

U.S LICENSURE: CURRENT ISSUES, FUTURE CHALLENGES

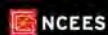


Jerry Carter, Executive Director



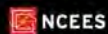
NCEES advances licensure

- **A nonprofit corporation**
- **Its members: the state licensing boards for engineers and surveyors**
 - All 50 states, the District of Columbia, Guam, Puerto Rico, and U.S. Virgin Islands



U.S. Engineering licensure

- P.E. = “professional engineer”
- What does that mean?
 - Education
 - Experience
 - Examinations (two)
- Protects the public



Current issues in licensure

$$\begin{aligned}
 \text{rate} &= Q_3 C_3 + Q_w C_w \\
 &= \left(\frac{5 \text{ m}^3}{\text{sec}} \times 10 \frac{\text{mg}}{\text{L}} \right) + \left(0.5 \frac{\text{m}^3}{\text{sec}} \times 100 \frac{\text{mg}}{\text{L}} \right) \\
 &= \frac{100 \text{ m}^3 \text{ mg}}{\text{sec} \cdot \text{L}} \times \frac{1000 \text{ L}}{\text{m}^3} = 100,000 \frac{\text{mg}}{\text{sec}}
 \end{aligned}$$

$$\begin{aligned}
 \text{rate} &= Q_m C_m = (Q_3 + Q_w) C \\
 &= (5.0 + 0.5) \frac{\text{m}^3}{\text{sec}} \times C \frac{\text{mg}}{\text{L}} \times \frac{1000 \text{ L}}{\text{m}^3} \\
 &= 5,500 \cdot C \frac{\text{mg}}{\text{sec}}
 \end{aligned}$$

$$\begin{aligned}
 \text{rate} &= k C V \\
 \frac{0.2}{\text{day}} \times C \frac{\text{mg}}{\text{L}} \times 1 \times 10^7 \text{ m}^3 \times \frac{1000 \text{ L}}{\text{m}^3} \times \frac{1 \text{ day}}{24 \text{ hr}} \times \frac{1 \text{ hr}}{3600 \text{ sec}} \\
 &= 23,150 \cdot C \frac{\text{mg}}{\text{sec}}
 \end{aligned}$$

$$\begin{aligned}
 \text{rate} &= \text{Output} + \text{decay} \\
 &= 5,500 \cdot C \frac{\text{mg}}{\text{sec}} + 23,150 \cdot C \frac{\text{mg}}{\text{sec}} \\
 \frac{\text{mg}}{\text{sec}} &= 28,650 \cdot C \frac{\text{mg}}{\text{sec}}
 \end{aligned}$$

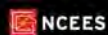
Current issues: education

- **How much education is needed to ensure that a P.E. is competent?**
 - A bachelor's degree?
 - A master's?
 - Something else?



Education

- **In recent years, the Council has voted to raise the level of education required for the P.E.**
 - The “master’s or equivalent”
 - What does “equivalent” mean?
 - Details remain TBD; 2020 effective date
 - Will the states be able to make it law?



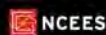
Licensure across state lines

- You must have a valid PE license in each U.S. state in order to do work in that state
- Comity licensure – recognition of credentials from another jurisdiction
- NCEES exams need only be taken once



Mobility and licensure

- Engineering is a mobile profession.
 - Career footprints extend beyond state lines.
- The Records Program has grown in popularity in recent years.
 - Designed for licensees who need to work in additional states
- Stores transcripts, references, exam results



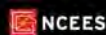
The objective

- **NCEES wants more engineers to be licensed**
 - Stronger standards → a stronger profession
 - Benefits the public welfare
- **NCEES wants the best and brightest to become engineers**
 - Engineers are the *doers* of the economy



International applicants

- **Most states require a degree from an ABET-accredited program.**
 - What about those from abroad?
- **NCEES Credential Evaluations**
 - Compares education to NCEES-developed standard
 - Provides evaluations to licensing boards



or 3' - Length of Bar = 5'-6"
 ring : 6' c/c = 5'-6" $\frac{66}{6}$ = 11 spacings 12 bars
 1/16" Diameter : No of Bars = 12 x 2 = 24
 1/ Bar = 24 x 5'-6" x 1502 lb
 = 24 x 5.5 x 1502 = 198,132 lbs
 = $\frac{198,132}{2000}$ = 0.0991 tons
 4 895/ton = 895 x 0.0991 = \$ 88.70

 4 1'-0" x 1/2" ϕ
 1 @ \$ 15.90
 5 \$ 15.90 x 4 = \$ 63.60 = \$ 64[±]

 Footing
 Rebar : \$ 88.70 } \$ 152.30
 24or Bolts : 63.60 } \$ 152.00

Global Challenges

NCEES International Activity

NCEES is a signatory to:

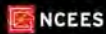
- **Asia Pacific Economic Cooperation (APEC)**
- **Engineers Mobility Forum (EMF)**

NCEES is not a signatory to the Washington Accord

NCEES International Activity

NCEES exams are being offered in:

- Alberta (APEGGA)
- Seoul, Korea
- Tokyo, Japan
- Saudi Arabia
- American University in Cairo



QUESTIONS?
OBSERVATIONS?

