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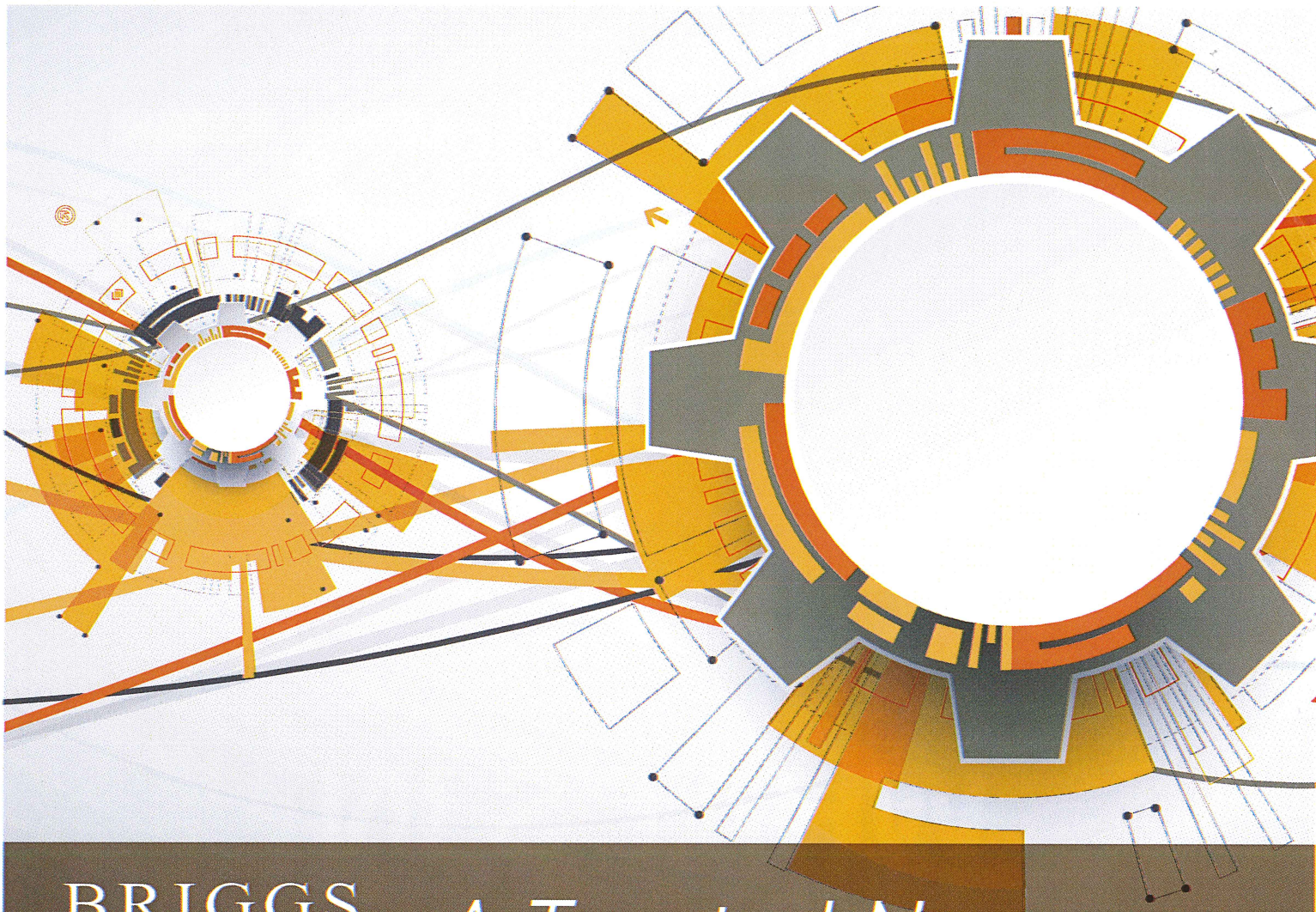
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PE

THE MAGAZINE FOR
PROFESSIONAL ENGINEERS

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WHAT'S IN A NAME?



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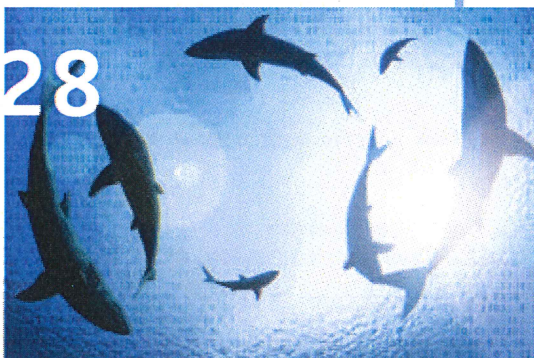
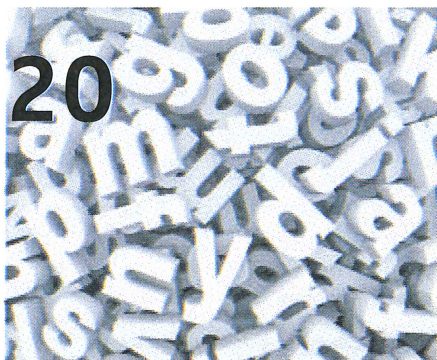
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20 What's in a Name?

There's no question that the public health, safety, and welfare has been better served by preventing unqualified persons from calling themselves engineers, and the good name of the profession has ensured public trust and the continuation of licensure. Recently, though, the question of how far the engineering community should go to protect the profession's good name, and by extension the public, has been raised in the press and in the courts.

BY MATTHEW McLAUGHLIN

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From bringing STEM activities to schools to working with public officials, PEs spend time outside of the office to communicate the importance of engineering and licensure. Outreach is a major component of the profession. But how did that come about? Has it always been that way, or has there been a growing focus on this aspect of professional life?

BY EVA KAPLAN-LEISERSON

28 Under Threat

Cybersecurity threats are on the rise, and architecture, engineering, and construction firms aren't immune to some of the same attacks and intrusions experienced by businesses in other industries. PE spoke with professional liability and cybersecurity experts at Victor O. Schinnerer & Co. about the risks that AEC firms face and how they can reduce and manage those risks.

BY DANIELLE BOYKIN



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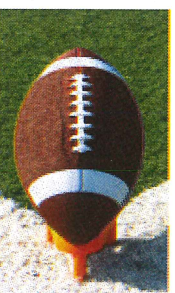
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The Meaning of 'E'

I hate the use of the term "EWeek" as shorthand for "Engineers Week" ("At 65, EWeek's Only Getting Stronger," January/February, p. 32). If Engineers Week is designed to help kids (and others) discover what engineering is all about, then I suggest that we only refer to it as "Engineers Week." What are we gaining by shortening it to "EWeek"? To me, this invites confusion with all the other things that are already abbreviated with an "E" that is short for "electronic" (like e-mail). If you want kids to figure out what engineering is, don't confuse the issue by thinking that anyone other than engineers is going to know that "EWeek" is shorthand for "Engineers Week."

I think *PE* magazine is a place where the full term "Engineers Week" should be championed. In your article on page 32 in the January/February 2016 issue, "EWeek" appears in the title and in four other places on the page, while Engineers Week is used three times. Let's take pride in the fact that we are engineers and that we have a week named after us; don't shorten and cheapen the concept and disguise what it actually is.

David S. Hamilton, P.E.
Dallas, TX

You're Not Alone

As NSPE President Tim Austin, P.E., F.NSPE, puts it, because the Society is the only organization that represents engineers across multiple disciplines, it can serve as a voice of reason and represent the public's concerns ("Embrace the Rich Diversity of NSPE," March/April, p. 35).

Actually, Tau Beta Pi, the engineering honor society, is a 501(c)(3) organization that represents engineers across multiple disciplines. Perhaps NSPE is the only professional society that represents engineers across multiple disciplines.

Jim Froula, P.E. (Retired)
Executive Director Emeritus
Tau Beta Pi

End the Exemption

I just read the article "Driving the Future" (January/February, p. 20). I absolutely agree that engineers are working in more

areas involving potential risk of harm to the public than the built environment alone. From defective ignition switches to driverless cars, we need to eliminate the industrial exemption.

I spent my career in industry and was proud to be a PE, even though I never stamped any work. I always thought the industrial exemption was wrong and was told by corporate types that the corporate liability umbrella would protect the engineer. In light of some of the criminal actions coming out today on some of the manufacturing issues, that may change. I would hope that someday licensure brings more to accountability and technical competence.

William L. Gregory, P.E. (Active Retired)
Latrobe, PA

Four Years Not Enough

I concur with Stuart G. Walesh's opinion (May/June, Letters, p. 3) that an advanced degree beyond the four-year college degree must be required for a PE license. The logic behind this argument is simple: Technology has made giant strides in recent years with new theories and design methodologies. It is imperative that engineers be well-acquainted with the changes. But one-day workshops or two-hour seminars on "recent advances" cannot substitute for graduate-level education. In my 36 years as a civil engineer, I have seen young engineers work on complex computer programs with little or no understanding of the underlying principles, which are generally taught in graduate school.

I also disagree with the argument that licensed practicing engineers are more likely to be technically current just because they accrue professional development hours. No, they can't be. Continuing education seminars are merely viewed as a formality for PEs renewing their licenses. It's rarely more than that. They cannot take the place of a graduate course formally taught by a professor.

Sriram Kalaga, Ph.D., P.E.
White Bear Lake, MN

HOW TO REACH US *PE* welcomes letters from readers, however we are unable to publish all letters we receive. We reserve the right to edit letters for space, style, and clarity.

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Ohio Society, NSPE: Piping Bill Treads on PE Expertise

The Ohio Society of Professional Engineers is opposing legislation that restricts the selection of piping material for state-funded water, wastewater, and storm drainage projects. OSPE believes the bill hinders the ability of PEs to use their expertise to determine the types of materials that are appropriate for projects.

The bill (H.B. 214) prohibits a public authority from preferring one type of piping material for a project unless sound engineering practices suggest a certain piping material is more suitable for the project.

NSPE submitted a letter in May to the Ohio House Energy and Natural Resources Committee Chairman Al Landis to voice concerns with the bill. In the letter, NSPE President Tim Austin, P.E., F. NSPE, points

out that the type of pipe used in a given situation depends on a number of factors such as the fluid being conveyed, the chemical and physical characteristics of the fluid, and the depth of bury on the pipe and the material in which the pipe is buried. The legislation, however, is ambiguous and treats pipe material and piping situations as if they are all the same.

A similar bill made its way into the South Carolina legislature. This year the South Carolina Society of Professional Engineers fought S.B. 0408, which sought to require state agencies to use PVC piping for water supply, wastewater, stormwater, or storm drainage projects. Like the Ohio Society of Professional Engineers, SCSPE believes that the project engineer, when stamping

a design, should make the final decision on the types of materials that should be used for a project.

NSPE believes that professional engineers should use their own sound judgment based on experience, expertise, qualifications, and the applied knowledge of engineering principles to determine the type of pipe that is used in any situation, not the state. NSPE Position Statement 1745 states that an engineer in responsible charge should be completely in charge of, and satisfied with, the work product of the engineering services rendered. The engineer in responsible charge should also have and exercise the authority to review and reject or approve both the engineering work in progress and the final work product.

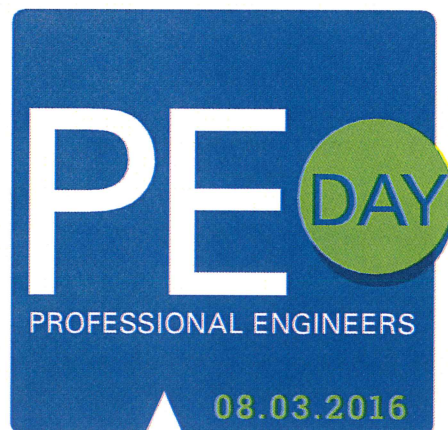
COMING SOON: Professional Engineers Day

In August of 1907, the first professional engineering license was issued to Charles Bellamy in Wyoming. Licensure has expanded since then, and professional engineers across the US are committed to protecting the public health, safety, and welfare. NSPE will celebrate licensed professional engineers with the first annual Professional Engineers Day on Wednesday, August 3, 2016.

In partnership with NSPE state societies, local chapters, and other engineering organizations, NSPE aims to increase awareness and appreciation for

the important contributions of licensed engineers. On Professional Engineers Day, the Society encourages professional engineers to continue to elevate the engineering community and share why they became licensed on social media using #LicensedPEDay.

Professional Engineers Day will be celebrated annually on the first Wednesday of August and will provide an opportunity to educate the public on the role of a licensed professional engineer and for companies to recognize members of their staff who are licensed.



Florida Law Emphasizes Qualifications Over Low Bid



A new Florida law that creates a uniform process for how public agencies engage in public-private partnerships contains qualifications-based selection and design-build provisions thanks to the actions of the Florida Engineering Society.

FES advocated for changes in the legislation (S.B. 124), which incorporates elements of the Consultant's Competitive Negotiation Act. The act requires state government agencies, municipalities, or political subdivisions to select a consulting firm based on qualifications rather than on the lowest bid.

The law, which took effect on July 1, expands the list of public entities that can enter into public-private partnerships to include special districts and school districts. If a public entity chooses to evaluate an unsolicited proposal involving architecture, engineering, or landscape architecture, it must ensure that a licensed design professional conducts a review and evaluation of the proposed design and construction. The review covers material quality standards, budget estimates, design and construction schedules, and sustainable design and construction standards.

The new law also requires solicited qualifying projects to include a design criteria package prepared by a licensed design professional. The licensed professional must be retained throughout the entire project. Public agencies must rank proposals based on professional qualifications, innovative design techniques, and finance plans. Agencies can then negotiate an agreement with the highest-ranked firm.

FES also worked to ensure that legislation (H.B. 273) dealing with public records requests didn't pose liability risks to engineering firms, particularly from deceitful requests for documents related to work with public agency clients.

The bill was enacted and took effect in March. It revises required provisions in public agency contracts for services regarding contractors' compliance with public records laws; requires a contractor to provide requested records to the public agency or allow inspection or copying of requested records; specifies circumstances under which courts must assess and award reasonable costs of enforcement against a contractor; requires requests relating to an agency's contract for services to be made directly to the agency; and provides that a contractor who takes certain actions isn't liable for reasonable costs of enforcement.

Georgia Enacts Law to Reduce Liability Risks for PEs

A new Georgia law reduces liability risks for design professionals by prohibiting the use of broad form indemnification and duty-to-defend clauses in contracts for engineering, architectural, and land surveying services.

The law took effect July 1 and is supported by the Georgia Society of Professional Engineers and the state chapter of the American Council of Engineering Companies. It states that contracts for engineering, architectural, or land surveying services are against public policy and unenforceable if they require one party to indemnify, hold harmless, insure, or defend

another party to the contract (or other named indemnitee) against liability or claims for damages, losses, or expenses.

The law maintains a protection for damages, losses, or expenses caused by the negligence, recklessness, or intentional wrongful conduct of the indemnitor or other individuals employed by or used by the indemnitor in carrying out contract services. The legislation (H.B. 943) was signed into law by Governor Nathan Deal in April.

NSPE supports legislation that provides a reasonable degree of protection for engineers in the performance of their professional services (NSPE Position Statement

1751). The Society believes that engineers should be expected to assume reasonable duties and responsibilities in rendering professional services for which they have professional competence and expertise and legal and contractual authority. An engineer should have appropriate liability insurance and other protections; however, clients and contractors should understand the role of the engineer in the design and construction process and not seek to impose unjustifiable liability that undermines the engineer's responsibility as a licensed professional whose legal and ethical obligation is to protect the public health and safety.

NCEES Releases Guidelines for Early Exam Taking

The National Council of Examiners for Engineering and Surveying has released a whitepaper to advise state licensing boards that want to allow licensure candidates to take the PE exam before gaining four years of experience.

In 2014, NCEES voted to remove from the Model Law a provision requiring a licensure candidate to have at least four years of experience before taking the PE exam. Currently, Arizona, California, Illinois, Kentucky, Nevada, New Mexico, Texas, South Carolina, Utah, and Wyoming allow candidates to take the exam prior to earning four years of experience.

NSPE recommends that state licensing boards provide flexibility for optional early taking of the PE exam by candidates who have met the educational requirements for licensure and passed the FE exam.

As the opportunities for early exam taking grow, the NCEES Member Board Administrators Committee wanted to ensure that boards are using best practices when separating the experience and examination requirements for licensing. The following guidelines are based on results from a board survey conducted last year.

Educate your state professional societies.

One of the biggest hurdles is misunderstanding what decoupling is, and more importantly, what it is not. The board should develop a one-page document explaining the benefits of decoupling and emphasizing that the requirements to become licensed have not changed. The guidelines recommend engaging with NSPE state and local chapters and referencing NSPE Position Statement 1770.

Select an effective date for the new process.

If a law or rule change is required, the effective date will be determined during that process. If the board has flexibility, starting after the previous exam cycle closes is a good choice. This gives the board an end date for developing a time line. Other dates along the time line will be for application creation and modification, instructions modifications, and website changes.

Decide on an appropriate approval model for PE exams.

NCEES will be offering various approval options for PE exams. Boards can select the appropriate option and then work with NCEES to approve criteria. For example, if an

applicant has a degree from an EAC/ABET-accredited program and has passed the FE exam, the applicant would automatically be approved after registering with NCEES. The council would require the candidate to submit a transcript for review and would verify the FE exam through internal records.

Develop an education plan to reach potential PE exam applicants.

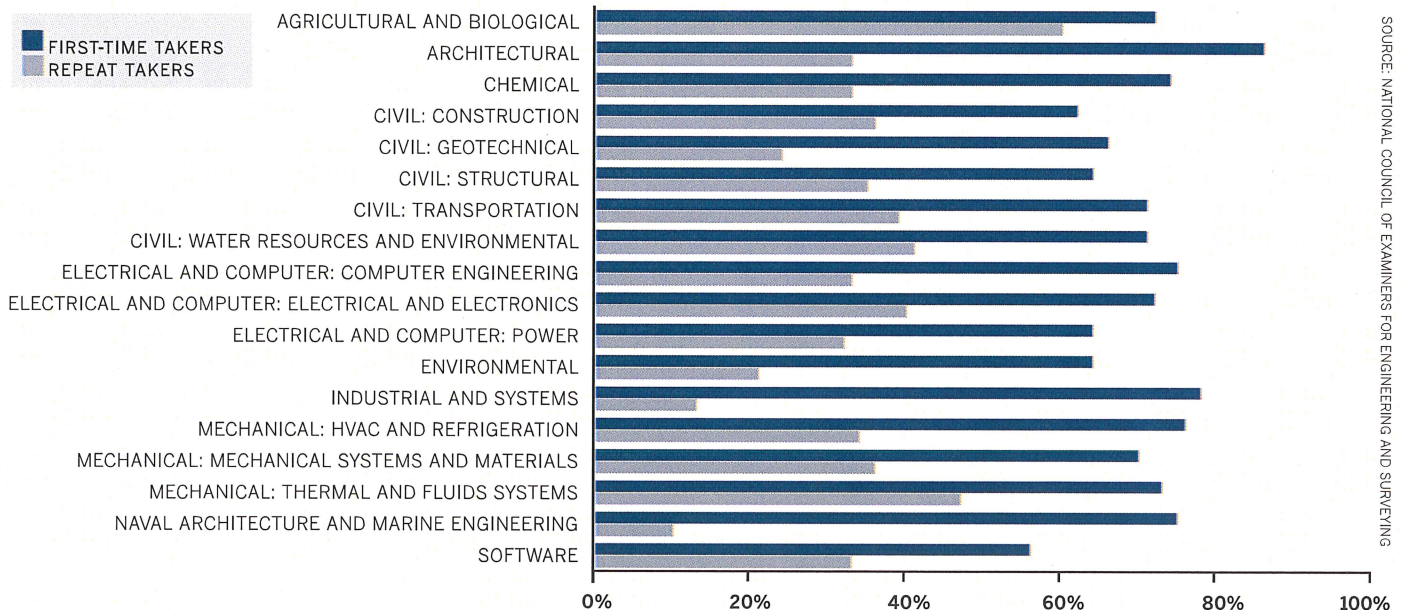
Potential examinees need to be aware of the change so they can consider early test taking. The board should develop a concise document explaining why the board made the change, when individuals can take advantage of the opportunity, and how to apply. The board should consider several communication options including website, social media, and speaking engagements.

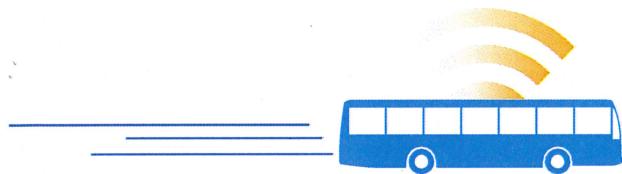
Modify or create the necessary applications.

The application that is needed to sit for the PE exam will no longer be an application for licensure. Previously, if someone passed the exam, a license was issued.

Access the document "Procedural Guidance for Decoupling Experience and PE exam Requirements for Licensure" at www.ncees.org

PE Exam Pass Rates: April 2016





Pennsylvania Begins Study of Autonomous Vehicles

Autonomous vehicles are on the agenda for the Pennsylvania Department of Transportation with the launch of a new task force commissioned to investigate safe and innovative development of the technology in the commonwealth.

The Autonomous Vehicles Testing Policy Task Force was created in June, in conjunction with legislation introduced in the assembly, to provide guidance on drafting autonomous vehicle policy. The Pennsylvania DOT will chair the task force, which will comprise state officials and representatives from the Federal Highway Administration, AAA, Carnegie Mellon University, the Society of Automotive Engineers, and Uber Technologies.

The legislation (S.B. 1268), introduced in May, focuses on controlled autonomous vehicle testing (not operation) and provisions for entering into a contract with the state DOT. The bill requires companies

interested in testing to submit an application and provide proof of \$5 million in general liability insurance.

The legislation specifies that a testing contract policy may contain the following: requirements that an autonomous vehicle tester must meet before operating the vehicle, including minimum safety standards and the minimum number of hours a vehicle must meet on a test road with low average daily traffic before the vehicle is introduced on a test road with high average daily traffic as determined by the DOT; and restrictions on the operation of the vehicles to specified geographic areas, classes and types of testing roads, and time and weather conditions.

It also allows for support for in-vehicle and remote-operator testing, considered the "full self-driving automation" level, the fourth and highest level of automation as defined by the National Highway Traffic Safety Administration.

NSPE Action on Autonomous Vehicles

NSPE continues to provide its expertise in the autonomous vehicle discussion, advancing the Society's mission of protecting the public health, safety, and welfare in the development and deployment of these technologies.

In April, the National Highway Traffic Safety Administration convened a national hearing in Washington, DC, to gather input on developing guidelines for the deployment and operation of automated vehicle safety technologies. On May 3, NSPE President Tim Austin, P.E., F.NSPE, submitted a formal comment on the NHTSA rulemaking, which is expected to be finalized this summer. The Society also provided guidance to the California Department of Motor Vehicles as part of its recent rulemaking on autonomous vehicle development.

Learn more about NSPE's action on autonomous vehicle technology development at www.nspe.org/autonomous.



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In Flint's Aftermath, a Time for Introspection

BY KERI BURCHARD-JUAREZ, P.E., PMP



In my home state of Texas, all licensed professional engineers are subject to the Texas Engineering Practice Act, enacted on August 30, 1965, in order to "safeguard life,

health, and property and protect the public welfare." This act was an update to the original Engineering Registration Act of 1937, enacted in response to the tragic school explosion in New London, Texas, which killed 295 students and teachers. The act states that when, "in an engineer's judgment, any risk to the public remains unresolved, that engineer shall report any fraud, gross negligence, incompetence, misconduct, unethical or illegal conduct to the board or to proper civil or criminal authorities."

The Michigan engineers involved in the delivery of lead-contaminated water into Flint's homes and businesses now face criminal charges, but this catastrophe has also prompted deep introspection among professional engineers everywhere about the state of our profession. How did this happen when there are so many safeguards in place that should have prevented it? How did a city's budget woes outweigh the responsibilities of public officials and professional engineers to protect the public health, safety, and welfare? Could it happen in other cities in other states? As engineers, we take personal pride in our vocation and its commitment to public health and safety and, as a professional community, we strive to embody this commitment in the performance of our work.

In response to this tragedy, we can take the opportunity to examine our own practice of the engineering profession and sharpen our focus on the responsibilities that come with the title of professional engineer. We can remind ourselves and those we serve that **our first obligation, superseding all others, is to protect the public, which relies on our expertise, ethics, and professionalism.** Many local and state governments are operating under the acute financial strain of maintaining

aging infrastructure. We can use the lessons of Flint to strengthen our resolve to provide complete, competent, and honest engineering recommendations even in the face of financial and political pressures.

In order for engineers to effectively and openly communicate concerns for public health and safety, there must be professional engineers in positions of authority at the agencies that manage and oversee our public infrastructure.

In Texas, when a public- or private-sector engineer believes that public health and safety are not being prioritized, or that a "risk to the public remains unresolved," he or she is obligated to report that concern to the Texas Board of Professional Engineers. Similar processes are successfully carried out in most states, and they are an important safeguard. But a culture of accountability in the engineering profession could prevent situations from escalating to that level. As engineers, we can support a common practice of keeping our professional obligations foremost in our decision-making processes and openly discussing any concerns about public health and safety.

In order for engineers to effectively and openly communicate concerns for public health and safety, there must be professional engineers in positions of authority at the agencies that manage and oversee our public infrastructure. Many local and state agencies responsible for the delivery of critical public services such as water, transportation, and environmental protection have traditionally been managed by engineers. However, in recent years, management of many of these agencies has transitioned to leaders who are not

engineers. The stated reasons for this shift typically emphasize the idea that some engineers are not skilled leaders, communicators, or administrators and that large and complex agencies require visionary leaders who can partner effectively with the private sector. Many assume that engineers are risk-averse and believe that an ingrained sense of professional caution will preclude the bold action needed to improve performance.

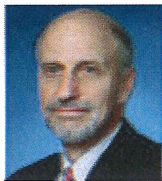
Although I dispute the idea that professional engineers can't be bold, visionary, and insightful leaders, as well as effective partners with the private sector, I do understand and acknowledge the need for a diverse pool of leaders with varied backgrounds and experiences. Our local and state agencies face risks, opportunities, and demands that are complex and always evolving. However, while not every agency responsible for public infrastructure must be managed by an engineer, we also should not exclude engineers from these executive leadership positions based on faulty assumptions about their leadership characteristics. Many engineers have just the right mix of prudence, judgment, and creativity that these agencies demand.

While professional engineers will not always be in leadership positions that influence public policy and infrastructure investment, we must maintain a strong voice in the discourse of public policy. As a professional community, we should seek leadership positions, run for elected office, and engage in community conversations about public health, safety, and welfare. We must practice our profession conscientiously, diligently, and in a manner that merits the public's trust, and then speak boldly with the courage of our convictions.

NSPE member Keri Burchard-Juarez, P.E., PMP, is a project manager and municipal transportation and interim water lead at Garver, an engineering, planning, and environmental services firm with offices in 18 cities, including Austin, Texas. She also worked for 11 years as assistant director of Austin's Public Works Department.

Business Cards, Copyright Laws, Lapsed License

BY ARTHUR SCHWARTZ, DEPUTY EXECUTIVE DIRECTOR AND GENERAL COUNSEL



Q I have heard that some states prohibit an engineer from handing out a business card in that state with the designation PE if that person isn't licensed in that state. Is this correct? (Minnesota)

A State laws and enforcement vary. Some states have taken a hard-line position that, for example, a PE licensed in State A who is not licensed in State B cannot come into State B and represent him/herself as a PE on a business card, letterhead, or similar communications. In the past, I have heard, anecdotally, of boards attempting to address the issue through letters and calls warning of potential prosecution and through reports to home state licensing boards. My sense is that these types of efforts are sometimes generated by PEs in State B who see engineers from other states as business competitors.

Some states take the position that the PE in the above scenario should have a card that indicates "NAME, PE (licensed in State A, not licensed in State B)" or similar. An obvious problem is when a PE is licensed in multiple states.

Q In recent years, it appears that courts are affording greater protection to engineering design documents under federal copyright laws. Is this correct? (Texas)

A Yes. Just one example of this protection was a federal trial court decision suggesting that engineering drawings were covered by the federal copyright laws. In that case, Guillot-Vogt Associates Inc. v. Holly & Smith, 848 F.Supp 682 (1994), an architect was hired by the state to prepare designs for a roof renovation and other repair work. The architect then retained an engineer to prepare mechanical and electrical drawings. The architect was paid by the state but failed to pay the engineer. After the first architect withdrew from the project, the state retained a second architect who

reproduced the engineer's drawings and removed the first architect and engineer's title block and seal without their consent. Thereafter, the engineer filed a copyright application and brought suit against the second architect. In ruling in favor of the engineer, the court rejected the second architect's contention that copyright laws do not extend to engineering drawings, noting that the 1990 amendments to the Copyright Act did not lessen the protection given to drawings, regardless of their type, and engineering drawings were therefore entitled to protection.

Q I am licensed in more than a dozen states. Originally, I was licensed in a state where licensing fees have risen dramatically in recent years. I am considering dropping my license in my original state of licensure because I no longer practice in that state, but I have been led to believe that if I do, I might jeopardize my ability to be licensed by reciprocity in additional states in the future. Any comments? (Connecticut)

A Several states have policies that refuse to grant reciprocity if an applicant's original license has lapsed. However, in at least one longstanding case in Kansas, *Bruns v. Kansas State Board of Technical Professions*, 864 P.2d 1212 (1993), an individual whose original license lapsed but who maintained a license in another state sought licensure by reciprocity in Kansas. The Kansas engineering board denied the application, citing an internal policy stating it would not approve an application for licensure by "comity" with another state board if the applicant's original license had been revoked, suspended, or if the applicant had allowed his original license to lapse or expire. The applicant challenged the board's action and the applicant prevailed, as a Kansas appeals court held that the engineering board could not rely on its written policy because it had never been adopted as part of formal rulemaking under the state's Administrative Procedures Act.

Responses are based on questions posed to NSPE Legal Counsel Arthur Schwartz.

Are you an NSPE member with a legal question for this column? Send it to Arthur Schwartz, 1420 King St., Alexandria, VA 22314-2794; fax 703-836-4875; or e-mail aschwartz@nspe.org.

These questions and answers do not, in any way, constitute legal advice. Always consult your own attorney before reaching any conclusions or acting upon any information presented in this forum. Also note that legal precedents change. An answer based on a case from several years ago may have a new perspective today.

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Manufacturing Ethical Dilemmas

Each year, the seven members of the NSPE Board of Ethical Review consider entries submitted to the NSPE Milton F. Lunch Engineering Ethics Essay Contest and select a winner. Based on a variety of factors, including the ethical dilemma posed, the manner in which the dilemma is stated, and issues to be addressed, the number and the characteristics of entries vary from year to year. This year's winner is Peter Tedder, P.E., of Mont Vernon, New Hampshire. Tedder and the New Hampshire Society of Professional Engineers will split the \$1,000 prize.

Facts

Engineer A is retained by Client X to oversee the design of an industrial processing facility, including manufactured elements of the facility. Engineer A prepares the drawings, plans and specifications for the industrial processing facility and in doing so, incorporates manufactured equipment into the facility. As part of Engineer A's preparation of the drawings, plans and specifications, Engineer A includes copies of the drawings, plans and specifications provided by the manufacturer of the manufactured equipment with Engineer A's drawings, plans and specifications. Engineer A gives full attribution to the manufacturer. Also included within Engineer A's contract with Client X is the provision whereby Engineer A represents that he has reviewed the manufacturer's drawings, plans and specifications and in his professional opinion believes the equipment will perform as represented, but that Engineer A is not responsible for the performance of the manufactured equipment.

Questions

Was it ethical for Engineer A to include copies of the drawings, plans and specifications provided by the manufacturer of the manufactured equipment with Engineer A's drawings, plans and specifications, giving full attribution to the manufacturer?

Was it ethical for Engineer A to include within Engineer A's contract with Client X a provision whereby Engineer A represents that he has reviewed the manufacturer's drawings, plans and specifications and in

his professional opinion believes the equipment will perform as represented, but that Engineer A is not responsible for the performance of the manufactured equipment?

Discussion

Engineers regularly reach outside of their engineering field and product knowledge to gather specialized information pertinent to projects that they are undertaking. In this instance, we can assume that the manufactured equipment referenced in this case is not simply manufactured elements of the building structure such as trusses or structural steel connectors, but rather machinery (manufactured equipment) related to the industrial process proposed within the facility. This manufactured equipment could be nearly any imaginable machinery that, by necessity, must be incorporated into the building during construction. A manned hoisting trolley, an automated wood finishing machine, roof top mounted air-conditioning system or a blow molding machine are examples of such equipment. The engineer would have to work in close cooperation with the manufacturer of the equipment to properly assess the effect of the equipment upon the entire facility design.

Complete drawings, plans and specifications of the manufactured equipment must be included with the overall plan, drawings and specifications of the proposed industrial processing facility. It is the best and surest way to "pass forward" the information upon which Engineer A based their many decisions. The documentation from the manufacturer provides the basis of determining floor loads, ventilation requirements, heating and cooling requirements, vibration, harmonics and a myriad of other decisions. Additionally, since the manufacturer's drawings, plans and specifications are included in the overall design documents, resident engineers and field inspectors will have a basis for performing a quality control inspection of the manufactured equipment when it is delivered and assembled on site.

Since the plans and specifications for the manufactured equipment were not of his own design, Engineer A correctly gives

full credit and attribution to the manufacturer for the documents applicable to the manufactured equipment.

It seems unusual that Engineer A would include a provision in the contract to review and offer an opinion on the suitability of the manufactured equipment. This is more likely to be a provision included in the contract by the client.

It is important to make sure that our first assumption is that Engineer A is performing their services ethically. Evaluation of the manufactured equipment may seem to be an area that lies outside of Engineer A's competencies, however; without knowing Engineer A's background we must assume that the Engineer is acting ethically and has special knowledge and experience that would qualify him to review the manufactured equipment in question. Within the letter rendering Engineer A's professional opinion there should be a brief summary of the Engineer's qualifications so the basis of any opinion can be understood and the opinion can be weighted properly in consideration of other factors associated with the selection of the manufactured equipment.

Without direct responsibility for the performance of the equipment, what motivation does Engineer A have to thoroughly review the drawings, plans and specifications for the manufactured equipment? Here again we have to start from the assumption that Engineer A is acting ethically. Everyone, including Engineer A, wishes for their projects to succeed. Manufactured equipment incorporated in the production facility must be reviewed at some level by all parties concerned with the success of the project. Ultimately, whether our engineer reviews the plans and specifications or not, the person that selected the equipment for the industrial process and the manufacturer of the manufactured equipment will be responsible for the satisfactory performance of the equipment once it is operational.

Conclusion

Engineer A acted ethically when including copies of the drawings, plans and specifications provided by the manufacturer of the manufactured equipment

with Engineer A's drawings, plans and specifications, giving full attribution to the manufacturer.

Engineer A acted ethically in offering his qualified professional opinion on the suitability of the manufactured equipment for the intended function without being directly responsible for the performance of the manufactured equipment.

NSPE Code References

Section I, 2 Engineers in the fulfillment of their professional duties, shall perform services only in the areas of their competence.

Section II, 2.0 Engineers shall perform services only in the area of their competence.

Section II, 2.a Engineers shall undertake assignments only when qualified by education or experience in the specific technical field involved.

Section II, 2.b Engineers shall not affix their signatures to any plans or documents dealing with subject matter in which they lack competence, not to any plan or document not prepared under their direction and control.

Section II, 2.c Engineers may accept assignments and assume responsibility for coordination of an entire project and sign and seal the engineering documents for the entire project, provided that each technical segment is signed and sealed only by the qualified engineers who prepared the segment.

Section II, 3.b Engineers may express publicly technical opinions that are founded upon knowledge of the facts and competence in the subject matter.

Section III, 7.c Engineers in sales or industrial employ are entitled to make engineering comparisons of represented products with products of other suppliers.

Is Your Firm's Ethics Program High Quality?

Top-notch ethics and compliance programs are critical to ensuring that engineering firms maintain a reputation for being responsible businesses that discourage ethical misconduct. But how can you tell if your program is on the right track? A new report released by the Ethics and Compliance Initiative has outlined five principles that characterize a high-quality ethics and compliance program.

Principle 1: Ethics and compliance are central to business strategy.

A high-quality program is viewed as a necessary element within every operation of the firm. The program must ensure compliance with the law and regulations while serving as a resource and advocate to help the organization's leaders understand their role in setting and meeting integrity standards.

Principle 2: Ethics and compliance risks are identified, owned, managed, and mitigated.

Compliance performance, strength or weakness of organizational culture, employee willingness or fear to report, and other key ethics and compliance areas should be evaluated as potential risks to the organization. Programs should provide targeted outreach to leaders and individual employees to prevent risks from materializing and respond to them as they occur. Leaders throughout all levels of the firm are responsible for ongoing identification and mitigation of risks that are relevant to their areas.

Principle 3: Leaders at all levels across the organization build and sustain a culture of integrity.

Firms with high-quality programs have a clear understanding that culture is the greatest influencer of business conduct and leaders are recognized as the primary drivers of that culture. Leaders should be committed to and responsible for making ethical conduct and ethical decision making central to the organization and

its operations. High-quality programs provide managers and supervisors with organizational values and the support to make those values relevant to their day-to-day operations. Such programs also hold them accountable for acting in alignment with those values. Since employees at all levels make ethics choices every day, the program must provide resources, guidance, and training for all employees that emphasize the importance of acting in accord with shared values, seeking help, and speaking up.

Principle 4: The organization encourages, protects, and values the reporting of concerns and suspected wrongdoing.

The greatest ethics risk to an organization is an environment where employees are unwilling or unable to make management aware of their suspicions that misconduct is taking place. High-quality programs foster an environment where issues can be raised before situations are elevated to the level of misconduct. They prepare leaders and supervisors to respond appropriately if and when employees come forward. They also help managers understand their impact and hold them accountable for contributing to an intimidating culture.

Principle 5: The organization takes action and holds itself accountable when wrongdoing occurs.

When misconduct and unethical behavior are alleged, firms with high-quality programs react quickly out of a commitment to accountability and organizational values. Investigations should be timely, neutral, thorough, competent, and consistent. When a violation is confirmed, the firm responds with appropriate consequences.

Access the full Ethics & Compliance Initiative report at www.ethics.org/certification/blue-ribbon.



Three Insights for Growing Business Relationships



What is it going to take for young up-and-coming engineers to be successful? Through his 40-year career as a business consultant with engineering and project management experience,

Edward Schultz has developed 25 insights on entrepreneurship and leadership that are critical to helping a motivated professional succeed.

In an excerpt from his book *Look Beyond the Obvious: A Blueprint for Transforming Managers Into Leaders*, Schultz offers three insights on helping young engineering managers to build better relationships with clients—essential to growing a business and getting recognized by firm leadership.

Insight #1: To understand that it's the client who pays the bills.

The concept of the interrelationships in business and with the client is relatively simple: You are in business to make money to pay yourself, your personnel, and your suppliers, as well as for the lights, heat, insurance, office supplies, materials, etc., but it's actually the client who pays the bills.

Whether you and your employees realize it or not, every action and inaction affects the client and your continuing relationships. Do you and your team truly understand the significance of these relationships? If not, it's a failure on your part. In fact, at the end of the day, it's always a management problem, issue, question and/or concern not identified or resolved.

You need to educate and train your staff on these critical relationships.

Think of it this way: Your least expensive sales are to current business clients. They are a known commodity, require low maintenance, have a quality reputation, and are reliable. Studies have shown it takes approximately five sales calls to produce that first order. It's the cost of doing business, of course, but when working with an existing client those costs have virtually disappeared, making each sale much more profitable.

Insight #2: To empathize and see your business through your client's eyes.

As they say in the game of pool, "There is a lot of 'green' between here and there" regarding the preparation and execution of the winning shot. The same could be said of the sales process. In "quality speak" the drivers are cost, quality, and delivery, but these must remain flexible enough to achieve maximum agility.

For example, the client has notified you of their intention to purchase a product or service from your organization. They want your product or service based on your reputation (that's the quality part); they have already agreed to the price (that's the purchase order part); and they have agreed to your delivery (obviously that's the delivery part).

From the client's viewpoint, the only thing the client can't control is your delivery. And guess what the issue becomes when you are late? That's right! Your value to their organization!

You may be surprised how many companies have actual disdain for a client's problems. "They're too busy." "They don't give us enough work." This "strategic assessment and historical attitude" may work in the short-term, but if you start losing clients you need only look in the mirror to get the answer.

Insight #3: To recognize that creating and retaining clients is the business.

As the owner, CEO, or president of the company, your only business is the business. This should be your focus every single day of your professional life. If you provide a quality product or service, at a competitive price, and deliver on-time all the time ... you'll be in a profitable business for many years to come no matter what the economic climate.

Words like brainstorming, thinking outside the box, creative or critical thinking or as I like to say "look beyond the obvious" become the spark or double-check for reality. Will the products and services you have today keep you in business tomorrow? Next year? How about in three years?

When "looking beyond the obvious" isn't part of the discussion, it may be bad news on its way to happening for the home team. For example, if money is the end game, you may make money today but what about tomorrow?

Edward Schultz is a business consultant and counselor. He can be contacted through his website at www.insightslbo.com.