

NSPE

Future of Professional Engineering Task Force

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Key Themes from Dallas

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Internal Issues/Topics

Licensure

- Why get a PE?
- Stamping vs. Certifying
- What do we do about the "Civil Engineers Club"
- Plans and Reports... but Applications and Permits too?
- International Models and Specifications
- Filing Complaints/Self Policing
- Early Taking of the PE Exam
- Specialization and Fragmentation of the License

Role of the PE

- What do we do and not do?
- What should we do?
- Delivery of our Services (paper, digital, web?)
- Understanding the "Drill" and "Hole"?
- Liability
- Risk
- Global Perspective - Not just your building but ALL buildings
- Selection Committees - PE inclusion
- What can we learn from other professions?

External Issues/Topics

Value

- Why get a PE?
- Why hire a PE?
- Why is a PE important?
- Value vs. Commodity
- QBS
- Affluence vs. Need/Accessibility PE Services
- NSPE touches everything in the profession
- PE presence should lower insurance costs?

Messaging

- Tell our story!
- Lead the discussion
- Communicate Value
- Global Perspective - Not just your building but ALL buildings
- What is success?
 - Business = Successful Product
 - Engineering = Don't screw up
- Engineering and Marketing Professionals - Relationship in getting the message out
- Engineering (and younger) student engagement
- Don't be afraid to brag on yourself and the profession!
- What can we learn from other professions?

Task Force Overview

- 13 members
- PEs, CETs, non-licensed
- NCEES Officer, State Licensing Board Members, Business Owners, Google Employee, Attorney, Private Practice, Industry, Government, Public Policy Advocates

Emerging Technology

“The role of licensure in the future will be as important and necessary as it is today. The component of licensure that is unique is what gives it the importance. **It is the “conscience” component of human beings that no machine can possess.** It is the reality that the professional engineer must hold paramount the health, safety and welfare of the public. **It is the ethical chip of the engineer that no computer has.”**

Emerging Technology

- “I’m not good with computers”
- To be advocates of public well-being, we must be good at technology

Emerging Technology

- “Learn then Promote”
- We must possess the basic fluency of the new technologies being discussed

“Lacking that understanding would be the equivalent of advocating, for example, that "we must build chemical plants safely" without first possessing an engineering understanding of chemical reactions, reactor design, and the technical variables that make a particular chemical plant design more or less safe than another.”

Industrial Exemption

- Partly responsible for low Licensing numbers
- Eliminating would be a HUGE task
- NCEES Task Force
 - Emphasize PE in the Classrooms
 - Modifications to Reciprocity
 - “Grandfathering”

Public Policy and Professional Engineering - Threats

- Attacks on Occupational Licenses
- Licensure vs. Certification
- Fragmentation of Licensure
- Non-Competitive Environment

Attacks on Occupational Licenses

- Driven by “Less Government”
- Threatens to de-value/eliminate PE
- We must...
 - Articulate the difference between Occupations and Professions
 - Drive narrative with value! “
 - Monitor Licensure Models and Legislation
 - Individual and Organizational Advocacy

Licensure vs. Certification

- License – Legal requirement to practice
- Certification – Voluntary but some markets may require or give preference

Licensure vs. Certification

- Certification is not a bad thing
- Certification should be an addition to Licensure, not replacement
- Certification embraced by other professions to demonstrate specific proficiencies/abilities

Fragmentation of Licensure

- Discipline Specific
- Increased Education Requirements
 - Primarily Civil – ASCE
 - In addition to Bachelors

Non-Competitive Environment

- Long-term Sustainability is paramount
- Value vs. Commodity
- Qualification Based Selection
 - Protects Public Welfare
 - Protects Taxpayers
 - Promotes Technical Innovation

Public Policy and Professional Engineering - Advocacy

- Roughly 2.5 million Engineers in US
- 5 of 541 seats filled by Engineers
- Important to be Active... It starts with you!
- “Citizen Engineer”
- Organizational Advocacy

Engineering Education

- Expanding Body of Knowledge vs. Declining Credit Requirements
 - Expanding Body of Knowledge No Longer Fits in the Bucket
 - The Bucket is Getting Smaller!
 - Avg 144 Credits 25 years ago
 - Avg 128 Credits Currently

Engineering Education

- Technical is Expanding
 - Discipline Specific
 - Emerging Technology
- Beyond the Technical
 - Ethics
 - Licensure
 - Project Management
 - Leadership
 - Communications
 - Finance
 - Public Policy

Engineering Education

- Other Professions Faced with Similar
- NCEES and Increasing Requirements
 - NCEES PS 35
- Global Competitiveness

Licensure Model and Mobility

- Streamline the Process
- Increased Practice Across Jurisdictions
- NCEES Model Law Engineer (MLE)
- Temporary Permits (1 year)
- Other Models?
 - Diploma Privilege
 - Compact Model

International Licensure

- World Markets Expanding
- Facilitate Flow of Engineers and Projects
- Ensure Rigorous Standards
- Follow NCEES Lead

The Role of the Certified Engineering Technician and Certified Engineering Technologist

- **Requiring More for Less**
 - Competitive Business Model
 - Paralegals and Physician Assistants
 - What tasks can be shifted?
 - Value-Added role in the Engineer's Toolbox
 - NSPE must be PROACTIVE in communicating the value of CT/CET
- **Supervision of PE Maintained**

The Role of the Certified Engineering Technician and Certified Engineering Technologist

- **The Professional Engineer...**
 - ...holds an engineering license and is qualified to be professionally responsible for engineering work
- **The Engineering Technologist...**
 - ...exerts a high level of judgement and generally specializes in one or more technical areas while under the direct supervision of the Professional Engineer.

Alternative Delivery Methods

- Increased Usage
- States Have Varying Rules
- Many Forms – Varying Benefits/Risks
 - Design Build
 - Progressive Design Build
 - Construction Manager at Risk
 - Integrated Project Delivery
 - Competitive Sealed Proposal
 - A+B Bidding

Alternative Delivery Methods

- Owners have Varying Goals
- Owners Face Risks
 - Lack of Experience Developing and Negotiating Contracts
 - Lack of Control over Material Choices and Design Elements
 - No Direct Contractual Relationship with Design Engineer

Public Sector Engagement

- Valuable Perspective
- PEs on Selection Committees
 - Enhances QBS
 - Technical Aspects
- “If you build it, they will come...”

Defining and Communicating Value

- This is Central to Each Topic
- Telling our Story
- Not “What” but “Why”
- Communicate Value to Public
- Communicate Value within Profession
 - Licensed and Unlicensed Engineers
- Strategic & Broad Partnerships
 - i.e. ASCE, APWA, SAME

Defining and Communicating Value

- We must...
 - **Continue/Increase Promotion and Emphasis of the PE**
 - **Exhaustively promote and market Code of Ethics**

The preamble to the NSPE Code of Ethics states:

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

Defining and Communicating Value

- We must...
 - Continue and expand the use social media
 - Engage with college students to help them understand they are part of a proud and valued profession
 - Engage with professors to promote licensure for their students
 - Sponsor local events geared toward science and engineering
 - Issue press releases
 - Publish studies
 - Provide opportunities for PEs to share their stories

Recommendations

- Over 40 recommendations
- Covering each topic
- Reviewed by COPA against PP/PS
- This is the “So what?”

Timeline

October 2016 – First Task Force Call

March 2017 – Initial Draft to the NSPE Board

March 2017 – Board extended Task Force into 2018

July 2017 – Update to PECon 2017 in Atlanta

August 2017 – Presentation at NCEES Annual Conference

January 2018 – Final Deliverable Outline to NSPE Board

March 2018 – Draft and Presentation to NSPE Board

Timeline

May 2018 – Recommendations to COPA for review

June 2018 – Final DRAFT to Board with COPA comments

July 2018 – Final Report and Presentation at PECon

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