However, engineers may take the exams without traveling to another state where the exam is required for licensure.

Most states offer the SE I exam as an option to the 8-hour PE exam. The applicant who passes this test then holds a generic PE license.

## **Examples By the Numbers**

Examples of the hours of testing currently required to acquire an SE license, including all prerequisite exams, are listed below. Currently, all exams are written and graded by NCEES except as noted above for Oregon,

Washington, and California. Depending on which state was the original state of SE registration, exam hours for reciprocity vary greatly. Note that for the mature structural engineers, all states accept the original Western States 16-hour SE exam as a basis of reciprocity without other testing for the SE portion of the requirement. While the new 2011 16 hour SE exam will greatly improve the equality of testing as a basis for reciprocity, California, Oregon, Washington, Nevada and Idaho will still require a civil PE be obtained prior to an SE license, and additionally California will also require the NCEES PE exam to be supplemented by 4 hours of survey and seismic testing.

## Practice Restrictions

*California:* 8 hours CE or SE I PE + 4 hours survey/seismic (CA SS) CE +16 hours SE II and III = **28 hours**

*Oregon/Washington:* 8 hours CE or SE I PE + 16 hour SE II and III = **24 hours**

(for CA CE/SE reciprocity adding survey/seismic to receive civil PE = **28 hours**)

*Nevada:* 8 hours CE PE + 16 hours SE I and II = **24 hours**

(for WA/OR reciprocity add SE III additional 8 hours of exams (+8 = **32 hours**)

(for CA reciprocity add SE III and CA SS exams (+8+4= **36 hours**)

*Illinois/Hawaii:* 16 hour SE I + II = **16 hours**

(for WA/OR reciprocity add SE III and Civil PE exams (+8+8 = **32 hours**)

(for CA reciprocity add SE III and CA CE with SS exams (+8+8+4= **36 hours**)

## Title Restrictions

*Idaho:* 8 hours CE PE + 16 hours SE I and II = **24 hours**

(Reciprocity for CA/OR/WA as noted above for Illinois and Hawaii for **36/32 hours**)

*Remaining States and Territories with a Title Restriction:* 16 hours SE I and II = **16 hours** (Reciprocity for CA/OR/WA as noted above for Illinois and Hawaii for **36/32 hours**)

## Other Restrictions

New Mexico may require certain educational backgrounds in addition to testing requirements in order to receive comity.

## Path Forward

From the information provided above, it is clear that structural engineering licensing requirements are muddled! No more than any two states currently come close in the combination of exam requirements and practice restrictions. Reciprocity is an adventure in frustration while dealing with the requirements and paperwork. Clearly, there is a need for greater uniformity and consistency in what a structural engineer may design in any given location. As each state establishes its own requirements independently, each new practice restriction varies the language and requirements, usually due to political compromise, from what was used in the states that had previously put practice restrictions in place.

In 2004, NCEES published specific qualifications for a Model Law Structural Engineer, which can be found at [NCEES.org](http://NCEES.org). This document is intended to provide typical requirements for education, experience, and examination that could be adopted by a state licensing board to establish a structural engineering practice or title restriction in that state.

[NCSEA Licensing Committee website](#) has provided guidelines within a white paper in an attempt to lay common ground. Through the member organizations, the Licensing Committee seeks to influence states, in the interest of public safety, to adopt consistent licensing laws, especially concerning separate licensure of structural engineers. In the early years of this new century, NCSEA partnered with SEI to hold several workshops to gather information on how interested engineers can mobilize and be successful in obtaining Practice Act legislation within their states. [A report on these workshops has been published and is available online](#)