



Taking Action: 2015

*43 Stories That Show
NSPE, State Societies, and Members
Defining, Promoting, and Protecting
The PE License*

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New York Governor Signs Bill Licensing Geologists

The practice of geology in New York is now a licensed profession, after Governor Andrew Cuomo's signing of legislation in November.

The New York State Society of Professional Engineers backed the legislation (A. 4753/S. 3810), which ensures that geologists can be licensed in the state without interfering with the practice of licensed engineers. The new law defines the profession of geology and establishes education, examination, and experience requirements for licensure. The New York State Board for Engineering and Land Surveying will expand to include oversight of the licensed practice of geologists. The board will have at least two members representing the geology profession.

The legislation was introduced because providing scientific expert opinion regarding geological conditions to state or local government agencies and the public can have significant impact on the state's environmental quality and on the safety, property, and well-being of citizens. Geologists regularly conduct investigations and provide geologic services related to the development and protection of groundwater resources and the subsurface disposal of hazardous wastes, which has the potential for contamination to migrate. According to the legislation, 24 states require the licensing of geologists. The law will become effective in two years.

NYSSPE supported the licensure of geologists as long as it would not erode the practice of professional engineers. Geologists will be able to identify and quantify the constitute parts of the strata comprising the earth's crust and mantle, under the new law; however, geologists cannot practice professional engineering, which includes design work. Licensed engineers who are also proficient in geology are permitted to perform activities reserved for licensed geologists.

The law also permits licensed geologists to serve as principals in design firms along with professional engineers, architects, landscape architects, and land surveyors. Currently, a geologist is limited to holding a minority interest in a design professional service corporation, not exceeding 24.99% of the firm shares, according to NYSSPE.

PE Magazine, March 2015

Reaching Out for Engineering

By Matthew McLaughlin

To reach the next generation, engineers try sharing more than just the profession

Seeing a young girl's face light up after she had been called to the stage is something that has stuck with Lance Weatherly, P.E.

"She had other siblings in the audience, and you could tell they wanted to go up on stage as well," he says. "Then when she got off the stage, she went and ran back to her parents and was all excited and talking to them about how fun it was."

What makes Weatherly's experience so important is it didn't take place at a magic show or a Taylor Swift concert but an engineering event held by the South Dakota Engineering Society at the Kirby Science and Discovery Center. The girl was called on stage to participate in an activity about surveying.

"We set up some surveying equipment and went through a very simple surveying procedure," Weatherly says. "She was just tickled that we gave her a hard hat to put on, gave her a safety vest to put on, and went through this surveying activity with her."

The girl's experience, however, is one not many engineers had growing up. Nor is it one many kids have even today, which is probably why engineers like Weatherly, who weren't really exposed to engineering before college, are making an effort to change that.

In addition to the statistics everyone knows by heart at this point—the embarrassingly low number of women engineers and the even lower number of minority engineers—PE magazine's recent interest group surveys found a huge chunk of employers will be experiencing engineering shortages in the next five years due to retirements, if they're not already. Forty-five percent of respondents in the Professional Engineers in Industry survey indicated their employer is or will experience engineer shortages due to retirements in the next five years, and in the Professional Engineers in Government survey, the number was 50%.

For many engineers and even nonengineers, the statistics are a clear call to action. The next generation needs their attention.

Continued at

<http://www.nspe.org/resources/pe-magazine/march-2015/reaching-out-engineering>.

Society Supports Solutions to Grand Challenges

NSPE has signed on to a joint letter developed by the American Association of Engineering Societies on educating engineers to address challenges of the future.

In the letter, the signatory engineering societies commit to support US colleges and universities “as they educate a new generation of engineers equipped to meet societal challenges” identified through national initiatives such as the National Academy of Engineering’s Grand Challenges for Engineering.

The engineering societies’ commitment follows a May 2014 letter to President Obama from 65 colleges and universities that pledged to graduate at least 20 students per year prepared to address the challenges. The schools agreed to establish programs that integrate 1) a creative learning experience connected to the Grand Challenges, 2) authentic experiential learning that includes interdisciplinary experience, 3) entrepreneurship and innovation experience, 4) global and cross-cultural perspectives, and 5) development of social consciousness through service learning.

The AAES letter commits the organization signatories to “support and advance this revolutionary movement in higher education” and contains suggestions for activities, such as encouraging members to serve as mentors for students’ experiential learning activities.

See the full list of Grand Challenges for Engineering at www.engineeringchallenges.org.

Florida Society Backs ‘Qualifications First’ in Public-Private Partnerships

The Florida Engineering Society is pushing for the inclusion of qualifications-based selection in legislation that seeks to change the proposal process for public-private partnership projects.

If it becomes law, the bill (H.B. 63) would create a Division of Public-Private Partnerships within the Department of Economic Opportunity and revise provisions for unsolicited proposals as well as add restrictions and requirements for financing agreements. The private partner’s plan for a qualifying project must result in the timely acquisition, design, construction, improvement, renovation, expansion, equipping, maintenance, or operation of the project.

The Florida Society is advocating for an amendment to the bill to require public agencies to apply the Consultant’s Competitive Negotiation Act when they solicit proposals. The act requires state government agencies, municipalities or subdivisions, school boards and schools districts to select a consulting firm based on qualifications rather than on a lowest bid basis. The law does allow price considerations for awarding a project to a firm, but only after the public agency has ranked proposals based on which firm is the most qualified to perform the work. The CCNA’s procedures and documentation guidelines are designed to lessen improprieties and ensure an ethical process.

The Florida Society is also supporting legislation (S.B. 224) that changes how a contractor must comply with state public records laws when under a contract with a public agency. The bill also specifies circumstances when a court can assess and award reasonable costs of enforcement against a public agency or contractor. FES believes that the changes outlined in the bill will mitigate engineering firms' exposure to litigation from deceitful requests for documents related to public agency clients.

NSPE on Qualifications-Based Selection

NSPE supports the procurement of design professional services on the basis of qualifications and strongly supports the Brooks A/E Act of 1972, which requires federal agencies to use qualifications-based selection procedures when obtaining design professional services (Professional Policy No. 131 on Procurement of Engineering Services).

The Society also supports the adoption of "mini-Brooks" laws at the state and local level. Forty-seven states have implemented QBS laws and numerous localities have also adopted laws modeled after the federal statute. They require the use of QBS procedures when procuring design services.

Michigan Society Backs Transportation Funding Package

Michigan voters will decide on May 5 whether to approve a legislative package that includes a proposal to raise an estimated \$1.3 billion annually for transportation through a new motor fuels tax.

On January 12, Governor Rick Snyder signed the 10-bill package, passed by the Michigan Legislature last year, which will also raise revenues for schools and local governments and provide tax relief to working class families.

The Michigan Society of Professional Engineers is urging voters to support the proposal because it will provide a long-term solution to the state's transportation system needs in addition to improving the system's quality and safety. The state has not updated overall investment in roads since the gas tax was implemented in 1997, according to the governor's office. The state chapters of the American Council for Engineering Companies and the American Society of Civil Engineers also support the proposal.

If approved by voters, the proposal will repeal the 6% gas sales tax and replace it with a wholesale-level motor fuels tax that is dedicated to transportation funding. This will equalize the tax rates for diesel and gasoline. The current gas sales tax is reserved by the state's constitution to support schools and local governments. The proposal dedicates the fuels taxes to funding transportation projects.

To provide more revenue for schools and local governments, the proposal will increase the state sales tax from 6% to 7%. Additionally, a registration depreciation tax for current vehicles will be frozen and eliminated for new vehicles while the registration rate will increase for trucks exceeding 26,000 pounds.

The revenues raised by the tax increases will provide an estimated \$1.2 billion for road and bridge projects, \$112 million for transit and rail projects, \$300 million for schools, \$94 million for local governments, and \$260 million in tax relief for lower-income residents through an earned income tax credit. More than 60% of the funding will be directed toward local road and bridge needs.

One piece of the proposal states that at least 20% of all maintenance contracts involving the Michigan Department of Transportation must provide payment based on performance outputs or outcomes. Detroit and the state's five largest counties will be included in this system.

State Societies Build Political Capital

By Danielle Boykin

All across this nation, various constituent groups and organizations head to state capitals to advocate for their cause and engage in the political process. They send e-mails, make phone calls, and participate in activities that will help them to inform and influence elected officials. Infrastructure spending, licensure laws and regulations, industrial exemptions, and engineering education are just a few of the issues that are being discussed and voted on during legislative sessions. Professional engineers, with the backing of their state societies and NSPE, are a key part of this engagement.

For more than 40 years, the Florida Engineering Society has held a legislative day event in Tallahassee. The event continues to grow and has become an essential component to the society's legislative and government relations program. "We are most proud of the continued strong attendance by our student chapters and the members of our leadership institute," says Peter Moore, P.E., chair of the society's Commission on Legislative and Government Relations. "These students and up and coming leaders get exposed to the importance of influencing the legislative process with good sound arguments. They are experts that legislators need to make critical decisions."

Outside of the annual legislative program, FES maintains a political action committee and a leadership council to allow individual members to participate financially in the process. "We also encourage our members to continue relationships with legislators back home in their districts and for the society as a whole to stay consistent with our approach and methodology," says Moore.

For nearly 25 years, Kansas has been in a uniquely good position with its transportation system. The Kansas Society of Professional Engineers is working to keep it that way. "Our state highway system has ranked in the top five of best systems in the nation for several consecutive years," says Ron Gaches, KSPE executive director. "Most of us that are involved in infrastructure are proud of that."

Gaches attributes this quality to the state's comprehensive transportation plan, Transportation Works for Kansas (TWORKS), which has provided a dedicated revenue stream for the Kansas Department of Transportation programs. The state is currently in the middle of its third consecutive 10-year plan. However, with years of budget deficits and a projected \$600 million deficit for the next fiscal year, the TWORKS program is being eyed as a revenue source for the general fund by both the legislature and the governor's office. "We have had legislators say, 'Why do we have to be ranked as the top five transportation state? That's expensive,'" he says. "'Why don't we spend less and be in the top 10 or top 20 for transportation systems?'"

Gaches is focused on maintaining a solid working relationship with the governor's office, based on the premise that both KSPE and the governor want a transportation system that saves lives and promotes jobs. "A working relationship with the administration will allow us to be on the inside of the room at the end of the session, when they are making the hard choices on how to

balance the budget,” he explains. “If we are overtly critical we would likely end up on the outside, frustrated, and without any way to influence the outcome.”

Continued at

<http://www.nspe.org/resources/pe-magazine/april-2015/state-societies-build-political-capital>.

NSPE Questions Virginia Court’s Decision on Liability

In an effort to prevent professional engineers from being placed at serious legal risk, [NSPE has filed a “friend of the court” brief](#) before the Virginia Supreme Court in support of an appeal of a lower court decision that, if affirmed, would require a professional engineer to independently test and verify the accuracy of a product manufacturer’s representation to satisfy the professional standard of care.

The case arose in connection with the installation and collapse of a rain tank storm water management system in 2011. NSPE’s brief argues that the trial court improperly shifted the risk of liability for product defects from those who manufacture and sell products to those who deploy them in engineering designs. Professional engineers face a high but legitimate burden to ensure that the products they specify in their plans are appropriate for use, but the lower court ruling would, in effect, require the engineer to independently test and verify all materials rather than rely on the specifications warranted by the manufacturer. This is an unrealistic and inappropriate shifting of the burden and liability from the manufacturer to the engineer who reasonably relied upon the manufacturer’s representations. The brief notes that this risk allocation threatens to increase the cost of professional engineering services and discourages the use of newer innovative products and designs.

The brief also disputes other issues in the appeal. For example, the trial court ruled that the statute of limitations for design defect claims against engineers is paused when there is a continuing relationship between the PE and the owner. NSPE contends that this ruling undermines the basic procedural protections afforded to design professionals. Earlier court decisions, NSPE notes, have determined that the statute of limitations begins to run as soon as plans are presented by the design professional and accepted by the owner, even if the design professional and owner have a continuing relationship.

The trial court, according to NSPE, also failed to enforce the contractor’s obligations that are clearly defined in the contract documents and instead imposed liability on the professional engineer. By doing so, NSPE argues, the trial court undermines the commercial expectations of the parties and frustrates public policy interests that encourage commercial parties to assign risks and duties clearly, specifically and appropriately through standard contract forms.

NSPE President Harve Hnatiuk, P.E., F.NSPE, commented: “As licensed professionals, PEs are held to and exercise high levels of accountability to protect the public health, safety, and welfare. This includes exercising high standards of care in selecting the materials they use in their designs and the integrity of the plans they seal. However, this court ruling would make the PE accountable for defects or failure of products to perform to standards warranted by the manufacturer, for delays in the client’s use of finished plans that are beyond the engineer’s

influence or control, and obviate the use of the very contractual instruments that were designed to maximize transparency and accountability. This would undermine, rather than enhance, the professional engineer's ability to honor his or her duties to the public.”

“NSPE’s intervention in this court proceeding is just the latest step in the Society’s 80-year history of actively advancing, promoting, and defending the meaning and efficacy of the professional engineer license in protecting the public that relies upon it for assurance that their welfare is served,” he added. Also joining the brief were the national and local affiliates of the American Council of Engineering Companies and the American Society of Civil Engineers.

Maryland Bill Would Clarify PE Role in State Projects

The Maryland Society of Professional Engineers is backing legislation in the state assembly that requires a licensed engineer to be in responsible charge of reviewing and approving engineering documents for state and local projects.

The legislation (H.B. 752/S.B. 738), introduced in February, requires that engineering documents associated with certain projects that require the skills of a professional engineer and are conducted by or under contract with the state or a political subdivision of the state should be signed, sealed, and dated by a PE. The requirement applies to all engineering documents prepared in connection with the alteration, construction, design, or repair of a building, structure, building engineering system and its components, machine, equipment, process, works, subsystem, project, public or private utility, or facility in the built or economic environment.

If signed into law, the legislation will be effective on October 1.

NSPE President Harve Hnatiuk, P.E., F.NSPE, [sent a letter](#) to Delegate Dereck Davis and Senator Joan Carter Conway to express support for the legislation. NSPE believes that all engineers who are in responsible charge of the practice of engineering that potentially impacts the public health, safety, and welfare, should be required by all state laws to be licensed professional engineers.

In the letter, Hnatiuk stated that hearings on the legislation presented an opportunity to ensure that Maryland state law removes any implication that city or local government employees are exempt from the licensing requirement if they are practicing engineering. All licensed professional engineers are required by law to meet rigorous education, examination, and experience standards. In addition, all licensed professional engineers in Maryland must complete mandatory continuing education requirements in order to maintain their PE license. He emphasized that any licensed professional engineer in Maryland who violates the state’s law and rules is subject to disciplinary action by the state engineering licensure board.

Minnesota PEs Say ‘No’ to Requiring Additional Licenses

The Minnesota Society of Professional Engineers is supporting legislation that will specify that professional engineers licensed to provide engineering services to state agencies are qualified to do so without additional licenses or certifications.

MSPE believes that the existing requirements for individuals to become professional engineers in the state are grounded in proven education, testing, state rule requirements, complaint and enforcement processes, and ethical standards. Requiring PEs to gain additional licenses and certifications, MSPE argues, will not provide additional protection of the public health, safety, and welfare.

The bill (H.F. 288/S.F. 417), introduced in January, clarifies the licensure requirements in the state's professional engineers act. The language states that a person licensed as a PE will be required to obtain a license, certification, or other form of approval for a skill or service in addition to a PE license only if the state or political subdivision has determined the additional license or certification is necessary to safeguard life, health, or property, or promote the public welfare. The bill doesn't restrict the state or political subdivision from including additional requirements when soliciting public contracts for engineering services.

If the bill does not become law, there is a potential for state and local agencies to have varying standards and requirements for qualifying individuals to practice engineering, MSPE says. Requiring PEs to have additional licenses or certifications could also send a message to the public that the PE license is not an adequate standard and that individual state agencies can regulate the practice of engineering.

Additional certification requirements for professional engineers can cross the line into engineering practice. In 2012, the California legislature passed a bill designed to prevent state and local agencies from requiring certifications to provide design services that PEs are already qualified to perform. The bill, which was vetoed by Governor Jerry Brown, would have given the state PE board the sole authority to license and regulate the practice of engineering.

NSPE believes that professional engineering licensure is the only qualification for engineering practice. The Society and its state societies will actively oppose attempts to enact any local, state, or federal legislation or rule that would mandate certification in lieu of or beyond licensure as a legal requirement for the performance of engineering services. Following licensure as a PE, individuals may voluntarily have their expertise in a specified field of engineering recognized through an appropriate specialty certification program. Such certification, NSPE argues, must not imply that other licensed professional engineers are less qualified for practice in a particular field of specialty.

PE Magazine, May 2015

With Memories of Stage Collapse Still Fresh, Indiana PEs Reject Removal of PE Requirement for Building Commissioner

The Indiana Society of Professional Engineers is opposing legislation in the General Assembly that will eliminate an engineering licensure requirement for the state building commissioner.

The bill (H.B. 1507) downgrades the PE requirement to a qualification option for the individual serving in the position, which may pose a risk to the public health, safety, and welfare. Passed in the House on February 2 by a 63–33 vote, the bill awaits Senate action. If the bill is enacted, the building commissioner would be required to have at least 10 years of experience in the building trades industry, at least five years of management experience, and a bachelor’s degree in a construction-related field. An additional experience option would require at least five years of industry experience, at least five years of management experience, and a license as a PE or registered architect or a master’s degree in a construction-related field.

ISPE recently shared its concern that passage of the bill could be harmful to the public because the state building commissioner position requires the highest level of understanding of building design and safety. The commissioner reviews design documents for large structures, and the person in the position should have adequate knowledge of construction documents as they relate to the state’s building codes.

Only licensed design professionals are specially trained to understand the intricacies of structural design and safety issues, says ISPE, and this distinguishes them from other professionals. ISPE points to an investigation of a stage collapse at the Indiana State Fair on August 13, 2011; the incident killed seven and injured 58. The investigation revealed that inadequate lateral load resisting capacity caused the failure and no review of the structure was ever conducted by a licensed design professional, according to ISPE’s statement.

“We should be strengthening our laws, not weakening them,” ISPE President Scott Haraburda, P.E., says in the release. “We demand that the Senate do the right thing and defeat H.B. 1507 from eroding enforcement of building codes that have protected Hoosiers for many years.”

NSPE worked closely with ISPE to encourage Indiana members to contact their state senators by using the Voter Voice [Legislation Action Center](#) and sharing ISPE’s statements with major newspapers throughout the state.

North Carolina Society Backs Motor Fuels Tax Decrease

North Carolina Governor Pat McCrory signed legislation on March 31 to decrease the state’s motor fuels tax on gasoline, diesel, and alternative fuels from 37.5 cents per gallon to 36 cents per gallon from April 1 to December 31. The Professional Engineers of North Carolina supports

the tax rate change as a critical first step to stabilize funding for the state transportation system but also believes long-term funding reform is needed to meet growing needs.

The new law also reduces the motor fuels tax, which is included in the retail price, to 35 cents beginning in January 2016. Starting in July 2016, the tax will decrease to 34 cents and will remain 34 cents through 2017.

The state's gas tax made up nearly 70% of funding to maintain roads and bridges and approximately 60% of the North Carolina Department of Transportation's budget. If tax adjustments had not passed, the state risked a drop of six to eight cents in the gas tax beginning on July 1. The tax decrease could have resulted in a nearly \$400 million annual funding loss for roads and bridges, according to PENC.

PENC President Neil Deans, P.E., believes that the state couldn't risk the safety of citizens by allowing the motor fuels tax rate to fall to a level that would jeopardize the ability to maintain and repair bridges and roads. "Engineers consider it our responsibility, our obligation, to safeguard the state's vital infrastructure," he stated in a press release. "This is the right step to take while also offering a tax break for the traveling public."

Arkansas Assembly Passes Good Samaritan Legislation

The Arkansas General Assembly passed legislation in March that would give licensed design professionals increased immunity from personal liability when they volunteer their services in response to natural disasters and declared emergency situations. The legislation is supported by the Arkansas Society of Professional Engineers and the state chapter of the American Council of Engineering Companies.

The legislation (H.B. 1391/Act 534), introduced in February, states that a registered architect or professional engineer voluntarily providing professional services during a declared national, state, or local emergency for a disaster or catastrophic event (earthquake, hurricane, tornado, fire, explosion, or collapse) at the request and approval of national, state, or local public officials or law enforcement will not be liable for any personal injury, wrongful death, property damage, or other loss while performing in this volunteer capacity. This liability immunity applies only to architectural or engineering services provided during the declared emergency or within 90 days following the end of the period of the emergency. This period can be extended only by a governor's emergency executive order. Liability immunity will not cover individuals who engage in willful or intentional misconduct. Design professionals who volunteer their services can only receive expense reimbursements.

NSPE supports the adoption of Good Samaritan laws that provide immunity from liability for any personal injury, wrongful death, property damage, or other loss caused by a professional engineer's acts, errors, or omissions in the performance of voluntary engineering services. These laws eliminate the liability deterrent that may inhibit engineers from providing voluntary services. In addition, Good Samaritan laws allow states and localities to factor in voluntary engineering assistance when planning for disasters.

Maine Legislators Reject Engineering Services Tax Proposal

The professional engineering community in Maine is celebrating after a budget proposal to levy a sales tax on engineering services was rejected by the legislature's Taxation Committee. The Maine Society of Professional Engineers joined the American Council of Engineering Companies' state chapter in opposition to the proposal.

Governor Paul LePage introduced a \$6.3 billion two-year budget cycle proposal in January that reduced the top income tax rate from 7.95% to 5.75% but eliminated sales tax exemptions for professional services. The sales tax on professional services targeted architecture, legal, accounting, photography, and financial planning firms, as well as engineering firms.

LePage's proposal also called for increasing the state sales tax to 6.5% from 5.75%; phasing out revenue sharing to cities and towns, for a reduction of \$164 million in funding; and allowing cities and towns to tax nonprofit organization properties valued at more than \$500,000.

Professional engineers opposed the tax by contacting their state legislators and testifying during a Taxation Committee public hearing. Jim Wilson, P.E., president of the American Council of Engineering Companies' state chapter, said during his testimony that the professional services tax would generate very little revenue and place a burden on engineering firms, particularly smaller firms.

He pointed out that engineering services are rarely taxed and states that have implemented taxes in the past, such as Massachusetts, Connecticut, and Florida, eventually repealed these taxes. Any sales tax enacted must be structured in a way that is fair to Maine firms and allows them to compete with firms from outside the state, he said.

Wilson also pointed out that the proposal maintains a necessary exemption on business-to-business taxes, which prevents a layered tax system. It also keeps an exemption for goods and services provided directly to municipalities, which prevents the taxpayer from being taxed twice.

Tennessee Engineers Oppose Building Code Measures

Tennessee engineering groups have united against legislation that will allow localities to adopt building codes for commercial and residential construction that fall below standards established by the state fire marshal.

The state fire marshal adopted the 2006 International Building Code and the 2009 International Residential Code as the minimum standards for construction in the state in order to increase public safety, according to the Tennessee Society of Professional Engineers. Current law requires the state fire marshal to establish minimum safety standards for building construction that applies to municipal, county, state, and private buildings, including one-family and two-family dwellings unless specified by a statute.

Under the legislation (H.B. 0628, S.B. 0620), local jurisdictions that have an established codes department are exempt from audits of their records and transactions by the state fire marshal. This exemption eliminates the requirement for auditing jurisdictions at least once every three years if they establish their own building safety code departments to ensure minimum safety standards. It also removes a provision that state building codes supersede all less stringent provisions of municipal ordinances for these jurisdictions.

The Tennessee Society of Professional Engineers, the American Council of Engineering Companies–Tennessee, and the State Board of Architectural and Engineering Examiners oppose the legislation, citing possible safety risks to the public.

Without these minimum standards and oversight by the state, says TSPE, localities may adopt building codes that serve only business investment interests rather than public safety. These codes are reviewed and updated regularly when new information is gained from reviewing structural failures and other building collapses.

PEs Call for Transportation Funding, But Voters Don't

Michigan voters rejected a transportation proposal seeking to raise about \$1.3 billion a year through a new motor fuels tax. The Michigan Society of Professional Engineers supported the proposal as a long-term solution to the state's transportation system needs and a way of improving the system's quality and safety.

More than one million citizens voted against Proposal 1, a 10-bill package signed by Governor Rick Snyder in January, which would have raised revenues for schools and local governments and provided tax relief to working class families.

The proposal would have replaced the 6% gas sales tax with a wholesale-level motor fuels tax dedicated to funding transportation projects. The current gas sales tax is reserved by the state's constitution to support schools and local governments.

To provide more revenue for schools and local governments, the proposal sought to increase the state sales tax to 7% from 6%. The revenues raised by the proposed tax increases would have raised an estimated \$1.2 billion for road and bridge projects, \$112 million for transit and rail projects, \$300 million for schools, \$94 million for local governments, and \$260 million in tax relief for lower-income residents through an earned income tax credit. More than 60% of the funding was directed toward local road and bridge needs.

One piece of the proposal stated that at least 20% of all maintenance contracts involving the Michigan Department of Transportation must provide payment based on performance outputs or outcomes. Detroit and the state's five largest counties were included in this system.

The state has not updated overall investment in roads since the gas tax was implemented in 1997, according to the governor's office. The state chapters of the American Council for Engineering Companies and the American Society of Civil Engineers also supported the proposal.

In Minnesota, a Major Victory Against Additional Certifications

Minnesota Governor Mark Dayton has signed a bill specifying that professional engineers licensed in the state are qualified to practice engineering without additional licenses or certifications.

The legislation was pushed by the Minnesota Society of Professional Engineers, which believes that requiring professional engineers to gain additional licenses and certifications will not provide increased protection of the public health, safety, and welfare. Without the legislation, state and local agencies could have varying standards and requirements for qualifying individuals to practice engineering.

The bill, which was signed on May 7 and takes effect on August 1, clarifies the licensure requirements in the state's professional engineers law. The new law states that a person licensed as a PE will be required to obtain a license, certification, or other form of approval for a skill or service in addition to a PE license only if the state or political subdivision has determined the additional license or certification is necessary to safeguard life, health, and property, and promote the public welfare. The bill doesn't restrict the state or political subdivision from including additional requirements when soliciting public contracts for engineering services.

The governor's signature is the final step in more than four years of hard work toward enactment of the bill, says MSPE Executive Director Mary Detloff. While the new law does not affect any additional licenses or certifications already in place, the society anticipates that its passage will stem the tide of future new licenses or certifications for professional engineers.

“The law recognizes the education and experience requirements of the professional engineering license as the gold standard of the engineering profession,” says Detloff. “Eliminating the automatic application of additional licenses or certifications to individuals already licensed as professional engineers should make it simpler and less costly for Minnesota PEs to conduct business.”

NSPE believes that professional engineering licensure is the only qualification for engineering practice. The Society and its state societies will actively oppose attempts to enact any local, state, or federal legislation or rule that would mandate certification in lieu of or beyond licensure as a legal requirement for the performance of engineering services. Following licensure as a professional engineer, individuals may voluntarily have their expertise in a specified field of engineering recognized through an appropriate specialty certification program. Such certification, NSPE argues, must not imply that other licensed professional engineers are less qualified for practice in a particular field of specialty.

Society Seeks Direct PE Role in Offshore Oil Rig Inspections

NSPE is calling on the Bureau of Safety and Environmental Enforcement to bolster the role of the professional engineer in its final rule making addressing the Deepwater Horizon disaster of 2010. In a [public comment](#) issued on April 30, the Society asked the agency to ensure that licensed professional engineers have direct supervision over all engineering design, operations, and maintenance of offshore oil rigs.

The BSEE-proposed rule requires a professional engineer in cementing and casing situations to examine, review, approve, and certify changes or remedial measures as part of blowout preventer systems and well control. The agency’s rulemaking seeks to do the following:

- Implement recommendations related to well-control equipment and fill gaps in the regulatory program;
- Increase the performance and reliability of well-control equipment;
- Improve regulatory oversight of the design, fabrication, maintenance, inspection, and repair of critical equipment;
- Gain information on leading and lagging indicators of blowout preventer component failures, identify trends in those failures, and help prevent accidents; and
- Ensure that the industry uses recognized engineering practices, as well as innovative technology and techniques, to increase overall safety.

On December 15, 2010, [NSPE recommended to the Chemical Safety Board](#) that licensed professional engineers have direct supervision over all engineering design, operations, and maintenance of offshore oil rigs. The high-risk nature of offshore drilling and the possibility for disaster make it necessary for added protection for the public that only licensed professional engineers can provide, says the Society.

NSPE: Proposal Would Weaken PE Role in Licensing of Deepwater Ports

On April 21, [NSPE submitted a public comment](#) to oppose a proposed rule that would weaken certain requirements for a professional engineer as part of the licensing process of deepwater ports.

The proposed regulation, issued on April 9 by the Coast Guard of the Department of Homeland Security, includes two provisions that gravely concern NSPE, given their tremendous impact on the public health, safety, and welfare: a change to allow unlicensed engineers from within the US, as well as foreign engineers, to perform engineering services that only a licensed PE can perform and a change to allow these unlicensed engineers to submit design and construction plans on behalf of the licensee.

In its response to the Coast Guard, the Society urged that the final rule reflect the important role of the PE “by maintaining the requirements for a professional engineer and not providing an alternative ... (through) use of foreign engineers who may not be registered professional engineers.”

[Read more about this issue](#) in the *June 2015 Policy Perspectives*.

Breaking Ground

Irene Ramirez, P.E., was recently named the first female city engineer of El Paso, Texas—but it’s not the only time the NSPE member has set a precedent.

PE talked with Ramirez about her career and success factors.

PE: Why did you want to be an engineer?

Ramirez: I was pretty good in math. My [high school] counselor suggested that I consider engineering because it was a career where there weren’t a lot of women and yet it could give me some good opportunities.

PE: What attracted you to government?

Ramirez: [To] do something to better the city [where] I was born, raised, and grew up. I was drawn to the fact that while I could be a public servant, I could also find challenging [and diverse work].

PE: What do you enjoy the most?

Ramirez: The ability to interact with the citizens. We have implemented a robust public outreach program and interact with neighborhood associations and private citizens, from inception of the project to design and construction.

It allows us to make small revisions that are important to the citizens and allows them to be part of the process, so they have more pride in the project. They take better care of things.

PE: What accomplishments are you most proud of?

Ramirez: Being named the [first female] Engineer of the Year for the local Texas Society of Professional Engineers chapter and now being the first woman to lead the City of El Paso's engineering and construction management department.

But I was also the first woman [engineer] hired by the city [in the 1980s]. Back then, it was me and all these guys. Some of the people I had to supervise were much older than I and had never had a woman boss. It was a sometimes difficult challenge but made me stronger and helped me to become a better manager.

Continued at <http://www.nspe.org/resources/pe-magazine/june-2015/breaking-ground>.

Members Overwhelmingly Endorse NSPE Statement of Principles

What does it mean to be a licensed professional engineer and an NSPE member? Can you summarize it in a two-minute (or less) elevator speech?

PEs often find these questions challenging, perhaps because of the wide variety of engineering disciplines, perhaps because there's so much to say about the profession. Two minutes? No way.

But this spring, NSPE members were asked for their opinions about just such an elevator speech, and the response was overwhelming approval.

Out of 2,364 respondents—95% PEs and 66% NSPE members—95% said that the following statement accurately conveyed their feelings about being a PE: “Being a licensed professional engineer means more than just holding a certificate and possessing technical competence. It is a commitment to hold the public health, safety, and welfare above all other considerations.”

The survey also asked about three components of the mission of NSPE and its state societies. Again, there was overwhelming support:

- Define the PE license and licensed individuals (84%);
- Promote the PE license and licensed individuals (96%);
- Protect the integrity of the profession and the welfare of the public by vigorously opposing the practice of engineering by unqualified persons; and advocating the highest standards of licensure, ethics, and professional practice (96%).

The most frequently used adjectives to describe the complete statement of principles were “strong” (60%), “effective” (54%), and “trustworthy” (38%).

How will the statement fit into the Society's day-to-day work? "For effective advocacy and marketing, it is important to be able to succinctly state, 'This is the purpose NSPE exists to serve,' but this is about more than mere marketing language or 'spin,'" says NSPE President Harve Hnatiuk, P.E., F.NSPE.

Adds NSPE Executive Director Mark Golden: "This statement of principles is the outcome of NSPE's ongoing Race for Relevance, and will drive your Society's priorities and investment of resources, not just how we talk about them. Informed by several years of surveys, study, and feedback from members on what they value and need from NSPE, it is an organizational commitment, aligned with the timeless principles upon which NSPE was first created, restated for the 21st century."

Learn more about "Who We Are and What We Do" at www.nspe.org/membership/nspe-who-we-are-and-what-we-do.

PE Magazine, July / August 2015

State Societies Back NSPE Opposition to Federal Rule to Weaken PE Role

Three state societies have joined NSPE in opposition to a proposed rule that would weaken certain requirements for a professional engineer to oversee parts of the licensing process of deepwater ports.

The Connecticut Society of Professional Engineers, the Florida Engineering Society, and the Virginia Society of Professional Engineers recently submitted public comments to express their disapproval of the proposal.

The proposed regulation, issued on April 9 by the Coast Guard of the Department of Homeland Security, includes two provisions that gravely concern the Society because of their tremendous impact on the public health, safety, and welfare: a change to allow unlicensed engineers from within the US, as well as foreign engineers, to perform engineering services that only a licensed PE can perform and a change to allow these unlicensed engineers to submit design and construction plans on behalf of the licensee.

In its response to the Coast Guard, [NSPE submitted a public comment](#) on April 21 urging that the final rule reflect the important role of the professional engineer “by maintaining the requirements for a professional engineer and not ‘providing an alternative...[through] the use of foreign engineers who may not be registered professional engineers.’”

In its comment, the Connecticut Society emphasized that the public is best served by having qualified licensed professional engineers in responsible charge of the engineering services. Licensure as a professional engineer is the highest credential an engineer can attain, CSPE wrote. The equivalent education, examination, and experience requirements, if met, would result in licensure as a professional engineer. To encourage bringing in foreign engineers who lack these qualifications and are less familiar with local conditions, local building codes and standards, state environmental requirements, and statutes endangers the public health and safety.

FES stated that it has a long history of working with state and federal agencies on rulemaking through its Conservation and Environmental Quality Committee. Since the state is home to 15 designated deep water ports, the committee is concerned that the proposed added flexibility comes at the expense of protecting the public health, safety, and welfare. FES also stressed that the use of unlicensed personnel to perform services designated as professional engineering services goes against state law. Unlicensed individuals will be subject to investigation and possible discipline by the Florida Board of Professional Engineers.

The Virginia Society argues that there is simply no shortage of US-based licensed professional engineers to contract for these projects, and no grounds to attribute a shortage of qualified PEs to delays in completing deepwater ports. VSPE pointed out that infrastructure developed on federal installations are required to be designed and sealed by licensed professional engineers, and no

building, utility, or structure can be constructed based on plans presented by unlicensed engineers or architects.

Texas Bill Reduces Liability Risk for PEs

Governor Greg Abbot signed legislation in June that will protect design professionals from a duty to defend government agencies for any liability other than that caused by or resulting from negligent acts. The legislation will become effective on September 1.

The bill (H.B. 2049), introduced in February, prohibits a government agency from entering a contract for design services that contains a provision requiring a licensed engineer or registered architect to indemnify, hold harmless, or defend the government agency against liability for damages. A licensed engineer or architect will be held only proportionally liable for damage caused by an act of negligence, intentional tort, intellectual property, or failure to pay a subcontractor or supplier.

The legislation also requires that a contract for design services must include the standard of care for a contractor's services. The contractor must perform services with the professional skill and care ordinarily provided by engineers or architects practicing in the same or similar locality and under similar circumstances. It also allows for contractual provisions authorizing the government agency to seek reimbursement of reasonable attorney's fees after a final adjudication determining that the contractor was liable due to an act of negligence or intentional tort.

The Texas Society of Professional Engineers supported the measure because previously some government agencies and entities were requiring engineers to defend the agency based simply on an allegation of negligence by the professional engineer. In a professional services contract, these types of provisions are typically uninsurable under a professional liability insurance policy, says TSPE.

The legislation is also supported by the American Council of Engineering Companies, the Associated General Contractors, and the Texas Society of Architects.

Connecticut Governor Signs 10-Year Statute of Limitations Bill

Connecticut professional engineers are applauding Governor Dannel Malloy's approval of legislation that sets a 10-year statute of limitations on state-initiated claims relating to construction and design projects.

The Connecticut Society of Professional Engineers worked with design and construction associations to support the statute of limitations legislation, says CSPE Executive Director Paul Brady. The legislation was introduced in response to the 2012 Connecticut Supreme Court decision in *State of Connecticut v. Lombardo Brothers Mason Contractors Inc., et al.* The court concluded that no statute of limitations applied to claims made by the state.

The legislation (S.B. 1032), signed by Malloy on June 4, prohibits the state from attempting to recover damages related to construction work more than 10 years after the date of substantial completion of the improvement. Additionally, a claim for indemnity or contribution arising out of construction-related work cannot be made by the state 10 years after the date of substantial completion or no later than three years after the date of determination of the claim against the state or political subdivision that is seeking indemnification by judgment or settlement. The new statute of limitations will also be retroactive in nature, covering projects that have been previously completed as well as new projects.

The legislation does not bar an action or claim:

- When there is a written warranty, guarantee, or other agreement, including a tolling agreement, that provides for a longer effective period.
- When there is willful misconduct in the performance or furnishing of construction-related work.
- Under any environmental remediation law or related to a contract entered into by the state in carrying out its responsibilities under any environmental remediation law.
- Under contracts related to enclosure, removal, or encapsulation of asbestos.

CSPE Past President Donald Doeg, P.E., who is also an attorney, testified to the Senate Judiciary Committee, to explain complex legal and contractual issues to state agencies and legislators. He believes the legislation greatly diminishes risks to the construction industry when conducting business with the state. “It will also help make Connecticut a more business friendly state, decrease the costs of projects to everyone involved, and make the construction industry a more fair place to work,” he says.

Georgia Enacts Transportation Funding Plan

Legislation that could generate nearly \$1 billion in revenue for state and local transportation projects in Georgia was signed by Governor Nathan Deal on May 4. The transportation funding act provides a mix of mechanisms to increase revenue to close infrastructure funding gaps, including a 29.2 cent excise tax, which replaces a motor fuels sales tax.

The Georgia Society of Professional Engineers and the American Council of Engineering Companies of Georgia rallied their members to support the funding plan, which they believe will allow the state to improve its transportation infrastructure and attract and retain high paying jobs.

The state needs \$1 billion–\$1.5 billion in additional resources to preserve the existing infrastructure system and \$3.9 billion–\$5.4 billion to fully address transportation needs, according to a 2014 Joint Legislative Study Committee on Critical Infrastructure Funding.

The new law will require the transportation and appropriation committees of the state house and senate to develop plans and budgets to address construction of new highway projects; maintenance of existing infrastructure and bridge repairs and replacement; safety enhancements;

and administrative expenses. Projects in areas of the state with the most traffic congestion and in need of highway infrastructure to attract economic development will be designated as top priorities.

In addition, the law, introduced in February as H.B. 170, will:

- Replace a motor fuels sales tax with a 29.2 cent excise tax that will be adjusted based on corporate average fuel economy standards and the National Highway Construction Cost Index;
- Eliminate all state sales and use tax from the sale of motor fuels;
- Permit a special purpose local option sales tax to continue at 1% on all motor fuel sales with renewals required to be used for transportation purposes;
- Repeal the tax credit for commercial airlines and require tax revenue from jet fuel sales to be used for the state aviation program or airport-related projects;
- Implement user fees on alternative fueled vehicles;
- Eliminate the tax credit for low- or zero-emission vehicles purchased or leased after July 1; and
- Allow the Georgia Transportation Infrastructure Bank to give preference to eligible projects in tier 1- and tier 2-level counties.

Virginia High Court To Review Product Liability Case

NSPE calls for reversal of lower court decision

The Virginia Supreme Court has agreed to hear the appeal of a case that could put professional engineers at serious legal risk.

In February, NSPE [filed a “friend of the court” brief](#) before the Virginia Supreme Court in support of an appeal of a lower court decision that, if affirmed, would require a professional engineer to independently test and verify the accuracy of a product manufacturer’s representation to satisfy the professional standard of care.

The case, *William H. Gordon Associates, Inc. v. Heritage Fellowship, United Church of Christ, a/k/a Heritage Fellowship Church, et al.*, arose in connection with the installation and collapse of a rain tank storm water management system in 2011. NSPE’s brief argues that the trial court improperly shifted the risk of liability for product defects from those who manufacture and sell products to those who deploy them in engineering designs. Professional engineers face a high but legitimate burden to ensure that the products they specify in their plans are appropriate for use, but the lower court ruling would, in effect, require the engineer to independently test and verify all materials rather than rely on the specifications warranted by the manufacturer. NSPE argues this is an unrealistic and inappropriate shifting of the burden and liability from the manufacturer to the engineer who reasonably relied upon the manufacturer’s representations. NSPE’s brief notes that this risk allocation threatens to increase the cost of professional engineering services and discourages the use of newer innovative products and designs.

The circuit court also erred, according to NSPE, by ruling that the statute of limitations for design defect claims against engineers is paused when there is a continuing relationship between the PE and the owner. NSPE contends that this ruling undermines the basic procedural protections afforded to design professionals. Earlier court decisions, NSPE notes, have determined that the statute of limitations begins to run as soon as plans are presented by the design professional and accepted by the owner, even if the design professional and owner have a continuing relationship.

NSPE also argues that the trial court failed to enforce the contractor's obligations that are clearly defined in the contract documents and instead imposed liability on the professional engineer. By doing so, NSPE argues, the trial court undermines the commercial expectations of the parties and frustrates public policy interests that encourage commercial parties to assign risks and duties clearly, specifically, and appropriately through standard contract forms.

Also joining the brief were the national and local affiliates of the American Council of Engineering Companies and the American Society of Civil Engineers.

Five Years After Deepwater Horizon, a Solution That Requires PEs

By Arielle Eiser

On April 17, five years to the week after the initial explosion aboard the Deepwater Horizon oil rig that resulted in 11 deaths and the discharge of 3.19 million barrels of oil into the Gulf of Mexico for 87 days, the Department of the Interior's Bureau of Safety and Environmental Enforcement published a new proposed regulation to "better protect human lives and the environment from oil spills." The measures include more stringent design requirements and operational procedures for critical well control equipment used in offshore oil and gas operations. This proposed rule would be the third new regulation issued by the Obama administration in response to the 2010 oil spill, but in many ways it is the most significant.

The culmination of years of stakeholder meetings, committee hearings, and in-depth investigations, the proposed rule requires a professional engineer in cementing and casing situations to examine, review, approve, and certify changes or remedial measures. In an April 30 [letter of public comment](#), NSPE commended the Bureau of Safety and Environmental Enforcement for taking this important step and recognizing the professional engineer's vital role in protecting the public health, safety, and welfare.

NSPE further urged that, in considering the final rule, the agency incorporate [NSPE's 2010 recommendation to the Chemical Safety Board](#) to require that licensed professional engineers have direct supervision over all engineering design, operations, and maintenance of offshore oil rigs. Offshore oil drilling is an inherently risky activity and, as the BP oil spill demonstrated, an accident exposes the public and environment to potential catastrophe. The combined high-risk nature of offshore drilling and the possibility for disaster necessitate an additional degree of protection that only licensed professional engineers provide. This requirement would not only improve the safety of offshore drilling, but also minimize the potential for disaster.

Fortunately, it will not be another five years before the proposed regulation is finalized. The draft rule was opened to public comment for 60 days, closing on June 16, and is expected to be finalized later this year, incorporating the additional feedback. Although rules of this nature tend to be rather controversial, in this particular instance, interested stakeholders have worked closely with the Department of the Interior on creating a comprehensive rule that can be accepted by all parties.

This proposed rule comes only days after the Coast Guard, a division of the Department of Homeland Security, issued an alarming rule that would allow unlicensed, foreign engineers to perform engineering services that should be performed only by a professional engineer in the licensing of deepwater ports. NSPE has responded with a [vigorous call to action](#) in opposition.

The Bureau of Safety and Environmental Enforcement's proposed rule takes steps to address the circumstances and failures that resulted in the worst oil spill in our nation's history. One of the key takeaways was the need for the use of qualified individuals, namely professional engineers, to play a critical role in ensuring the protection of the public health, safety, and welfare. NSPE strongly believes that the Bureau of Safety and Environmental Enforcement's leadership on this issue is further evidence as to why the Coast Guard rule must be changed. NSPE will continue to proactively advocate on this matter and keep members updated.

Design-Build Legislation Introduced in 114th Congress

By Arielle Eiser

Rep. Sam Graves (R-MO) recently introduced H.R. 1666, the Design-Build Efficiency and Jobs Act of 2015. This legislation reintroduces Grave's design-build measure from the 113th Congress, [which NSPE endorsed](#).

H.R. 1666 protects the integrity of the federal procurement process and enables small and large businesses alike to compete for federal construction contracts. As stated in NSPE Position Statement No. 1726 on design-build in the public sector, NSPE recognizes that more than one project delivery system may meet an owner's project requirements. Factors such as safety, function, time from conception to completion, capital and life-cycle costs, environmental quality, and appearance will each play a role in the owner's decision. Accordingly, NSPE acknowledges the role these factors play and neither advocates nor opposes design-build. When design-build is the selected approach, NSPE strongly encourages use of the two-step method. This method requires that the design team's qualifications be part of the evaluation process. This method ensures that competent and qualified design professionals are initially involved in the procurement process so that quality-based design considerations are incorporated into the drawings, plans, and specifications, consistent with the interests of the public health and safety.

NSPE commends Congressman Graves for working to improve the federal laws pertaining to design-build.

PE Magazine, September / October 2015

NSPE Takes Action in Virginia Supreme Court Liability Case

NSPE [filed a “friend of the court” brief](#) in July before the Virginia Supreme Court in support of an appeal of a lower court decision that would require a professional engineer to independently test and verify the accuracy of a product manufacturer’s representation to satisfy the professional standard of care. The Society believes that the ruling will place licensed engineers at serious legal risk if not reversed.

The case of *William H. Gordon Associates Inc. v. Heritage Fellowship, United Church of Christ, a/k/a Heritage Fellowship Church, et al.*, involves the installation and collapse of a rain tank stormwater management system in 2011. The brief argues that the trial court improperly shifted the risk of liability for product defects from those who manufacture and sell products to those who deploy them in engineering designs.

Professional engineers face a high but legitimate burden to ensure that the products they specify in their plans are appropriate for use, but the lower court ruling would, in effect, require engineers to independently test and verify all materials rather than rely on the specifications warranted by the manufacturer. The Society believes this is an unrealistic and inappropriate shifting of the burden and liability from the manufacturer to the engineer who reasonably relied on the manufacturer’s representations.

The brief also states that the Supreme Court doesn’t need to determine whether the appellant violated the standard of care to reverse the trial court’s judgment and that a design professional exercises due care when he or she reasonably relies on representations of product manufacturers. In addition, the circuit court failed to tie the statute of limitations accrual date to the date the plans were presented by Gordon and accepted by Heritage.

Requiring engineers to investigate the accuracy of a product manufacturer’s specifications will deter engineers from using newer innovative products and designs, according to the brief. This risk allocation also threatens to increase the cost of professional engineering services.

Also joining the brief were the national and local affiliates of the American Council of Engineering Companies and the American Society of Civil Engineers, the Engineers and Surveyors Institute, and the Virginia Association of Surveyors.

Indiana Review Board Proposes End of PE Licensing

ISPE, NSPE step in, and make the case for protecting the public.

The Indiana Society of Professional Engineers is challenging a state committee's recommendation to eliminate the licensing of engineers by the State Board of Registration for Professional Engineers. ISPE has been working in partnership with NSPE to [spread the message](#) that elimination of licensure is a threat to the public health, safety, and welfare.

Indiana Society Immediate Past President Scott Haraburda, Ph.D., P.E., F.NSPE, issued a statement in June to Governor Mike Pence and Nick Rhoad, chair of the Job Creation Committee, challenging the committee's recommendation to the General Assembly to end the state's licensure requirement for engineers. Not only would following through with this recommendation harm public safety, but it also would stunt the state's economic growth, he said.

“Professional engineers and engineering firms have invested countless hours and many millions of dollars to encourage their engineers to pursue licensure,” Haraburda stated. “This would have a profoundly negative effect on the work of engineers in Indiana and the businesses they lead, work in, and support.”

Haraburda also added that the step would destroy the state's link to a nationwide system of engineering licensure and place at risk the ability of Indiana PEs to practice outside the state.

ISPE points to an investigation of a stage collapse at the Indiana State Fair on August 13, 2011, that put a spotlight on poorly designed buildings and systems. The incident killed seven and injured 58. The investigation revealed that inadequate lateral load resisting capacity caused the failure, and no review of the structure was ever conducted by a licensed design professional.

The JCC also recommended eliminating licensing regulations for 10 additional professions and occupations including architects, home inspectors, surveyors, hearing aid dealers, and auctioneers. According to an online article in the July 30 edition of the Fort Wayne's Journal Gazette, Governor Pence has indicated that he believes that not licensing engineers is a mistake, and he will ensure that the licensing and regulation of engineers will continue in Indiana.

The JCC was charged by the legislature in 2014 to conduct a formal review of the boards and commissions regulated by the Indiana Professional Licensing Agency. The committee is recommending legislation based on several factors, including whether the regulation of an occupation should be modified, whether boards should be combined, or whether a board or regulation of an occupation should be terminated or a license eliminated. The IPLA oversees 38 boards, commissions, and committees and regulates more than 70 licensed occupations or professions, including architects, engineers, accountants, nurses, doctors, and cosmetologists.

A Freshman's Guide to the Body of Knowledge

Many engineering students who are just beginning their college education aren't familiar with all of the skills necessary for success in the profession. Now there's a resource that can help—NSPE's [Engineering Body of Knowledge](#).

In 2013, the Society introduced the first edition of the EBOK, which describes 30 capabilities that are necessary for the practice of engineering in responsible charge of projects that may impact the public health, safety, and welfare.

To inform students about the EBOK and provide a comprehensive view of what it means to be an engineer, NSPE's Licensure and Qualifications for Practice Committee developed an engineering course exercise. The Society's Professional Engineers in Higher Education interest group evaluated the exercise for freshman-level students.

After completing the exercise, students should be able to do the following:

- Describe, in their words, the purpose of the Engineering Body of Knowledge;
- Identify capabilities in the EBOK that fit their current view of engineering and explain how knowing these expected capabilities may affect their choice to study engineering; and
- Indicate capabilities in the EBOK that don't fit their current view of engineering and explain how knowing these unexpected capabilities may affect their choice to study engineering.

The exercise can also be used as a tool to advise faculty members who are interested in pursuing professional licensure.

Are You a Competent Engineer?

New competency model can help you find out.

The American Association of Engineering Societies and the Department of Labor released an [engineering competency model](#) in July that was designed to provide a universal professional development tool for employers.

In 2013, NSPE led the way to the development of this model with the introduction of the first edition of the [Engineering Body of Knowledge](#), which provides a common ground for developing the knowledge, skills, and attitudes necessary to practice as a professional engineer across engineering disciplines. NSPE is a member of AAES.

The competency model consists of five tiers outlining knowledge, skills, and abilities that may affect a major part of an engineer's job and connect with job performance. Industry leaders, employers, educators, human resource professionals, and practicing engineers can use the model to improve training, development, and experience.

Tier 1—Personal Effectiveness Competencies

These competencies are personal attributes, such as being able to work effectively with others from diverse backgrounds, displaying strong moral principles and work ethic, and the capability to adapt to new and changing requirements. These are soft skills that can be developed within a person's home, community, and workplace.

Tier 2—Academic Competencies

This tier relates to competencies that are learned in an educational setting and apply to all industries and occupations. Competencies include reading comprehension, science and math skills, critical thinking, and communication skills.

Tier 3—Workplace Competencies

Workplace competencies address interpersonal and self-management styles. These competencies involve the ability to work on a team, effectively addressing client and stakeholder needs, efficiently managing projects, innovative thinking, and basic business knowledge.

Tier 4—Industry-Wide Competencies

This tier covers the knowledge, skills, and abilities that engineers can benefit from, regardless of the sector. These competencies include understanding engineering fundamentals and their effect on society; design; professional ethics; and quality control and quality assurance.

Tier 5—Industry-Sector Competencies

This tier covers competencies that are specific to various sectors and established by industry leaders.

Award Winner Takes Personal Interest to Ensure Student Success

The money Ahmet Zeytinci, P.E., F.NSPE, received for winning the [Engineering Education Excellence Award](#) disappeared soon after he got the check. He's not a reckless spender; he reinvested the funds from the award, given to him by NSPE's Professional Engineers in Higher Education, back into his passion—helping his students.

The professor of civil and structural engineering spends hours each Saturday running an FE and PE exam prep class for students from his own institution, the University of the District of Columbia, and other area schools, as well as alumni and working engineers. He not only offers the course at no charge but also provides participants with coffee, water, and sandwiches.

Over the last two decades, he has seen a 90% exam pass rate. Getting licensed enables the students from his small urban school to prove themselves on a level playing field, Zeytinci says. "You should see the confidence, the self-esteem. It's so unbelievable."

Continued at <http://www.nspe.org/resources/pe-magazine/september-2015/award-winner-takes-personal-interest-ensure-student-success>.

Problem-Solving PEs Shape Public Policy

By Arielle Eiser

This summer NSPE introduced a new advocacy resource: the [PE Legislators web page](#). Professional engineers, and NSPE members in particular, are passionate about their profession and the public policy issues that impact their ability to protect the public health, safety, and welfare. The PE Legislators web page, which complements NSPE's other advocacy offerings, including the Legislative Action Center, NSPE-PAC, and the legislative and regulatory tracking service available to state society executives, gives members an opportunity to learn about PEs who became legislators and their experiences. Members can also get the latest advocacy tips for influencing policy at the state and federal levels.

In preparation for the debut of the PE Legislators web page, NSPE collaborated with the newest professional engineer in the US Congress, Rep. Bruce Westerman, P.E., to share his experiences and insights. Westerman encouraged NSPE members to serve at all levels of government. "Find a place where you can serve. It doesn't have to be Congress, it doesn't have to be a long-term ambition.... I believe politics and government are most effective when it's closest to the people.... Professional engineers can make a huge impact in their community whether it be by serving on city councils or school boards." Westerman started his political career on his local school board where he was able to put his professional engineering expertise to work. Now he represents Arkansas's Fourth Congressional District in the House of Representatives.

Central to Westerman's message is the importance of licensure and the critical role associations such as NSPE play in shaping public policy. In particular, he emphasizes that the licensure process exists to protect the public by ensuring that only professional engineers engage in the practice of engineering. Moreover, Westerman urges members to share their unique expertise as PEs to shape the direction of policymaking.

With licensure regulated at the state level, it is of the utmost importance to have PEs serving in the state legislatures. NSPE contacted state legislators from across the country to learn about their experiences and how NSPE members can meaningfully engage legislators on public policy issues of interest to the professional engineering community. Rep. Lake Ray, P.E., has served in Florida's House of Representatives since 2008. Ray has been able to apply his expertise as a professional engineer to influence the legislature's policies affecting infrastructure, particularly deepwater ports.

Ray points out that given the relatively small number of engineers serving in state legislatures, it is critical that professional engineers work with elected officials as the go-to subject-matter experts. He urges NSPE members to cultivate ongoing relationships with state legislators. "[PEs] need to invite legislators to meetings and engage them at all levels, including campaigns.... Most of the time I only hear from professionals once a year, when they come to ask for something. Develop a relationship with the members of the legislature and they will work on your behalf."

This is an extremely important advocacy tip. The most rewarding relationships with legislators are those that are not limited to a single issue or require only annual contact. Offer yourself as an expert and resource on a variety of issues throughout the year.

Alabama State Senator Clyde Chambliss, P.E., also strongly encourages NSPE members to become advocates for the profession with their state legislators. “When people in my district contact me, it trumps the contacts of lobbyists and government officials that have a vested interest in the outcome,” he says.

Do not underestimate your influence as a constituent. The most successful advocacy efforts are grassroots advocacy efforts.

Texas Rep. Wayne Smith, P.E., has been a tireless advocate for his district and his profession. Smith strongly believes that PEs must share their views with their state legislators. He has been able to directly influence issues related to transportation, air quality, and water quality because of his expertise. Most importantly, serving as the chairman of the House Committee on Licensing and Administrative Procedures, Smith has been able to successfully champion the interests of PEs. However, as one of only two professional engineers in the Texas state legislature, Smith emphasizes the need to address the knowledge gap this creates. “As our society becomes more complex and technical, we must have knowledgeable people in office that understand these issues. . . . Engineers are hard to come by in the Texas legislature, so other officeholders will respect your knowledge of critical engineering issues.”

Professional engineers are shaping public policy at all levels of government, whether as legislators or as advocates of the profession. NSPE’s new web page devoted to PE legislators helps to further inform and engage members to become vocal advocates for the profession.

To learn more, visit www.nspe.org/resources/issues-and-advocacy.

NCEES Rejects Structural Engineering Proposal

The National Council of Examiners for Engineering and Surveying narrowly defeated a motion to establish in the council's Model Law a protected structural engineering title and restricted SE practice.

The motion, proposed at the council's annual meeting in August, grew out of an NCEES advisory committee that was charged with studying the issue of structural engineering practice and its regulation and recommending revisions to the Model Law and Model Rules. The current Model Law and Model Rules recognize a licensed engineer as a professional engineer, with no reference to discipline. Licensed professional engineers are then restricted to practice within their areas of expertise.

Before the council vote, NSPE encouraged state societies to express their opposition to the structural licensure motion to state licensing boards. The Society believes that the continued recognition of [PE licensure as the defining qualification for practice](#) is critical to guaranteeing the trust and protection of the public. Layers of licensing requirements would cloud that perspective and create uncertainty. In addition, PEs who are not fully competent to perform structural engineering are already ethically obligated not to do so, just as they are obligated not to practice in any areas that are beyond their established expertise and competence.

NSPE is fully committed to protecting and defending the PE license. In order to successfully define, promote, and protect the PE license, though, professional engineers in all disciplines need to stand united. Efforts to weaken engineering licensure or carve out particular niches within the profession undermine a system of laws designed to protect the public. All PEs must work together to fight attempts to damage the licensure process and place at risk the public health, safety, and welfare.

NSPE Takes Action to Protect PEs from Liability Risks

The World Federation of Engineering Organizations' effort to address climate change and infrastructure resiliency could create negative consequences for professional engineers, says NSPE.

In September, the Society expressed concerns that WFEO's Model Code of Practice [could pose increased legal risks for PEs](#). NSPE believes that the code is, at its core, a thoughtful document on an important issue: how to address the increasing challenges posed by climate change to infrastructure resiliency. The Society sent a letter urging the American Association of Engineering Societies' representative to the WFEO to recommend changing the provisions that could expose professional engineers to increased claims and litigation.

The model code has a global scope and offers policy direction to the highest management levels of public- and private-sector projects. The standards and provisions within the draft document, however, could establish a new standard of care for professional engineers that far exceeds their existing duties and responsibilities, NSPE warns.

The Society recommends the drafting of a white paper to advance awareness and discussion within the profession and provide general guidance that can be adapted to the specific legal and regulatory environment that is unique to each nation, state, or municipality. The white paper must not create a new standard of care that is unreasonable, conflicts with existing law and standards, and needlessly opens up professional engineers to increased liability risk.

Landfill Audits Need PE Expertise, Says NSPE

NSPE has called for the Environmental Protection Agency to require PEs to perform audits at municipal solid waste landfills to increase safety.

On September 14, NSPE submitted a [public comment](#) to the EPA, commending the agency for proposing additional safety measures requiring a PE to prepare site-specific gas collection and control system plans for landfills. As part of the proposed rule (Emission Guidelines and Compliance Times for Municipal Solid Waste Landfills), EPA requested comments on the appropriate professional and educational requirements for auditors.

NSPE asserted that the auditing process is best performed by licensed professional engineers. EPA further inquired as to whether self-audits should be allowed in lieu of independent audits. The Society strongly encouraged EPA to maintain the current system of independent third-party audits. However, should the agency allow a self-auditing process, NSPE stated, the report must be prepared by a licensed professional engineer.

Ethics Education Requirement on the Horizon for Ohio PEs

Legislation introduced in the Ohio House seeks to implement an ethics continuing education requirement for professional engineers to renew their licenses. The bill, introduced in June, is sponsored by Rep. Louis Blessing, III, P.E., an NSPE member.

If enacted, the bill (H.B. 236) will require PEs and professional surveyors to complete at least two hours of continuing professional development in professional ethics or rules relating to their respective discipline every two years. The law will also allow a licensee to carry over up to two hours of ethics-related professional development into the next renewal period.

“This bill will require engineers and surveyors to complete two of their 30 hours in continuing education in ethics or rules,” says Blessing. “This will help ensure that responsible and ethical engineering and surveying practices are occurring throughout the state of Ohio.”

Ohio PEs must complete at least 30 hours of professional development following initial licensure or renewal during a two-year period. Licensees can carry over a maximum of 15 excess credit hours into the next renewal period. The new requirement will start with licenses that expire on or after December 31, 2017.

The State Board of Registration for Professional Engineers and Surveyors maintains a goal of auditing 5% of licensees to ensure that they are completing the continuing professional development hours required for registration renewal.

After Colorado Mine Spill Disaster, PE Congressman Wants Answers

Rep. Bruce Westerman, P.E., (R-AR), an NSPE member, wants to know why a professional engineer wasn't involved on an Environmental Protection Agency pollutant mitigation project for the Gold King Mine in Colorado. On August 5, an agency team and contractors accidentally released more than 3 million gallons of mine wastewater into the Animas and San Juan rivers.

On September 22, Westerman [filed a complaint](#) with the Colorado Department of Regulatory Agencies, Division of Professions and Occupations, alleging that the EPA violated the state's engineering licensure law by being involved in the practice of engineering. He believes that the agency violated the section of the law stating that an entity may practice or offer to practice engineering in Colorado only if the individual in responsible charge of the entity's engineering activities performed in the state is a professional engineer licensed in Colorado.

Westerman says that the agency has not demonstrated that an engineer licensed in Colorado was engaged during the project's planning and design stages or part of the site removal team that was responsible for the mine spill. The EPA, he says, should be subject to the same consequences that an individual or other entity faces for violating the law. "I believe the spill could have been prevented, or at the very least, significantly mitigated, if the EPA had followed the engineering practice laws established to safeguard life, health, and property and to promote the public welfare," Westerman says.

The EPA's own review affirms my belief that those conducting the work had not adequately designed a reclamation plan that safeguarded life, health, and property, causing significant damage to public resources," he adds. "A licensed professional engineer would have reviewed risk factors and carefully designed an appropriate solution in order to avoid such an incident."

Westerman questioned EPA Administrator Gina McCarthy about the role of licensed engineers on the project during a September 17 joint hearing of the House Committee on Natural Resources and the House Committee on Oversight and Government Reform. McCarthy declined to answer, but showed that she was surprised at how few qualified design professionals are employed by the EPA in the affected Region 8.

NSPE is working very closely on this issue with Westerman and his office, as well as several congressional committees. The Society has urged the EPA and all federal agencies to review

their practices and requirements. A licensed professional engineer should be in responsible charge of all projects that constitute the practice of engineering.

Follow [the story](#) about the Gold King Mine.

Meet the Next Generation

By @NSPENEXTGEN

When you first signed up to become an NSPE member, the first thing you probably said to yourself was, “I can’t wait to see what the governance model is like!”

Or perhaps, “I wonder how many policies and procedures I’ll get to read?”

You didn’t?

We didn’t either.

Governance and structure are key foundational elements for any well run organization. They enable great things to happen.

But they aren’t the purpose of why organizations exist.

Continued at <http://www.nspe.org/resources/pe-magazine/november-2015/meet-the-next-generation>.

Learn more about NSPENextGen at <http://www.nspenextgen.org/>.

EBOOK Exercise Illuminates Profession for Students

An exercise developed by NSPE is helping students better understand the skills and capabilities necessary to succeed in engineering. What they’re learning is surprising them.

In 2013, NSPE released the [Engineering Body of Knowledge](#), which identifies 30 key capabilities for the professional engineer in responsible charge of projects affecting the public health, safety, and welfare.

The Society’s Introduction to the Engineering Body of Knowledge activity is targeted at freshman. It asks students to identify capabilities in the EBOK that both fit and don’t fit their view of engineering and explain how knowing those capabilities may affect their choice to study the field.

John Tapia, E.I.T., a civil engineering technology professor, teaches Introduction to Engineering to freshman at New Mexico State University. He used the exercise the past two semesters. “This

is a great gateway to help students understand what NSPE is, and the professional engineer,” he says.

Among the capabilities his students found surprising: ethical responsibility, legal aspects of engineering, and engineering economics. But they ended up more excited about the profession after seeing the diverse skills required, Tapia explains.

Jeff Greenfield, P.E., F.NSPE, has twice assigned the exercise in the engineering ethics course he teaches for Florida International University’s department of civil and environmental engineering.

Although most of his students are juniors, they still found many of the capabilities unexpected—for instance, technical breadth, public policy, and those relating to business skills.

“I think they believe they only need to know what’s in their courses and nothing else,” Greenfield says.

“Some of the capabilities were obvious,” says Fané Austin, an FIU junior. “However, many of these capabilities seemed like other majors should be required to have [the] knowledge.” Ones that surprised her included engineering economics; quality control and quality assurance; risk, reliability, and uncertainty; societal impact, technical breadth; business aspects of engineering; and public policy.

“Some of these seemed like jobs that you hire other professionals to do,” she says. But what she learned gave her greater respect for engineers, and positively affected her decision to study the field. “[I]t made me want to be an engineer even more,” Austin says, “because I will be able to do a variety of things in my profession.”

Access the exercise and other information about the Engineering Body of Knowledge at www.nspe.org/ebok.

Prepping for Professionalism

By Danielle Boykin

NSPE student chapters give future engineers leadership lessons and their first taste of the profession.

NSPE members understand that today’s students are destined to be tomorrow’s engineering professionals. The undergraduate enrollment in US engineering programs has increased by nearly 8% between 2012 and 2013 to reach 569,274, according to the American Society for Engineering Education. Yet, challenges remain with ensuring that students don’t opt out of engineering programs and stay engaged in the profession after they graduate. Currently, 40% of US engineering students leave their program by the end of their second year.

In 2014, NSPE partnered with the [Stay With It initiative](#) to help improve engineering student retention. What do students want? They want to be motivated, mentored, and provided

opportunities to meet with engineering professionals and develop leadership skills early in their academic careers.

NSPE has 48 active [student chapters](#) that are engaging students across the nation. Three chapters are excelling in these areas and playing an essential role in developing the next generation of engineering professionals.

Continued at <http://www.nspe.org/resources/pe-magazine/november-2015/prepping-professionalism>.

Professional Engineers Convince Panel of Licensure's Value

By Arielle Eiser

As the result of extensive advocacy efforts by the Indiana Society of Professional Engineers and NSPE, the Indiana Job Creation Commission recently rescinded its troubling recommendation to eliminate licensure of the professional engineer.

The JCC, which was created in 2014 to examine the licensing of all of the state's professional boards, released its draft report on June 17, recommending elimination of the PE license in Indiana. ISPE and NSPE organized a swift, coordinated response to urge the JCC and Indiana Governor Mike Pence to reverse the recommendation.

ISPE sent a letter to the JCC Chairman Nick Rhoad and Governor Pence's office on June 19, urging them to remove the recommendation. At ISPE's request NSPE sent a letter addressing both the state and national implications of such a recommendation and urged that the decision not only be reversed but that the final report submitted to the governor's office on July 1 reflect these changes.

[NSPE's letter](#) focused on two core tenets. First, and foremost, the licensure of professional engineers in Indiana, and in every state, is vital for the protection of the public health, safety, and welfare. Professional engineers design and administer the construction of bridges, tunnels, buildings, waste-water treatment facilities, plants, factories, processing centers, and many other public and private development projects. The PE license demonstrates an engineer's commitment to the highest standards of engineering practice and ethical conduct and shows that the individual has the proper education, experience, and qualifications to provide these engineering services to the public.

The JCC had recommended that a system of voluntary self-certification be considered. Most unfortunately, history reveals that self-regulation is tantamount to no regulation at all. Licensure of engineers, in fact, in all states was driven by instances in which citizens were killed or injured and property damaged due to errors and omissions committed by individuals who practiced engineering without the proper education, experience, qualifications, and ethics.

The second core tenet addressed the economic and business implications of such a recommendation. Professional engineers and engineering firms have invested countless hours

and many millions of dollars to pursue and maintain engineering licensure in Indiana and in other states and territories. Eliminating engineering licensure would have a profoundly negative effect on the ability of Indiana engineers and the businesses they lead to carry out their work. In brief, such a proposal would stunt economic growth.

The governor's office immediately responded to NSPE's letter stating that it opposed the JCC's recommendation to eliminate engineering licensure. The final report was amended but still stated that there would be further consideration of the licensure of engineers. A public hearing to address this issue further was held on August 20. NSPE submitted additional comments strongly urging that the decision be rescinded as part of the meeting's formal record. ISPE Immediate Past President Scott Haraburda, P.E., testified at the hearing and the JCC rescinded its recommendation.

This is an important victory for professional engineers. Across the nation, NSPE and its state societies emphasize the tremendous value of engineering licensure. At the same time, events such as these are an absolutely critical reminder to all states to remain vigilant against efforts to compromise or eliminate professional engineering licensure. NSPE has been actively monitoring developments around the country and stands ready, willing, and able to collaborate with state societies to oppose any such efforts.

To learn more about NSPE's latest advocacy news, including updates on regulations, legislation, and state action, please visit <http://www.nspe.org/resources/issues-and-advocacy>.