Report on the

2nd National Summit on Separate Licensing of Structural Engineers

February 15-16, 2002

ASCE Headquarters

Reston, Virginia

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K Graph Showing Pros and Cons of Existing Licensing System

Introduction

Presentations

The first day of the summit consisted entirely of presentations from representatives of different organizations that discussed their development of licensing concepts since the last summit. A summary of each presentation follows, and the presentation slides, where available, are included as attachments (Attachments B through E).

Presentation #1
"NCEES Task Committee on Separate SE License"
Gregg Brandow

Presentation Summary

Dr. Brandow represented the Structural Engineering Examination/Recognition Task Force (SEERTF) within National Council of Examiners for Engineering and Surveying (NCEES). The NCEES is comprised of members of engineering and surveying licensing boards, with all jurisdictions represented including U.S. territorial jurisdictions. Brandow explained that each state determines its own regulations, and any effort to change the system must go through them. NCEES provides a good vehicle to do this.

The NCEES appointed the Structural Engineer Examination/Recognition Task Force (SEERTF) to explore the issues related to licensure for structural engineers and report back to NCEES. Specifically, NCEES asked the task force to summarize the problem, gain input from other structural engineering organizations, explore the idea of certification, define the appropriate role for NCEES, and present findings and recommendations to NCEES at their annual meeting this summer.

The task force defined the problems as a lack of mobility and comity, recognition, and uniformity of testing and qualifications.
Brandow described the recommendations that SEERTF will provide at the annual meeting as follows:

- NCEES is the appropriate organization to address this issue.
- NCEES should formulate a model law for recognition of structural engineers that can be adopted by NCEES and member Boards.
- NCEES needs to utilize the records program with changes in the model law providing for an NCEES SE Certificate. This certificate is not a substitute for licensure. It is intended to facilitate mobility and comity and recognition.
- SEERTF does not believe that SE certification by other organizations is acceptable.

Brandow explained that a model law for structural engineers will define the experience, education, et cetera required to practice structural engineering. States can use a model law, but they are not required to do so. It is also up to the states whether they use a Practice Act or a Title Act. NCEES is encouraging them to use a Practice Act, but the individual states can choose as

they like. He referred to the architectural certification program run by NCARB as a good model for SEs to use.

Post-Summit Questions to Presenter

1. What is the one concept you wanted the audience to come away with?

The SE profession needs to recognize that licensing of SEs is by the states, and in order to achieve an improvement in consistent licensing, comity, and recognition, an organized national effort is needed. The goal should be a program that is similar to that of the architects' program run by NCARB. This program is based on relatively consistent individual state licensing requirements with a national program run by NCARB that provides architects with a certificate that can be used for comity and recognition.

2. What is the best solution and why?

There are two ways to achieve change in SE licensing at the state boards of registration. First, organized state efforts by SE organizations have achieved SE practice or title acts in a few states. These efforts have also failed in other states because boards do not see the need, benefits or national pressure for such a change. Second, NCEES can create a model law for SE and can create a program like that of NCARB for SEs. This program can then be promoted to the state boards to improve mobility and comity, and consistent licensing requirements. I believe that in order to achieve significant change, both approaches are needed simultaneously as part of a national promotional effort by SEs.

A task force at NCEES will recommend to the annual meeting that NCEES pursue the model law SE approach with a program that provides a certificate for comity and recognition. The SE profession should support this approach and immediately let all the state boards know of this support.

The time is right for a national push toward consistent licensing, and SEI and NCSEA should actively support and participate with NCEES to create a program that achieves the goals of the profession and provides for public health and safety.

Presentation #2
"The Case for a Separate SE License"
Gene Corley

Presentation Summary

Dr. Corley emphasized that structural engineers are responsible for human life, and all of the actions that we take as a profession should reflect this truth. He went on to say that in order to protect human life, society must be assured that structural engineers are qualified through the three Cs: education, experience, and examination. He also suggested yet another "C" to consider – enforcement.

He stated that "a lot of people are willing to do structural engineering without a license." Without adequate enforcement, these individuals are able to do as they please. Based on Corley's experiences with forensic cases, he attested that there are more collapses than the public realizes. It is especially true for industrial facilities where things can go unnoticed by the law. If we were to remove the law from the qualification process for structural engineers, we relinquish all ability to enforce qualifications.

He then elaborated on his opinions about the three Es. Structural engineers can come from a civil or architectural engineering program that, as a minimum, includes analysis, design, and materials. He acknowledged that not all schools cover all materials, but "experience can serve as a substitute" if the experience is in structural engineering. He believes that the examination issue is much more controversial. The exam should cover all materials we use daily so that the examinee proves that he or she knows how to use each material in design. He continued, "I believe that the only way to know ability is to test design through examples." Corley then outlined the advantages and obstacles to separate licensing and highlighted the problems with certification. His lists follow:

Advantages of separate licensing:

1. Force of law: licensing can be enforced by states
2. State administrators
3. State enforcement is positive for the following reasons:
    - NCEES is working with licensing board to create "model law"
    - The enforcement can be subcontracted out. Corley know of two jurisdictions that administer subcontracts with a private firm.
    - Done through the attorney general
    - Most states have lawyers within the department

Obstacles to separate licensing:

1. People are suspicious of change. We need to explain why it is necessary and make it clear how grandfathering works.
2. We need to be persistent. Maybe we won't get it the first time, but we need to be persistent and go back again.

Problems with certification:

1. If it isn't through the state, the public will be confused.
2. No enforcement (Relies on voluntary adherence)
3. Opposed by State Attorney Generals. The initial feedback is that some might oppose it (and file a suite).

Corley believes that the primary goal of licensing is to protect the public and the best way to do that is through separate licensing. He believes that either a title act or a practice act is better than nothing, but that a practice act is best.

Post-Summit Questions to Presenter

1. What is the one concept you wanted the audience to come away with?

Structural engineers always deal with life safety while other design professionals deal with appearance, comfort, lighting, et cetera. Consequently, to protect the public, structural engineering needs to be done only by those who are qualified. Separate licensing of structural engineers is the only way to assure that the public is protected. Certification is not an acceptable approach because there is no method to enforce it.

2. What is the best solution?

Structural engineers in each state should organize to get their legislature to pass a law for a separate license for structural engineers.

Presentation #3
"The Case for Certification of SEs"
Sanjeev Shah

Presentation Summary

On behalf of the NCSEA Certification Committee, Sanjeev Shah spoke about the dilemma that he believes the profession is facing and discussed how certification can solve some of its problems.

Shah explained the purpose, mission, and organization of the NCSEA Certification Committee and described how it was formed. This information is nicely illustrated in Shah's slide presentation provided in Attachment C. After this brief introduction, Shah spoke in depth about the state of the profession today. He emphasized the following points:

- States have non-uniform licensure requirements (Attachment C, Pages 8-11)
- The structural engineering curriculum at universities throughout the country have declined and are no longer adequate (Attachment C, Pages 12-18)
- Codes and standards are growing more and more complex (Attachment C, Pages 19-25)
- Project delivery methods are more complex (Attachment C, Pages 26-27)
- What are other professions doing? (Attachment C, Page 28)

For the remainder of his presentation, Shah discussed some of the considerations for a viable certification model including the need for appropriate qualifications, enforcement, perceived value to engineers, and adequate grandparenting provisions. He explained that if these issues are handled properly, certification will benefit the profession. As an example, he described the current "defacto certification program" that is already successfully used by some DOTs.

Like Corley, Shah believes that separate structural engineering licensure is the ultimate goal, however, he thinks that certification is the best stepping stone to achieve it. Certification will provide a national yardstick by which all structural engineers can be compared. Shah explained that with this infrastructure in place, the profession can smoothly transition into a separate, national licensing system. Please refer to Attachment C for additional information.

Post-Summit Questions to Presenter

1. What is the one concept you wanted the audience to come away with?

Certification is the first meaningful step in the right direction to address the current state of our profession which includes:

- Non-uniform licensure,
- Declining university curriculum for the SE profession,
- Growing complexity of codes and standards, and
- Growing complexity of project delivery methods.

Certification will establish the first national yardstick, at an appropriate level of qualifications, by which structural engineers can be identified. This will result in a better assurance of standards of practice thereby leading to better protection of the public. Certification is a stepping stone towards the establishment of uniform structural engineering licensure – not an end in itself. It will take a generation for us to effect the changes, but we can and must start now. Certification, since it is voluntary, can happen now.

2. What is the best solution and why?

Certification is a stepping stone to uniform structural engineering licensure. Certification establishes the first national yardstick, at an appropriate level of qualification, for structural engineers. Certification does nothing to replace existing licensure, but it does establish the profession's consensus on the appropriate level of qualification that can then be translated into uniform licensure requirements. Today, less than 20 percent of the U.S. jurisdictions have structural engineering licensure (and it is non-uniform). Certification will not hinder the profession in these jurisdictions, but will help the standards of practice in the balance 80 percent of the United States where there is little or no recognition of the structural engineering profession. There is consensus that improving the standards of practice will protect the public better. NCSEA has already developed a certification model and is continuing a dialog with the structural engineering profession. Also, NCSEA is evaluating the legal, administrative, and other issues for the implementation of a meaningful value-added certification program that will not be self-serving. It is essential, as the participants of this summit voted, that CASE and SEI support these efforts for the betterment of the profession and the protection of the public.

Presentation #4
"Benefits of a Single Professional Engineering License"
Walt LeFevre

Presentation Summary

Walt LeFevre is the ASCE representative to the Engineering Licensure Qualifications Task Force for NCEES. This group is looking at broad engineering issues for all engineers including the three Es. Please refer to Attachment H for more information about the topics this task force covers.

LeFevre was expected to discuss the benefits of a single professional engineering license, but instead he discussed the existing system at length and explained how certification would work well with it. His key points follow.

Background on NCEES

- Composed of members of jurisdictional boards
- Develops exams, model laws, and guidelines
- Has no power to enforce their requirements
- Promotes licensure mobility; however, an NCEES recommendation does not mean that the states will follow.

Survey of existing situation

Educational requirements
- Some states only accept ABET
- Five states don't have any educational requirements

Experience:
- Most states accept four years except one jurisdiction
- Qualifying experience requirements vary
- Experience under a P.E. generally required (but some don't)
- What do people do when no one at their job is a P.E?
- Comity problems exist

Exam:
- F.E. exam is used to validate non-accredited education (although it can't do this adequately)
- P.E. exam is used to validate experience (but it doesn't do it adequately)
- The current system tests for minimum competence, not excellence.

Modification of the current model law
- Engineering Licensure Qualification Task Force looking into changes
- There are many proposed changes to the model law. The task force is now down to four proposals, and none of them look like the current law.

Summary of thoughts

- ASCE Policy 465 states that ASCE supports a "Masters Degree or equivalent (MOE) as a prerequisite for licensure." ASCE did this with an eye on the future. This does not mean that the current system is inadequate now.
- The licensure process
  - The laws are minimal
  - The profession wants excellence, and we need a new process to ensure quality
- We need a national board of structural engineers for certification; the board could control the process
- The current system plus certification is the best way to go.

LeFevre would like to receive comments via e-mail at the following address: ewl@engr.uark.edu

Post-Summit Questions to Presenter

1. What is the one concept you wanted the audience to come away with?

Board certification is preferred over separate licensing because the certifying board would give national recognition rather than state by state recognition.

2. What is the best solution and why?

The structural engineering profession should come together and form a certifying board. They should then promote certification immediately rather than waiting for state by state structural licensing.

Certification of excellence in structural engineering is preferred over minimum-competence licensing by states.

Presentation #5
"Educational Requirements for SEs in the Future"
Craig Barnes

Presentation Summary

Craig Barnes is the chair of the SEI Business Practices Committee, a joint committee of SEI, NCSEA, and CASE. He shared the results of a curriculum survey of U. S. colleges and university that was administered by the group. The results below show that many universities don't even offer what many would consider standard coursework, much less require them.

Survey of college/university curriculum
(Some of the courses are offered but not required)

Course	% of colleges/universities that offer/require course
Analysis	100%
Matrix Analysis	90%
Steel	100% / 60% require
Concrete	100%
Timber	41% / 25% require
Masonry	41% / 25% require
Dynamics	60%
Foundation	100%
Technical Writing	70%

Barnes did not spend a lot of time discussing his preferences for educational requirements in the future. He simply stated that there wasn't a consensus about how much education was enough, and while some people wanted more education, others wanted less.

In addition to discussing the coursework offered, Barnes had several recommendations to help improve the quality of education. He explained that we need to use our resources such as ABET, the Fundamentals of Engineering Exam, and practitioners better. Practicing engineers need to get more involved and mentor students through capstone projects and laboratories, and universities need to include more capstone projects in the curriculum that teach design. Also, more professors should have their professional license, and the universities should create more excitement by focusing on interesting ways to present material.

Post-Summit Questions to Presenter

1. What is the one concept you wanted the audience to come away with?

Hopefully my presentation let the audience develop a feel for the problems with our educational system that brought us to this point and provided a brief description as to where we see the next efforts in the education process. There is a real problem with decreasing credit hours and the resulting education an engineer receives. The result is a student without sufficient

talent to perform at a production level when they enter the work place. This is generally the rule rather than the exception.

2. What is the best solution and why?

As we continue to explore the resources available to change the direction of the education process, we find new allies willing to assist in affecting change. Our academic institutions must become more proactive in resisting pressure to reduce credit hours and to reduce watered-down courses. It is unfortunate that the structural engineering community is so small. Small means less clout in this case. We are going to find that there are some schools willing to give up the structural program rather than gear up for what is necessary to change. The cost will be perceived to be too much for such small gain in bottom line. Like any business decision, a "line" that is losing money is a poor bet. We will need to align ourselves more solidly with ABET and NCEES, who have name recognition in the engineering community.

Presentation #6

"Examination Aspects of License and Certification"
John Shipp

Presentation Summary

John Shipp listed the examination options available including: 1-tiered and 2-tiered testing; separate or combined testing for bridge and building engineers; and multiple choice, essay, or oral exams. He gave two significant recommendations relative to the preferred examination process for the future.

First, he believes that engineers should only be allowed to practice in the areas of expertise in which he or she is tested. This would most-likely require two levels of examination with a total of 16 hours of examination and separate examinations and licenses for both building and bridge engineers. He believes this is needed because of the significant differences in code requirements and design criteria. You will notice that the breakout groups on examination opposed Shipp's view by preferring one test for both buildings and bridges.

Secondly, he believes that a "multiple guess" format does not test ability adequately, and essay questions are required. He submits that essay questions do take longer to grade, but the grading process isn't what slows licensure down and the extra effort is worth the improved public safety. He also suggests that the exams for both bridge and building engineers should include seismic issues, detailing, and design.

He concluded that separate licensing with a practice act is needed, and if certification helps, then he is for it.

Post-Summit Questions to Presenter

1. What is the one concept you wanted the audience to come away with?

   A. SEI should work with NCEES to generate and implement separate structural engineering license examinations as a primary effort and support a certification program (with the same examinations) as an independent means, the final purpose of which is to be able to be accepted by the various states to issue a separate structural engineering license.

   B. The examination(s) shall be for separate structural engineering license practice act(s) and shall have the following main attributes:

   - Examination context and format: Analysis/theory, concrete design, steel design, wood design, masonry design, foundation design, all essay problems that incorporate significant code content and requires detailing of connections and members. The rigorous essay problems should include actual design and code content.

   - Two levels of examination and structural engineering license practice acts are required – entry level and advanced. Each examination should be a minimum of 16 hours.

2. What is the best solution and why?

The best solution would be to have a separate examinations and separate licenses for both building and bridge engineers because of the significant difference in code requirements and design criteria and the ability to test, enforce and police the practice. Note that the “vote” on this issue was to have one examination containing both building and bridge problems and only require that one type of problem is worked. This proposal is not considered viable by those engineers and representatives from NCEES who actually write the examinations.

Presentation #7
"The Role of Experience in License and Certification"
Richard Horn

Presentation Summary

To help us get a sense for the variability of the current experience requirements, Richard Horn summarized the results of a 2000 survey sponsored by NCEES of state licensing boards. The survey showed that all jurisdictions require experience before licensure. If the applicant came from an EAC/ABET accredited university, most states require four years experience under the direct supervision of a U.S. Professional Engineer, although the required sequence of experience varies. The differences are most apparent for applicants that did not attend an EAC/ABET accredited program. In these cases, the experience requirements vary from four years to simply not allowing licensure.

He pointed out that, in the future, we can choose rigid evaluation criteria and controls or we can depend on the "honor" system. We can rely on exams only (de-emphasizing experience) or make experience a more robust part of licensure.

Post-Summit Questions to Presenter

1. What is the one concept you wanted the audience to come away with?

A set of guidelines should be developed that define what constitutes appropriate experience for licensing as a structural engineer. A part of this experience should include completion of a "core curriculum" of structural engineering courses taught by ABET accredited institutions. The definition of experience should include acceptable breadth and depth of actual experience.

2. What is the best solution and why?

The participating organizations in the summit should establish a committee to write the experience guidelines. This committee should work with NCEES to establish a system that can be administered through NCEES. Existing guidelines from IstructE should be obtained and evaluated as a possible model for the experience guidelines.

A common set of guidelines is needed because many states using the NCEES data rarely spend any time evaluating experience and primarily rely of the information contained in an applicant's file. Utilizing guidelines would establish minimum standards and promote a consistent level of experience for applicants for the S.E. license.

Presentation #8
"Report from ASCE's Task Committee on Academic Prerequisites for Professional Practice"
Gerry Galloway

Presentation Summary

Gerry Galloway, Secretary of the US Section of the International Joint Commission, spoke on behalf of ASCE's Task Committee on Academic Prerequisites for Professional Practice ($TCAP^3$).

He stated that the task committee affirmed that "the current four-year bachelor's degree is becoming inadequate formal academic preparation for the practice of civil engineering at the professional level in the future." The committee recognizes several facets such as a reduction in credit-hours at the Bachelors level, a slippage of the engineer's educational status, low compensation, unprepared leaders, narrow formal education, et cetera, as contributors to this trend.

The task committee's charge is to develop, organize, and execute a detailed plan for the full realization of Policy 465, which was revised October 2002 to read as follows:

"The American Society of Civil Engineers (ASCE) supports the concept of the Master's degree or equivalent as a prerequisite for licensure and the practice of civil engineering at a professional level."

The revised policy, initially adopted October 1998, adds the phrase, "or equivalent as a prerequisite for licensure and" This revision incorporates the task committee's recommendation of a Master's degree or equivalent (MOE) and ASCE's concerns about requirements for licensure. The MOE increases the breadth and depth of engineer's formal education while establishing flexibility in how he or she gains the education. Please refer to the task committee's executive summary in Attachment G.

Presentation #9
Saturday Reception
"Licensing of Structural Engineers Internationally"
Keith Eaton

Presentation Summary

During a reception on Saturday night, Dr. Keith J. Eaton, Chief Executive of The Institution of Structural Engineers (IStructE), located in the United Kingdom, explained the role that IStructE plays in the certification of structural engineers throughout the world. The case studies are summarized in Attachment I. In order to become a member of IstructE, individuals must take a rigorous seven-hour examination that tests their competence in structural engineering. This examination is recognized throughout the world as a sign of competence, and automatically leads to registration as a professional structural engineer in many countries.

Post-Summit Questions to Presenter

1. What is the one concept you wanted the audience to come away with?

The key message that I was presenting was that structural engineering knows no boundaries internationally. The same high standards of competence are expected by governments and by the public everywhere, and consequently the systems of education, experience, examination and ethics in every country should be aligned so that structural engineers have a passport to practice everywhere. The Institution of Structural Engineers, with qualified professional engineers in 105 countries, was ideally placed to provide that framework for structural engineers within the USA (in conjunction with SEI and NCSEA) and for structural engineers wishing to move and practice internationally.

2. What is the best solution and why?

Maintain a close dialogue between SEI, NCSEA and the Institution of Structural Engineers in order to take these issues forward constructively.

Breakout Session Results

On the second day of the summit, each attendee participated in two breakout sessions, with both sessions about one hour and 50 minutes long. For each time slot, attendees were divided evenly into five groups, one group for each session topic listed below. With this configuration, two groups of seven to eight people discussed each topic.

Breakout Session Topics:

Pros and Cons of Separate Licensing
Pros and Cons of Certification
Examination Criteria for License and Certification
Experience Criteria for License and Certification
Pros and Cons of Existing System

At the end of the day, the leaders of each breakout topic summarized the consensus among the two groups discussing the topic. The summary of their presentations follow.

Breakout Topic 1 Results
Pros and Cons of Separate Licensing

Gene Corley summarized the thoughts expressed during the two breakout sessions. Corley displayed the following lists of pros, obstacles, and recommended actions that came out of the breakout sessions and briefly reviewed them. He explained that he used the word "obstacle" instead of "con" because no cons exist.

Pros

1. Protect the public
   - Experts in structural cases should be structural engineers.
   - Limits entry to structural engineering
   - Closer to international acceptance on basis of qualifications
2. Respect
3. Mobility
4. "Best" solution
5. Addresses information explosion
6. Easily enforced (State Board)

Obstacles

1. Difficult to implement in all states
2. Public may think it is self-serving
3. Restrictive (Engineers may need P.E. and S.E.)
4. Limits entry into structural engineering
5. State boards may oppose it
6. Civil engineers may oppose it (The recent situation in Alabama is an example of this.)
7. Architects may oppose it
8. Might lose SE Law (The recent situation in Arizona is an example of this.)
9. Savings clause important
10. Certification
11. Engineers are reluctant to do politics

Recommendations:

1. The three boards and ASCE should pursue separate licensing in all jurisdictions
   a. Practice act is preferred
   b. Strengthen 5 Es
   c. Support (Fund) efforts to pass on information about successes
2. Prefer to have separate board of SEs
3. If not separate board, get SEs on boards
4. Have a "Model Law" ready to go.
5. Have backers for the cause ready to go.
6. Need a model to give to NCEES (This suggestion given later in the day)

Breakout Topic 2 Results
Pros and Cons of SE Certification

Sanjeev Shah summarized the discussions in the breakout sessions for this topic and listed the groups' recommended actions. To sum up his remarks, Shah declared: "bootleggers don't want legal liquor!"

Summary of issues discussed:

- Certification is not the best solution, but it is a good solution that will lead to the best solution
- Some DOTs already have a defacto certification
- At the worst, certifications does nothing for the states that currently have structural engineering licensure
- For states without SE designations, certification will provide a measuring stick
- Grandparenting needs to be addressed
- Certification provides high standards
- Enforcement: Certification is not supported by police power; however, the discipline by our own peers has merit.
- Legal issues: The Business Plan Committee of NCSEA is looking into it
- An independent board will control certification
- Risk splintering of profession with academia and practitioners
- Risk delaying S.E. licensure

Recommendations

1. Certification committee should continue to explore legal issues of certification
2. Educate profession about needs and let them know the following:
    a. Certification will not replace licensure but is simply a stepping stone,
    b. We need to look at management of certification at national level,
    c. This can not be an end in itself,
    d. Grandparenting must have teeth, and
    e. Requirements must help practice act in jurisdictions.

Breakout Topic 3 Results
Examination Criteria for Licensure and Certification

Summary

During the breakout session, John Shipp posed a series of question and tallied the opinions in each of his breakout groups. The results of his questioning are giving in Attachment J. The following list of recommendations summarizes the feelings of the two breakout groups that worked on this concept:

Recommendations:

1. One structural engineering examination needs to be developed for both buildings and bridges. On the exam, the examinee can work on one type of problem and get the same SE license.
2. Two levels of examination should be required (entry level/advanced).
3. Exam should contain analysis/theory, concrete, steel, wood, masonry, foundations, code content, and detailing.
4. A practice act license and exam is preferred over a title act.
5. Oral exam, in addition to written exam, could be great contribution, but the reality is that it is difficult to implement.
6. Certification exam should be more difficult than license exam.

Breakout Topic 4 Results
Experience Criteria for Licensure and Certification

Rich Horn summarized the consensus and recommendations of the breakout session groups.

Consensus from one or both groups:

1. The Bachelors degree should be the minimum degree.
2. Structural engineers should complete a core curriculum in addition to the Bachelors degree. They can complete this core curriculum during the undergraduate degree (if available) or by a number of methods including a Masters degree or independent coursework. The exact requirements were not worked out, but it is expected that most applicants will have to get a Masters degree or equivalent.
3. A minimum of four years of experience is required.
4. Once the new system is in place, the four years of experience should be under the supervision of a licensed S.E. Until then, the supervision of a P.E. will be acceptable.
5. Most participants agreed that NCEES should keep the records.
6. The second group stated that they support continuing education.

Recommendations:

1. A set of guidelines should be developed that defines what constitutes appropriate experience for licensing as a structural engineer. Along with this experience, applicants need to complete a "core curriculum" of structural engineering courses taught by ABET accredited institutions. The definition of experience should include acceptable breadth and depth of actual experience.
2. The participating organizations in the summit should establish a committee to write the experience guidelines. This committee should work with NCEES to establish a system that can be administered through NCEES.

Breakout Topic 5 Results
Pros and Cons of the Existing System

Summary

Before elaborating on the breakout groups' thoughts, Ed Bergeron briefly described the existing system. Currently, 55 individual jurisdictions exist, and each has their own set of criteria. NCEES has a model law for professional engineers, but not all jurisdictions use it. While some states only recognize Professional Engineers, some recognize Professional Engineers and Structural Engineers, and each state defines the requirements for the two differently.

Pros of existing system:

1. The system really isn't broken
2. Carries the force of law
3. Addresses local differences (seismic, snow, wind, et cetera)
   "All engineering is local"
4. Minimum level of competence is demonstrated
5. Recognition of titles P.E. and S.E.
6. For most SEs, the current system works ok
7. No huge increase in public safety with higher qualification criteria
   (Howard Dutzi created a graphic that showed a small increase in benefit with large increases in effort past a certain point)
   Do we want to move up the curve?

Cons of existing system:

1. Not meeting the needs of the profession (educational requirements, high level of excellence desired, and changing needs)
2. Does not provide for certain threshold requirements (although states do, for example MA,CT, CA require peer reviews)
3. Transportability of license
4. The public is not as safe as it thinks it is.

Post-Summit Questions to Presenter:

1. What is the one concept you wanted the audience to come away with?

As a former member of the NH Engineers Licensing Board and NCEES, I'd like the audience to understand that it is my opinion that there is little chance of getting uniform adoption of separate structural licensing at individual state levels. Licensing Boards are political animals and include public members. Passing new legislation for separate licensing will require a new bill in each state's legislature, another unknown in the political process. I believe our energy would be better spent (and has the greatest chance for success) on policing ourselves through professional certification done by one of the professional societies.

2. What is the best solution and why?

The best solution is optional professional certification by a professional society in addition to the PE license.

Conclusion

James Cagley, our moderator for the weekend, summarized the professions accomplishments since last year's summit and established goals for the coming year. He believed that of the six action items developed at the first summit in November 2000, the group completed three of them as listed below:

#4 Develop a curriculum that the profession feels will prepare structural engineering students for our field. Promote this curriculum to the universities and the legislatures.
#5 Develop a certification procedure as an interim step to separate licensure.
#6 Meet again in a year to assess our progress.

The three items from last year's summit that Cagley did not believe we accomplished follow:

#1 Develop a model law that could be used by each state to provide more uniform licensing requirements.
#2 Create a National Examination Board.
#3 Develop a model law for Certification of Authority.

In order to get a better understanding for the mind-set in the attendees, Cagley conducted an informal poll shown below.

Informal Pole of Attendees

General Questions

#1 Do you support separate licensing for structural engineers?
The broad majority said yes. Jim Cagley pointed out this is an increase from the last summit.
34 yes 2 oppose

#2 Should we continue to pursue separate structural engineering licensing?
32 yes 3 oppose 1 abstain

#3 Do you support pursuing the concept of certification?
21 yes 11 oppose 4 abstain

#4 Do you support pursuing the concept of certification as an interim step to licensure?
23 yes 11 oppose 2 abstain

Recommendations/Actions

#1 The leaders of the three organizations need to meet to discuss a joint effort to proactively pursuing separate licensing.
The following will be considered in the meeting:

- Funding a committee,
- Finding champions in each jurisdiction, and

- Involving NCEES in all decisions so efforts aren't duplicated.

33 yes 3 abstain

#2 Pursue a separate licensing board for structural engineers. As a minimum, pursue having a P.E. who is a structural engineer on licensing boards. This should be included with Action Item 1.

33 yes 2 oppose 1 abstain

#3 The three organizations should support and participate in the ongoing work to develop a certification program.

31 yes 2 oppose 3 abstain

#4 The three organizations need to work with NCEES in order to develop appropriate examinations (possibly write the exams for them).

34 yes 1 oppose 1 abstain

#5 Ask (offer help to) NCEES to create a single application form for P.E./S.E.
(No poll taken)

#6 Agree on appropriate experience requirements for structural engineers.
Notes: (IstructE has a set in place)
(Don't duplicate efforts within the three organizations)

36 yes

#7: Meet again to continue dialogue

G:SEI/BPAD/Second licensing summit/Revised Report 2002